

Guorui Fan
Thomas S. Popkewitz *Editors*

Handbook of Education Policy Studies

School/University, Curriculum,
and Assessment, *Volume 2*

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Introduction: Education Policy and Reform in the Changing World

Since the emergence of the public education system, worldwide education reforms are still in the ascendant and increasingly in remarkable progress. Reforms with a spectrum of foci, including “progressive education movement,” “curriculum and instruction reform,” “educational system reform,” “education choices,” “educational equity,” “inclusive education,” “lifelong education,” and “smart education,” have been fostering the advancement of education in countries and regions all over the world and providing a wide range of opportunities for people from different countries, regions, and cultures to communicate with each other and learn from each other, resulting in worldwide reflection and discussion on the common challenges that education is faced with and the common value that education reforms share.

Modern education entails a continually complex set of relations with society. The study of the relationship between education and society relies on our knowledge and understanding of the relationships between the two. Over a century ago, in his review of Plato (Πλάτων, 428/427–348/347 BC)’s education philosophy, Dewey (1916: 97) commented, “The breakdown of his philosophy is made apparent in the fact that he could not trust to gradual improvements in education to bring about a better society which should then improve education, and so on indefinitely.” Similarly, Durkheim ([1977]2006: 166–167) believes “Educational transformation are always the result and the symptom of the social transformation in terms of which they are to be explained. In order for a people to feel at any particular moment in time the need to change its educational system, it is necessary that new ideas and needs have emerged for which the former system is no longer adequate.” It is in this stand in view with the relationship between education and society that Dewey (1900: 20) emphasized “Whenever we have in mind the discussion of a new movement in education, it is especially necessary to take the broader, or social view.”

A social system or an education system is a constantly evolving ecosystem, where its components coexist (Fan 2000, 2011). Hence, when studying the reform and development concerning education, we cannot conduct the research without setting it with the broader context of social life, reform, and the problem of change. These relations take on a distinct quality since the mid-twentieth century with the post-war efforts of recovery, reconstruction, and the reimagining of societies and

education. The relationship between education and society has begun to reveal a quality of mutual interaction and mutual promotion. In addition, increasingly rich and diversified education policy studies have enhanced the advancement of education policies and education reforms in practice.

Education Change and Development in the Social Change

Greek philosopher Heraclitus (c. 535–475 BC) illustrated the constant change of everything in his renowned statement “No man ever steps in the same river twice, for it’s not the same river and he’s not the same man.” Indeed, every individual is constantly changing as well, so it is with the natural and social environment that we depend on for living. Undoubtedly, education, ever since its birth, has been changing in terms of its form, function, and mechanism. Whether in the West or East, education, at least in its initial form, was a private matter when most educational activities were limited to individual families with the goal to pass on the work and life experience and social norms, while in coexistence with some forms of political and moral education only for the candidates of state functionaries and the offspring of dignitaries. Those forms of private education generated some reflections on personalized education. Not surprisingly, relevant reflections at that time focused only on the micro-level teaching and learning activities (Confucius et al. 1885/1967; Comenius [1632]1967) and the teacher–student relationships. At that stage, education theory was taken as “the whole art of teaching all things to all men” (Comenius [1632]1967). Obviously, those reflections on specific education processes scarcely have relevance with the education reform at the macro level. With the development of the modern society and the emergence of modern countries, the institutionalized modern school system has been established and is under constant improvement, and the compulsory education has been developed and scaled up as well. As a result, the connection between education and society is becoming increasingly close and the interaction between the two has become increasingly frequent and complex (Enarson 1967; Green 2013; Marshall et al. 1993).

The global architecture after World War II has undergone tremendous changes, and a series of major events have triggered worldwide competition for talents and in education among countries. The successful launch of satellites by the former Soviet Union in 1957 intensified the technology and arms race between the United States and the former Soviet Union. The United States passed *the National Defense Education Act of 1958*, whose purpose was “to provide substantial assistance in various forms to individuals, and to States and their subdivisions, in order to insure trained manpower of sufficient quality and quantity to meet the national defense needs of the United States” (The 85th United States Congress 1958). For the first time in its history, the United States related educational development to its national security. After the 1960s, the rise of and the independence of the third world nations (Tiers Monde) in Asia, Africa, and Latin America and the emergence of the two major camps of the United States and the Soviet Union generated great turbulence,

division, and restructuring in the international community when a new pattern of the coexistence of “three worlds” began to emerge (Solarz 2012), and consequently education was granted the mission of the liberation, independence, and development of a nation. In the following half century, education reforms have been increasingly reflecting the will of a nation and the power of administration which employ education as an important mechanism for safeguarding national security and interests and achieving national development.

After the 1980s, with the revolutions of 1989 in Central and Eastern Europe and the disintegration of the Soviet Union (1991), the Cold War between the United States and the Soviet Union generally ended, while other events including China’s Reform and Opening up, the European integration, Russia’s economic development plans, and Japan’s rapid economic development have led the world moving towards multipolarity. In this process, state-to-state competition has shifted from competition in the military sphere to competition in the economic, technological, and comprehensive national strength, and education has been entailed as a crucial component of each country’s capacity to improve or even maintain its economic welfare (Benjamin 1998).

Society keeps on developing in constant conflicts. Jacques Delors has described a range of tension in the society caused by technological, economic, and social changes, including the tension between the global and the local; the universal and the particular; tradition and modernity; the spiritual and the material; long-term and short-term considerations; the need for competition and the ideal of equality of opportunity; and the expansion of knowledge and our capacity to assimilate it (Delors 1996). Since the arrival of the twenty-first century, the three major social development trends of political democratization, globalization, and information communication technology have profoundly shaped education reforms and development in different ways.

The word “democracy” was derived from the Greek word “demos” which means people. Democracy is based on the principles of the decision-making by the majorities and the respect for the rights of individuals and minorities at the same time, which is a manifestation of freedom in institutionalization. In a democratic system, the management of state and public affairs is the exercise of rights and the fulfillment of duties by all the citizens, either directly on their own or by their freely elected representatives. Therefore, democracy entails the respect for citizenship, which reflects the shift from centralization to decentralization in government’s management style. In this process, education has always been taken as an important vehicle for achieving political democracy. For example, besides its elaboration on the relationship between education and democratic society, Dewey’s classic book *Democracy and Education* also guided us to construct a more democratic society through educational experiments (Dewey 1916). In the arena of education, the democratization of education was introduced by the student movement in the late 1950s, which placed the equal access to education as the principal task of democratizing education. Since then, with the efforts of international organizations such as UNESCO (Faure et al. 1972: 70–80), the connotation of the concept of democratizing education is under constant renewal and redefinition, from the equality of

opportunities for enrollment to schools to the equality of opportunities for the access to educational resources and the equality of educational outcomes, and further to the democratization of the teacher–student relationships, as well as the democratization and equity of educational activities, educational methods, and educational content, which all contribute to increasing opportunities for students to have a range of options to choose freely for their individual needs.

Shaped by the New Public Management and other theoretical trends, there is an imperative call in the field of education management at national level for the replacement of education management building on government authority and centralized power with decentralized and multiple participation education governance. In accordance with his advocacy of free market principles, Milton Friedman’s “free to choose” theory became a weighty theoretical framework for liberal education reforms (Friedman et al. 1979). In the attempt to increase education competition, the implementation of a series of educational policies and reforms including school vouchers, charter schools, and school-based management has entitled school choice rights to parents, which simultaneously has broken the monopoly of education by the government and the education administration to a large extent, restructured the school system and school organization, and consequently stimulated the vitality of the school and teachers. Although more studies should be conducted to find the evidence for their impacts in improving the quality of education, these reforms are stimulating profound reflection on how the disadvantages of the traditional public education system can be overcome while still conforming to the trend of social and cultural autonomy, locality, and pluralism, and how the motivations, initiatives, and creativity of schools, teachers, parents, community members, local school districts, and governments at all levels can be stimulated to engage in the course of education with a shared vision for the construction of better public education.

Although when Theodore Levitt first proposed the concept of “globalization,” the term was largely limited to the field of markets (Levitt 1983), and people may have different understandings of its concept, yet it has become a focal concept that represents the interdependence and the increasing global connections between countries in the field of politics, economy, and trade and reflects the development of human life on a global scale and the rise of the global consciousness. Hence, globalization has become a social trend of thoughts and social phenomenon that shapes the global economy, politics, and culture.

There is no doubt that the increase of the interconnectedness between countries brings economic prosperity and the overall improvement of people’s living standards and quality of life. However, the flow of capital and commodities generated by globalization and an integrated global market as its fruit have presented profound challenge to human’s beliefs and competencies (Brown et al. 1996). At the same time, the exchanges and collaboration in culture, science, and technology and the global flow of talents shaped by globalization have enhanced the prosperity of education and empowered the corresponding changes in people’s beliefs and competencies. The development of globalization compels countries to strengthen international education exchanges and collaboration, encourage international exchanges of teachers and students, expand international trade in education services, scale up the

education for international students, and jointly support the children in undeveloped areas as endeavors for global education governance. The concept of education for sustainable development and the actions for change should be integrated into the education strategies and action plans at all levels of a nation. Hence, we should enhance the education for international understanding and collaboration to cultivate active and knowledgeable citizens for the establishment of a humane and equal international society and the deepening of international understanding and the understanding of the need for dignity as a common need for all humankind as well. Although globalization is confronted with doubts and criticism rising from the protection of local industries and the preservation of local culture, and even the challenges from the trend of “anti-globalization,” from the perspective of global education reform, a humanist vision of education based on “global common good” will still profoundly shape the education change and progress in many countries (UNESCO 2015). Just as Irina Bokova, the Director-General of UNESCO, stated, “The world is changing—education must also change. Societies everywhere are undergoing deep transformation, and this calls for new forms of education to foster the competencies that societies and economies need, today and tomorrow. This means moving beyond literacy and numeracy, to focus on learning environments and on new approaches to learning for greater justice, social equity and global solidarity. Education must be about learning to live on a planet under pressure. It must be about cultural literacy, on the basis of respect and equal dignity, helping to weave together the social, economic and environmental dimensions of sustainable development” (UNESCO 2015: 3). We believe that the statesmen and education policy makers in different countries will proceed from their national contexts and set the education goals of their own country for the balanced development of globalization and localization, adjust their education policies, and accelerate the advancement of education (Ayyar 1996; McGinn 1996; Bakhtiari 2011; Fan 2018).

Technology is the driving force for the progress of human society. In the evolving process of human society, the emerging of a new technology, whether it is a language, a script, the steam engine, electronic technology, computer technology, or mobile communication technology, has inexorably forced revolutionary changes in human life, work, and learning. Undoubtedly, technological innovation and progress will inevitably bring about changes in the educational process and educational ecology as well. In the past, the emergence of a language or a type of script, the invention of the paper, and the development of printing have enabled the instructional process to be achieved through the media of languages and scripts. What is more, remarkable changes in educational goals, mechanisms, and forms of operations were also largely shaped by the invention of the new technologies. At present, a wide range of information and communication technologies, including the internet, big data, blockchain, artificial intelligence, and 5G communication, is leading the human society into a new era. Technological innovation and progress are transforming the working mode largely based on the master of knowledge and the proficiency of skills that came into being in the Industrial Revolution. Consequently, artificial intelligence has replaced human beings in a range of fields to perform

numerous procedural and repetitive tasks, and the future work for human beings will be more complex tasks involving mentoring and managing machines.

The impact of intelligent technology on education is first manifested in the change of the requirements for human literacies. Mastering “3R” (Reading, Writing, Arithmetic) has become essential but inadequate literacies (European Commission 2018). Ever since the 1990s, the discussions on what kind of talents should the twenty-first century education cultivate has been increasing in terms of its size and scope. The report of Jacques Delors (1996) proposed the four pillars of the twenty-first century education—learning to know, learning to do, learning to live together, and learning to be. In the last two decades, countries around the world have invariably taken the initiatives to explore the concepts of the twenty-first century skills or transversal competencies that can empower their citizens for the future work and life (Care 2017). With an aim of developing lifelong learners with twenty-first century skills, a wide range of countries and international organizations including the United States, the European Union, the Organization for Economic Cooperation and Development, Finland, Singapore, and China have proposed their own frameworks for the twenty-first century literacies, skills, or competencies, with a common emphasis on cross-cultural competence, creativity, and critical competence (OECD 2001; NEA 2002; Finnish National Agency for Education 2004; European Commission 2006; Trilling et al. 2009; Ministry of Education, Singapore 2014; Lin 2016).

The enormous transformative power and imagination embraced in the emerging technologies like electronic whiteboards, virtual reality, e-schoolbags, and cloud technologies further advance education reforms, especially in terms of educational forms. Extensive Internet reading and Internet education platforms represented by MOOCs have given birth to new education forms. A variety of online education forms continues to emerge, and education integrated with information communication technology and artificial intelligence presents new features entailing deep learning, interdisciplinary integration, human–machine collaboration, adaptive learning, intelligent monitoring, and evaluation of teaching and learning process. Compared with the traditional formal school education, informal learning supported by technology is considered to have more capacity to empower young people to learn (not in the way that they have to be in school to learn) (Ito et al. 2009). The increasing openness of education makes it possible for the shift of education from the central role of teaching to truly focusing on the learning of the learners in the future. The future education is extending from the period of children and youth to a person's whole life, is expanding from institutionalized school education to the whole society, and from offline school education to more extensive online education where teachers will become an analyst of learning, a guide for learners' beliefs and values, a personal mentor, a companion of social learning, and a caretaker of psychological and emotional development (Fan 2018).

The Perspectives and Paradigms of Education Policy Studies

Jurgen Habermas' ([1968]1971) philosophical analysis of the human interests explored the complex relations of research as having different conceptions of human interests expressed in the objects of understanding, the modes of reflection, and the conceptions of change that organize the practices of the social sciences. This analysis is conducive to our understanding of the logical relationship between education reforms and education policy studies. When this notion of human interest, paradigms, or "styles of reasoning" are applied to understand the problem of change in the science of education, its diversity becomes visible in thinking about educational research and evaluation (Popkewitz [1984]2017). Regarding the paradigms of social science research, there exist several "styles of reasoning" (Hacking 1992; Popkewitz and Lindblad 2000; Lindblad and Popkewitz 2004).

To a large extent, education reform has become a global phenomenon or movement in the past two decades, with strong policy input and influence (Zajda 2015). An education reform, as a practical activity, is in fact the logical development of an education policy. With the spread of compulsory education, the expansion of education scale, and the strengthening of the role of the state in education, education has increasingly entailed the features of social and public affairs. The state has the rights and duties to run and manage education. Therefore, "education policy" naturally belongs to the category of "public policy" and acts as the crucial means and tool for the government to manage and develop education. Education policy, including regulations, codes, plans, guidelines, notices, documents, programs, and measures, is a norm or measure that addresses educational issues, resolves educational conflicts, and establishes and adjusts educational relationships. Education policy is not only a static existence, but also an organized and dynamic development process that emerges, exists, and adjusts in the course of educational activities—a static and dynamic unity. Education policy is a code of conduct, a normative existence, and a tool employed by a policy entity to govern the educational cause. Educational policy carries the feature of timeliness as it is formulated to meet the needs of development in a particular period in response to the problems existing and emerging in the education field in this particular period (Fan 2016).

Since the 1980s, a range of universities and educational research institutions have successively established education policy research centers or relevant policy research bodies. After studying the education scholars with high public impact in *the 2014–2015 RHSU Edu-Scholar Public Influence Rankings*, we found that 71 scholars, among the 200 short-listed scholars, specialize in education policy research and have extensive social impacts (Fan 2016b). Not surprisingly, educational policy has risen as a weighty research area of almost all national educational institutes. While educational policy research organizations are relatively independent, educational policy research methods and research topics are becoming increasingly comprehensive and diversified. In the actual progress of an education reform, whether it is decision-making based on concrete education issues, monitoring of the implementation process of education policy, or evaluation of the effectiveness of education

policy implementation, it is almost impossible for education to advance it without the support of education research. The development of education policies and education reforms is always interacting with education policy research, and hence they are mutually constructive. Studies on education policies can only find its meaning in entailing, caring, and moving towards practice, while in education reform practice, research results related to education policy always lead and support the actual practice of education reform, achieve the goals and ensure the values of education reform, and therefore enhance the development of education. This complex relationship among research, policy, and change has been the focus of academic studies both within and outside the field of policy research. In short, education policy research always points to educational practice. Recently, education policy research is presenting an orientation towards data-based empirical studies. Nevertheless, scholars have been constantly emphasizing the limitations of quantitative research in the studies of education policy and the importance of the historical and cultural perspectives in education policy research (Wirt *et al.* 1988; Phillips *et al.* 2004; Kofod *et al.* 2012).

The Problem-Solving Studies

Education policy and education reform are not only introduced to resolve the tensions and conflicts within the education system, but also to respond to the social changes in a particular period and coordinate the relationship between education and society. “Policy development and enactment should be seen both as an attempt to solve problems and an attempt to ensure that particular values that delineate action are accepted by those who enact policies” (Ward *et al.* 2016). Education policy studies strive to constantly seek for the harmonious and balanced relationship in the changing world between the components within the education system and between education and society through education policies and education reforms. In this way, education reforms are becoming more frequent while the steering role of education policy to education reform is becoming increasingly significant.

Education policy is not only a static existence, but also an organized and dynamic development process that emerges, exists, and adjusts in the course of educational activities—a static and dynamic unity. Education policy is a code of conduct, a normative existence, and a tool employed by a policy entity to govern the educational cause. Educational policy carries the feature of timeliness as it is formulated to meet the needs of development in a particular period in response to the problems existing and emerging in the education field in this particular period (Fan 2016). Undoubtedly, when we consider education reform in a constantly changing and developing social context, it does not demand sharp perception to notice that the education problems faced by different countries and regions in different times have something in common while unique in their own ways, and therefore, education policies in the attempt to solve these issues naturally vary, which collectively reflects the common

characteristics and distinct local features of education reform and development in different countries in the era of globalization.

Fred S. Coombs classified education issues into six types, including financial issues that attempt to answer the question “who pays, how much, for what?,” curricular issues that revolve around the question “what should be taught?,” access issues of selecting certain students for certain kinds of educational experience, personnel issues that come from the question “who should teach and administer the system?,” school organization issues arising from the question “how should schools be organized and run?,” and governance issues that address the question “who should make policy and who is accountable for the performance of the educational system?” (Coombs, 595–597). From his point of view, it is undeniable that the issue of education involves not only the state and the government, but also the components within the school. If we think of contemporary policy and research as entailing a “problem-solving apparatus,” prominent is the emphasis on professional development of the teacher and teacher education as a means to school improvement. In his studies on the complexity of school systems, Fullan (1993, 1999, 2003) elaborated teachers’ role as the change agent. It is true that the recent practice of educational change indicates that education reform relies more on the drive within the school, emphasizing that education change can be introduced by capacity building or school culture reconstruction and consequently, school-based solutions which in most cases are carried out by the school staff have been more widely accepted; Yet, regardless of the scope of the reform or the role it plays, government-led top-down reforms still play an indispensable part in the development of education reform; and this government-led education reform is made through education policy and implementation. The formulation of education policies calls for investigations and researches on the particular educational practices or issues.

The Empirical-Analytic Studies

As a type of cross-disciplinary research, policy research entails the principles and methods of statistics, philosophy, economics, political science, sociology, anthropology, psychology, history, and other disciplines. With the integration of education studies with studies in other disciplines, the methodology of education policy research is becoming increasingly diverse, from qualitative methods in the early period to the dominance of quantitative methods, to the combination of qualitative and quantitative methods, then to the wide application of ethnography (Halpin et al. 1994: 198), and now to the integration of multiple research methods (Burch et al. 2016)). The constant adjustments in methodology strives to study the effectiveness of education policy implementation by evidence-based methods, and to conduct random and strictly matched experiments based on the mutual trust between policy makers and educators, which has served as the basis for education policy and practice (Slavin 2002).

Numbers and statistics perform in policy studies as a way of telling the truth that seems independent of historical circumstances and social, historical conditions, in what has been called as a mechanical objectivity. One important element of research, as mentioned above, is the importance of statistics, and more recently the emphasis on metrics and algorithms in identifying the rules through which reforms are enacted and change is facilitated, constrained, or restrained. It is almost impossible to think about schooling without numbers: children's ages and school grades, the measuring of children's growth and development, achievement testing, league tables of schools, and identifying equity through statistical procedures about population representation and success rates.

The increasing use of statistical measure is important for multiple reasons in terms of the relationship between science and policy. Numbers have become part of ambitions to increase transparency and accountability of what is, and what is not, of value and importance. Theodore Porter's (1995) important book on the history of statistics in social arenas, for example, explores how numbers are parts of systems of communication whose technologies appear to summarize complex events and transactions. The numbers appear to be neutral and precise, providing powerful representations in concise and visible forms through tables, diagrams, or percentages. The mechanical objectivity of numbers appears to follow a priori rules that project fairness and impartiality in which the numbers are seen as excluding judgment and mitigating subjectivity.

At the same time, however, educational policy adjustments driven by data, such as the PISA project, have also induced negative outcomes of digital governance (Lingard 2011). Some scholars have pointed out that the way of describing the "truth" of the national school education system and children's education based on numbers is employed to distinguish and divide countries globally (Popkewitz 2011: 32–36). This way of constructing and representing the world with digital information in a seemingly objective and neutral way actually obscures the PISA's theoretical assumptions (Poovey 1998: 237), and as a result, a wide range of countries reform their education systems in an attempt to improve their rankings in the pursuit of economic utilitarian values with economic growth as the core goal while neglecting the intrinsic value of education to nurturing the growth of human beings. The emergence of the above issues calls for attention in the future education policy research.

The Historical and Cultural Studies

If the prior "problem-solving" or empirical-analytic style of reason about policy and research is associated with the enlightenment faith in reason and science for organizing and managing social affairs, a different style of thinking is brought into the present and activated in international discussions. This style of reasoning might be called "the knowledge problematic." The attention to "knowledge" as the object of study directs attention, at one level, to the historical system of reason that orders

what is thoughts, talking about and acted on. But the focus of research on the knowledge of schooling is not merely about ideas and “discourses” but directs attention to the historical conditions in which the classifying and ordering of the “seeing” is entangled with institutions and technologies to give the materiality of contemporary education. This rethinking of the problematic of research and policy studies is expressed by Latour (2004) in a different context of social and science studies. Latour argues that research is to reverse attention from what is assumed as the matter of concern to research that asks about *the concerns of what matters*. Brought into view is a particular notion of science that engages with the tradition of science that Marx engaged in with his analysis of capitalism, Weber with that of bureaucracy, and Durkheim’s interest in collective belonging that simultaneously concerned issues of alienation. Within its contemporary field of the humanities and social sciences, the research in contemporary policy research draws, in part, on science studies and post-foundational and Foucauldian studies.

Entering the twentieth century, the changes in the public education power have presented huge challenges to education policies. The pursuit of private benefits of educational activities under the market mechanism may cause damage to the public welfare of education. Besides, achieving education equity has been compounded by the intervention from the market and society to education.

Policy statements, research reports, and the classification of tables and graphs, as a result of the multicultural development under particular historical conditions, are viewed as documents of a culture. The objects of school learning and children’s development are given a historical substance; viewed as cultural artifacts to analyze the state of things in their multiplicities to understand the groups of rules that define what can be said, preserved, reactivated, and institutionalized (Foucault 1991).

Central in this style of reasoning is the historical and the philosophical that circulates in contemporary research practices. It entails locating the multiplicities of differentiated spatiotemporal relations that form in school reforms, “seeking to reconcile genesis and structures to a number of issues embodied in the sciences that pretend to secure the future” (see, Deleuze [1968] 1994: 20). The historicizing in research is to direct attention to thinking about the grids, or multiple and different historical lines that come together at a particular time and space to produce the objects of change. In thinking this way, the problem of research becomes considering the intersections of various technologies of measurement, theories, and cultural, institutional, and social practices that travel in uneven historical lines but connect at a particular time and space (Popkewitz 2020). Therefore, under the educational values of equity, efficiency, and freedom, educational policies should follow the fundamental principles of the new public administration; take particular historical and cultural backgrounds into account, entail equity as a fundamental policy value goal, balance efficiency and quality, strengthen the respect for and the recognition of ethnical culture, and constantly quest for meaningful and valuable educational policy research.

The Structure and Main Content of the Handbook

The thought of collecting the works of internationally renowned scholars to compile a handbook on educational policy research popped up in our minds on a sunny day in the spring of 2014. At that moment, our intention was to include classic literature and high-cited published papers in the field of educational policy research in the Handbook. Later, in consultation and discussion with some of the members in the Handbook's invited international advisory committee and Springer, the editorial theme was revised, and now it has come out as a collection of the original works that focus on the study of contemporary education issues. Here, we are not going to provide readers with classic knowledge of educational policies, but to present policy analysis and reflection on contemporary education issues. What we want readers to see is that in a world full of uncertainty, education is an important social subsystem that influences the development of individuals and the existence of a society, and is taken by all countries in the world as a driving force for social progress and sustainable development of the country. On the other hand, social, political, economic, technological, and cultural factors are all manifesting unprecedented diversity and uncertainty, impacting people's learning, work, and life in a comprehensive way. The past, present, and future education reforms, no matter in which development stage they are, especially macro-education reforms at the national and regional levels have their roots in educational policy analysis to meet the need to resolve major educational problems at that particular moment. Hence, "education policy and reform in a changing world" embraces a holistic and magnificent rich picture of the multiple interactions between contemporary education and social, political, cultural, technical elements of a society, and the multiple interactions among the elements within the education system.

The science of educational policy studies is not a unitary entity. Rather, it entails different social and cultural principles that change over time. The *Handbook of Education Policy Studies* brings together the latest research with different reasoning styles from a wide range of internationally recognized scholars into two volumes of a book and therefore have the capacity to analyze educational policy research from international, historical, and interdisciplinary perspectives. By effectively and fruitfully breaking through the boundaries between countries and disciplines, it presents new theories, technologies, and methods of contemporary education policy and illustrates the educational policies and educational reform practices of different countries in response to the challenges of constant changes.

The two volumes of the *Handbook of Educational Policy Studies* bring into view two general and different strands of research to present the diversity of policy research and different ways of ordering reflection and designing ways of studying education to enunciate particular solutions and plans for action in the social and historical arenas in which education operates within nations and increasingly transnational. Our effort in the Handbook is to bring together different styles of reasoning to consider the international diversity of research related to policy; how different approaches render judgments about what are the important problems, how to make the fields of

existence in schools manageable for understanding, and how to draw conclusions and propose rectification that open up the possibilities for educational change.

Based on the analysis of the nature of education policy and education reform, *Values, Governance, Globalization, and Methodology*, the first volume reflects on the values of education reform and the concept of education quality, focusing on the changes in the macro-education policies at the national level. From the historical and comparative perspectives, it examines the dialectical relationship between education policy and education reform in a variety of countries, analyzes the theoretical and practical issues in the process of moving from regulation to multiple governance in contemporary education administration, and explores the impact of globalization on national education reform and the interdependence between individual countries as well. In addition, this volume also collects the studies on the research methodology of education policy from multiple perspectives. This volume comprehensively reveals the complex relationship between contemporary education reform and social change and explores the new complexity of the relationship between contemporary social, political, economic systems, and education policy research and practice, which provides the readers with a holistic picture of the macro trend of the contemporary education reform.

The second volume, *School/University, Curriculum, and Assessment*, focuses on the changes in education policies at the micro level, that is, the policies and changes in schools and classrooms. The studies on changes in schools present the differences in the policies and challenges of K-12 schools and universities of different countries and regions in response to the contradictions and conflicts between tradition and modernization, as well as the changes of the roles of different stakeholders, especially those of the teachers. In terms of curriculum and instruction, a great number of countries have introduced desirable experiments and practices in educational changes around two themes: “what to teach” and “how to teach.” While enhancing the extensive application and improvement of educational assessment and testing technologies, international education assessments represented by PISA also have exerted far-reaching impacts on education policies and education reforms in different countries. This volume comprehensively reveals the complicated interactions among school organizations, teachers, curriculum, teaching and learning, evaluation, and other elements within the education system, which presents the latest ecological scenario of the reforms in contemporary schools, curriculum, and instruction.

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¹Whitty Geoff, and Jake Anders (2013), Narrowing the Socio-economic Achievement Gap: The Recent Experience of England. In Guorui Fan (Ed.), *Educational Policy Observatory* (Vol. 4), Shanghai: East China Normal University Press, pp. 3–41.

Sages Hall, a classic building at ECNU, as the cover picture of this Handbook. The Ionic order building was built in 1930, which integrates both Chinese and Western cultural elements, and thus perfectly illustrates the vision of the Handbook to connect Chinese and Western education.

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Guorui Fan
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Contents

Part I School and Teacher

- 1 Path and the Standards of Rural School Consolidation in China Since 2000. 3**
Zhihui Wu
- 2 Educational Technology as School Reform: Using Actor-Network Theory to Understand Recent Latin American Educational Policies . . . 35**
Inés Dussel
- 3 Education Governance and School Autonomy: The Progressive Reform of K–12 School in China. 55**
Guorui Fan and Lin Zhang
- 4 Teacher Education Policies in China Since the Mid-1990s 95**
Congman Rao

Part II Higher Education Reform

- 5 The Idea of the University and Its Specters: On the Ghostly Return of the “Excluded” 115**
Daniel S. Friedrich
- 6 The Modernization of Higher Education 129**
Yifan Sui
- 7 The Impact of the Expansion of Higher Education on the Rate of Return to Higher Education in Taiwan 137**
Cheng-Ta Wu and Chia-Wei Tang

Part III Curriculum and Instruction Reform

- 8 Japanese Educational Policy and the Curriculum of Holistic Development 151**
Ryoko Tsuneyoshi

9	Whom Is the National Curriculum for? Politics in the National Curriculum System of South Korea	165
	Kyunghee So	
10	History Education in Japan: An Account of Domestic Policy Controversies Over the Past War	185
	Masako Shibata	
11	Education as Design for Learning: A Model for Integrating Education Inquiry Across Research Traditions	201
	Richard Halverson and Erica Rosenfeld Halverson	
12	School-Based Teaching Research in China	223
	Wensen Yu	
Part IV PISA and Education Reform		
13	The Implications of Understanding That PISA Is Simply Another Standardized Achievement Test	239
	David C. Berliner	
14	Revisiting the Fabrications of PISA	259
	Luís Miguel Carvalho	
15	Subject in Education for the Twenty-First Century: A Discursive Analysis of the Impacts of PISA in Brazil	275
	Márcia Aparecida Amador Mascia	
Part V Assessment and Evaluation		
16	International Assessments of Student Performance: The Paradoxes of Benchmarks and Empirical Evidence for National Policy	295
	Thomas S. Popkewitz	
17	A Comparativistic Narrative of Expertise: International Large-Scale Assessments as the Encyclopaedia of Educational Knowledge	311
	Daniel Pettersson	
18	Dangers of “Making Diversity Visible”: Historicizing Metrics of Science Achievement in U.S. Education Policy	331
	Kathryn L. Kirchgasser	
19	Imagining School as Standards-Driven and Students as Career-Ready! A Comparative Genealogy of US Federal and European Transnational Turns in Education Policy	351
	John Benedicto Krejsler	

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Part I
School and Teacher

Chapter 1

Path and the Standards of Rural School Consolidation in China Since 2000



Zhihui Wu

The one-child policy implemented by governments in China since 1971 and the large-scale migration of people from the countryside to cities since the 1980s have led to a natural reduction in number and space flow of school-aged children in the countryside. This has compelled education departments to promote a larger scale of rural school closure and consolidation. Closure and consolidation of rural primary and middle schools¹ in China exhibit the following macro features.² First, the scale of rural school closure and consolidation was the largest in the first 10 years of the twenty-first century (or 2000–2010). From 1976 to 2016, approximately 946,100 compulsory schools including primary and middle schools disappeared. A total of 386,500 schools among them were shut down between 2000 and 2016, accounting for 41% of the total number of schools that disappeared in the past 40 years. On average, approximately 66 schools disappeared every day. Moreover, from 2000 to 2010, the decrease in the number of schools was the highest (about 304,100 schools), and approximately 83 schools were closed every day on average. Second, school consolidation has primarily occurred in rural areas since 2000. A total of 357,000 compulsory schools that disappeared after 2000 were rural schools, accounting for 92.36% of the total number (about 386,500 schools). Approximately 61 compulsory schools in the countryside were shut down every day. Third, rural primary schools were the main target of school consolidation. A total of 333,900 primary schools in

¹In China, the school system of 9-year compulsory education is of two types. In most provinces, the primary school comprises Grades 1–6, and middle school comprises Grades 7–9. In some provinces, the primary school comprises Grades 1–5, and the middle school comprises Grades 6–9.

²The following data are the results of the data presented in *Educational Statistics Yearbook of China (2000–2016)* (中国教育统计年鉴) and *Statistics Yearbook of China* (中国统计年鉴).

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rural areas were closed, accounting for 93.53% of the total decreasing number of rural schools (about 357,000) and 86.39% of the total decreasing number of schools in urban and rural areas. Why did rural schools disappear rapidly after 2000? What is the development trend? What are the standards for rural school closure and consolidation in China? These are the research questions to be addressed in the chapter.

1.1 Background

1.1.1 *The Educational Management System Reform Provides Rural School Consolidation with Institutional Space*

In order to alleviate the financial burden of farmers, governments began to explore and implement tax reforms in rural areas, such as abolishing the educational tax³ and strictly prohibiting schools or other departments from levying extra fees from farmers after 2000. Paradoxically the educational tax in the countryside is an important source of funds for compulsory rural education, accounting for approximately 30% of the total rural education expenditure. In order to alleviate the financial pressure of governments at the township or town level in a system where schools are operated and managed by governments at different levels,⁴ the State Council made a major change to the management system of rural compulsory education in 2001. The main change was that the government of the county had to take the main responsibility for compulsory education instead of the government of the Xiang (or township). This change has shifted the cost of rural compulsory education from farmers to governments and from the township or town government to the county government. Since the implementation of the new management system, the county government is motivated to improve the financial situation and the efficiency of the resources utilization through school consolidation. After the reform of the tax-sharing system,⁵ the main fiscal expenditure of many county-level governments is

³Rural areas have two types of educational tax. The first one is called “raising funds for rural education” (农村教育集资). It means that governments of towns or *Xiangs* (townships) can raise funds for the construction of schools or repairing of school buildings from some companies, social groups, or individuals. The second one is called “extra fees of rural education” (农村教育费附加). In the last century, governments of Xiang should take the whole responsibility of compulsory education, such as financial responsibility. Some governments in developing areas can levy “extra educational fees” to improve the budget constraint to develop the rural education.

⁴The system by which schools are run and managed by governments at different levels was the main management institution of education before 2001. It meant that local governments had to take complete responsibility for local schools, and the government at a higher level may not transfer extra money to local government. For example, before 2001, the township or town government had to cover the running cost of all rural schools in their district.

⁵The reform of the tax-sharing system in China was introduced in 1993. According to *the Decisions on the Implementation of the Fiscal Management System of the Tax-Sharing System* (关于实行分税制财政管理体制的决定) issued by the State Council in 1993, the range of fiscal expenditure

the salary of public employees, and some governments even had to take a loan to cover the running cost.⁶ Some county governments may find it difficult to afford a large amount of compulsory education expenditure, so they are compelled to close or consolidate some rural schools out of the fiscal pressure.

1.1.2 The Shift of Universal Education to High-Quality Education Provides Rural School Consolidation with Policy Background

Offering universal compulsory education was the most important target of educational development in China before 2000. According to the *Compulsory Education Law of the People's Republic of China* (中华人民共和国义务教育法) in 1986, China implemented 9-year compulsory education, and the local governments at all levels were required to set up an adequate number of primary schools and secondary schools to help children travel a short distance to school. Moreover, the *Outline of China's Education Reform and Development* (中国教育改革和发展纲要) issued by the State Council in 1993 also revealed that at the stage of generalizing education, the main aim of governments was to provide adequate educational opportunities for school-aged children and ensure that they could go to school conveniently. Hence, the central governments required the whole country to maintain a certain number of schools and asked for a reasonable distribution of schools. More specifically, from 1986 to 2000, the number of primary schools in China ranged from 500,000 to 800,000, and the number of small-scale schools⁷ was about 170,000.

The Decision on the Reform and Development of Elementary Education (关于基础教育改革和发展的决定) issued by the State Council in 2001 affirmed that rural school closure and consolidation should be promoted based on local conditions. Local governments were responsible for planning and building schools within

would be divided based on the different responsibilities of the local and central governments. The tax would be classified into three types, including national tax, local tax, and sharing tax.

⁶The provincial government of Anhui conducted a survey of the fiscal situation in 2001 and 2002. The survey showed that in 2001, the government revenues and fiscal expenditure of seven counties (including Shouxian, Jinzhai, Fengyang, Guzhen Lujiang, Nanling, and Ningguo) were 163 million and 295 million, 98 million and 224 million, 106 million and 204 million, 118 million and 220 million, 191 million and 312 million, 138 million and 186 million, and 288 million and 240 million, respectively. In 2002, they were 154 million and 304 million, 106 million and 238 million, 110 million and 210 million, 97 million and 207 million, 266 million and 324 million, 159 million and 207 million, and 332 million and 291 million, respectively. Hence, the fiscal expenditure was higher than the government receipts in six counties excepting Ningguo (Hu and Zhang 2007, p. 7–8).

⁷According to *The Opinions on Comprehensive Strengthening of the Construction of Small-Scale Schools in the Countryside and Boarding Schools in the Town or Township* (关于全面加强乡村小规模学校和乡镇寄宿制学校建设的指导意见) issued by the State Council, small-scale schools in the countryside refer to those schools that have fewer than 100 students (2018).

appropriate distance to students' homes. Rural primary schools and small-scale schools should be appropriately consolidated by the criteria of travelling convenience. In some areas where the traffic conditions were poor, it was necessary for governments to maintain a reasonable number of small-scale schools to prevent students from dropping out of schools due to the long and inconvenient travel. Moreover, governments can build boarding schools to meet students' needs. In such policy contexts, layout and scale of rural schools have become one of the key concerns in rural educational reform.

1.1.3 Urbanization Offers Strategic Expectations for Rural School Consolidation

In 1996, the urbanization rate of China reached about 30% and rose to 57.35% in 2016. From 2000 to 2016, the urban population increased by 334 million and reached 793 million. After the *Third Plenary Session of the 15th Central Committee of Communist Party of China* (中国共产党第十五届三中全会) in 1998, many townships and towns were merged together. By the end of 2016, the number of townships reduced to 10,872, and the total number of towns and townships decreased from 97,521 in 1984 to 31,755 in 2016. In other words, approximately 66% of towns and townships disappeared.

As a result, the traditional layout of rural schools, i.e., every village with a primary school, every township with a middle school, and every town or county with a high school, faced new challenges. Based on the estimation of the future decreasing population in the rural areas, a new school layout emerged in which primary schools are mainly established in towns or townships and middle schools are mainly established in towns or county towns. This new structure will be the strategic expectation that adapts to the development trend of urbanization in the next 20 years.

1.1.4 The Decrease in the Number of Students in Rural Schools as an Objective Basis for Rural School Consolidation

Since 2000, the number of newborn babies in rural areas has decreased by 3,704,400 (about 32.66% of the figure in 2000), from 11,341,400 in 2000 to 7,637,000 in 2016. Because of the wide distribution of the rural population's residence, with the rapid decline in the number of rural students, the traditional layout of rural education (every village having a primary school) has been challenged. Many schools have less than 50 students. Moreover, some local governments have raised funds to construct a large number of schools. Owing to excessive construction, many rural schools have two students taught by ten teachers now, and some rural schools do not

even have students. There are a great number of small-scale schools (also called Sparrow Schools or Empty-Nest Schools) in rural areas. The decline in the total number of rural students has directly led to the large-scale closure and consolidation of rural schools.

1.2 Path of Rural School Consolidation After 2000

After analyzing the complete process of rural school consolidation, this study identifies the path as following.

1.2.1 *Faster Decline Rate of the Number of Rural Schools*

According to national statistics, the number of primary schools in the counties reduced from 521,500 in 2000 to 151,000 in 2016, decreasing by 370,500 (approximately 71.05% of the figure in 2000). Among them, the number of primary schools in towns (including towns and county towns) declined from 81,200 in 2000 to 44,600 in 2016, decreasing by 36,600 (approximately 45.07% of the figure in 2000 and 9.88% of the total decreasing number of primary schools in counties). On the other hand, the number of rural primary schools declined from 440,300 in 2000 to 106,400 in 2016, decreasing by 333,900 (approximately 75.83% of the figure in 2000 and 90.12% of the total decreasing number of primary schools in counties).

Compared to the number of primary schools, the number of small-scale schools presents a different development trend (first decreasing and then increasing). The number of small-scale schools in the counties reduced from 172,600 in 2000 to 66,600 in 2011. This considerable decline in the number of rural small-scale schools has a huge negative effect on rural education. For instance, several countryside students have to travel a longer distance to school, which may cause more traffic accidents and result in a heavy economic burden on the students' family. Moreover, the decrease in the number of rural small-scale schools may also result in a shortage of boarding schools and the problem of large-size classes in urban schools.

In 2012, in order to solve those problems, the General Office of the State Council issued the *Opinions on Regulating the Layout Adjustment to Compulsory Education Schools in Rural Areas* (关于规范农村义务教育学校布局调整的意见). It states that rural primary schools and small-scale schools should be run effectively by local governments. Since then, the number of small-scale schools increased from 66,600 in 2011 to 96,900 in 2016. However, from the perspective of the overall development trend, in the past 16 years (2000–2016), the total number of small-scale schools has decreased by 75,700 (approximately 43.86% of the number in 2000). Among them, the number of small-scale schools in towns (including towns and county towns) decreased from 15,100 in 2000 to 1300 in 2010 and increased to 10,100 in 2016. In other words, from 2000 to 2016, the figure decreased by 5000

Table 1.1 The number of primary schools and small-scale schools in counties between 2000 and 2016 (Unit: 10,000 schools)

	Primary schools in counties			Small-scale schools in counties		
	Town	Village	Total	Town	Village	Total
2000	8.12	44.03	52.15	1.51	15.75	17.26
2001	4.88	41.62	46.5	0.32	11.04	11.36
2002	4.69	38.40	43.09	0.34	10.83	11.16
2003	4.00	36.04	40.04	0.32	10.17	10.49
2004	3.34	33.73	37.07	0.26	9.81	10.07
2005	2.91	31.68	34.59	0.12	9.30	9.42
2006	2.96	29.51	32.47	0.15	8.76	8.91
2007	3.09	27.16	30.25	0.16	8.31	8.47
2008	3.05	25.30	28.35	0.13	7.75	7.89
2009	2.97	23.42	26.38	0.13	7.10	7.23
2010	3.01	21.09	24.10	0.13	6.54	6.67
2011	4.60	16.90	21.50	0.56	6.10	6.66
2012	4.74	15.50	20.24	0.64	6.25	6.90
2013	4.72	14.03	18.75	0.81	7.36	8.16
2014	4.64	12.87	17.51	0.90	7.86	8.76
2015	4.61	11.84	16.45	0.97	8.18	9.15
2016	4.46	10.64	15.10	1.01	8.68	9.69

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town

(approximately 33.11% of the figure in 2000 and 6.61% of the total decline number of small-scale primary schools in the county). Moreover, the number of rural small-scale primary schools declined from 157,500 in 2000 to 61,000 in 2011 and then rose to 86,800 in 2016, decreasing by 70,700 (approximately 44.89% of the figure in 2000 and 93.39% of the total decreasing number of primary schools in the county). Overall, the total number of primary schools and small-scale schools in counties nationwide dropped from 694,100 in 2000 to 247,900 in 2016, decreasing by 446,200 (approximately 64.28% of the figure in 2000) (see Table 1.1).

The decline rate of the number of students enrolled in schools was different from that of schools. The number of students enrolled in primary schools in counties nationwide dropped from 112 million in 2000 to 66 million in 2016, decreasing by 45,507,700 (approximately 40.64% of the figure in 2000). The decline rate of the number of primary schools and small-scale schools in the counties (64.28%) was 1.58 times the decline rate of the number of students enrolled in primary schools in counties (40.64%), and the difference between those was 23.64% (see Table 1.2).

As for the variation in the number of middle schools,⁸ the number of middle schools in counties declined from 54,000 in 2000 to 40,200 in 2016, decreasing by

⁸There are many types of middle schools in China, such as the 9-year school (including the primary school and middle school) and secondary school (including the middle school and senior

Table 1.2 The number of students enrolled in primary schools in counties (Unit: 10,000 people)

Year	Town	Village	Total
2000	2692.89	8503.71	11196.60
2001	2257.79	8604.80	10862.59
2002	2293.77	8141.68	10435.45
2003	2192.90	7689.15	9882.05
2004	2036.23	7378.60	9414.83
2005	2185.86	6947.83	9133.69
2006	2431.82	6676.14	9107.96
2007	2552.19	6250.73	8802.92
2008	2602.25	5924.88	8527.13
2009	2637.15	5655.54	8292.70
2010	2770.02	5350.22	8120.24
2011	3254.21	4065.20	7319.41
2012	3354.98	3652.49	7007.47
2013	3370.54	3217.04	6587.58
2014	3457.96	3049.86	6507.82
2015	3655.40	2965.90	6621.30
2016	3754.10	2891.73	6645.83

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town

13,797 (approximately 25.55% of the figure in 2000). Although the decrease in the number of middle schools in counties was not very large, the variation is significant by considering the change in the types of schools, such as middle schools in towns (including towns and county towns) and in villages. That is, the number of middle schools in villages declined, and those in towns rose (see Table 1.3) from 14,700 in 2000 to 24,000 in 2016. In contrast, the number of middle schools in villages declined from 39,300 in 2000 to 16,200 in 2016, decreasing by 23,142 (approximately 58.87% of the figure in 2000).

Compared to the change in the number of students enrolled in middle schools in counties, the variation in the number of middle schools is more considerable.⁹ The

middle school). Therefore, when we calculate the total number of middle schools, we count both 9-year schools and secondary schools because those include middle schools. Moreover, because of the change of the statistic unit in *Educational Statistics Yearbook of China* (中国教育统计年鉴), the data of middle schools between 2011 and 2016 included general middle schools and vocational middle schools. However, we do not consider the data of vocational middle schools, because they range from 54 to 26, which have litter effect on the whole data.

⁹If we regard the total decreasing number as the measurement standard, the difference between the decline in the number of middle schools and the decline in the number of students enrolled in middle schools is -19.12% ($25.55\% - 44.67\%$). If we consider that schools are not mobile unlike students, the difference between the above two is 81.84% ($122.54\% - 40.7\%$).

Table 1.3 The variation in the number of middle schools in counties from 2000 to 2016 (Unit: 10,000 schools)

Year	Town	Village	Total
2000	1.47	3.93	5.40
2001	1.80	3.87	5.67
2002	1.84	3.74	5.59
2003	1.75	3.73	5.47
2004	1.62	3.81	5.43
2005	1.73	3.64	5.37
2006	1.81	3.53	5.34
2007	1.87	3.29	5.15
2008	1.87	3.15	5.01
2009	1.87	3.02	4.89
2010	1.89	2.87	4.76
2011	2.24	2.10	4.34
2012	2.29	1.94	4.23
2013	2.32	1.85	4.17
2014	2.34	1.77	4.11
2015	2.39	1.70	4.09
2016	2.40	1.62	4.02

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town

number of students enrolled in middle schools in the county nationwide declined from 51,330,100 in 2000 to 28,399,500 in 2016, decreasing by 22,930,600 (about 44.67% of the figure in 2000). The number of students enrolled in middle schools in towns rose from 17,045,400 in 2000 to 21,729,100 in 2016, increasing by 4,683,700 (approximately 27.48% of the figure in 2000). With regard to the villages, the number of students enrolled in rural middle schools decreased by 27,614,300 (about 80.54% of the figure in 2000), from 34,284,700 in 2000 to 6,670,400 in 2016 (see Table 1.4). In fact, the added students enrolled in rural middle schools transferred to middle schools in towns.

1.2.2 The Synchronous Expansion of the Scale of Schools and Classes and the Problem of Large-Size Schools and Classes in Towns

The average size of primary schools (including small-scale schools) in the county rose from 161.32 in 2000 to 268.10 in 2016, increasing by 106.78 (approximately 66.19% in 2000). In fact, the average size of primary schools in towns grew more remarkably than that of village primary schools (see Fig. 1.1). More specifically, the

Table 1.4 The number of students enrolled in middle schools between 2000 and 2016 (Unit: 10,000 people)

Year	Town	Village	Total
2000	1704.54	3428.47	5133.01
2001	2245.62	3121.30	5366.92
2002	2377.20	3108.83	5486.03
2003	2314.08	3160.40	5474.48
2004	2187.05	3168.27	5355.31
2005	2351.33	2784.66	5135.99
2006	2423.62	2563.66	4987.28
2007	2430.00	2243.32	4673.31
2008	2442.85	2064.24	4507.09
2009	2440.08	1934.51	4374.59
2010	2432.42	1784.47	4216.89
2011	2467.42	1162.98	3630.40
2012	2347.94	974.10	3322.04
2013	2195.57	814.53	3010.10
2014	2167.48	748.46	2915.94
2015	2168.44	702.50	2870.94
2016	2172.91	667.04	2839.95

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town

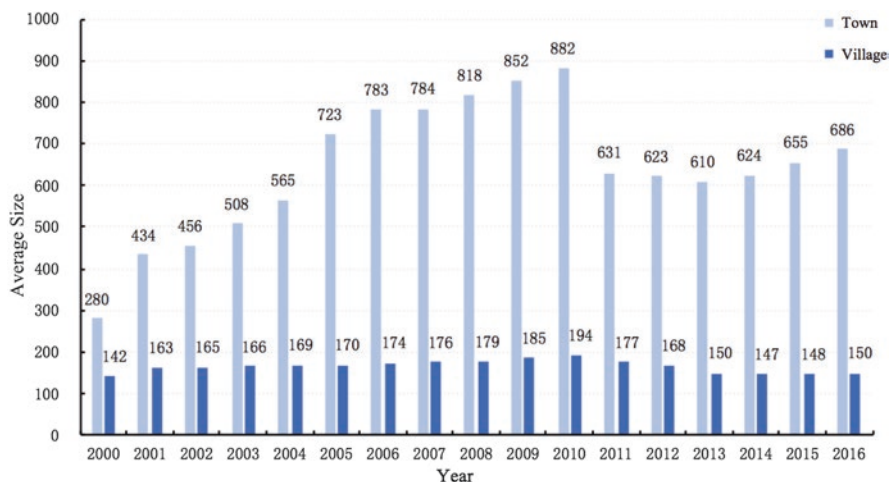


Fig. 1.1 The variation in the average size of primary schools in towns (including towns and county towns) and villages between 2000 and 2016 (Unit: people)

average size of primary schools in towns rose dramatically from 279.72 in 2000 to 882.03 in 2010 and declined moderately to 686.47 in 2016, increasing by 406.75 in the past 16 years. In contrast, the average size of village primary schools (including small-scale schools) rose from 142.25 in 2000 to 149.67 in 2016, increasing slightly by 7.42 in the past 16 years (see Table 1.5). Although the absolute value of the average size of primary schools in towns and villages cannot exceed that of the cities, the variation rate of the average size of primary schools in towns (140.01%) and villages (145.41%) is higher than that of the cities (5.22%), and the figure in towns is the highest. After analyzing the development trend of the primary school consolidation in the county, we can find that concentrating on the benefits of size (or scale) is the basic value in the whole process.

With regard to the middle schools, the relevant figure increased first and then decreased, but it exhibited a decreasing trend in the whole process. The average size of middle schools in counties was 950.72 in 2000, rising to the highest (1000.42) in 2003 and then dropping to 706.56 in 2016. The figure declined by 244.16 (approximately 25.68% of the figure in 2000) in the past 16 years (see Fig. 1.2). From

Table 1.5 The variation in the average size of primary schools in towns, villages, and cities between 2000 and 2016 (Unit: people)

Year	Total	City	Town	Village	County
2000	177.85	483.06	279.72	142.25	161.32
2001	207.11	621.65	434.18	163.40	187.73
2002	213.55	645.17	455.76	165.40	192.33
2003	219.93	687.88	507.55	166.42	195.59
2004	226.88	756.28	564.66	169.46	199.69
2005	235.81	832.39	722.84	169.59	207.62
2006	248.57	929.87	783.47	174.47	220.17
2007	260.81	988.93	784.25	176.22	227.32
2008	271.92	1027.03	817.98	179.24	235.31
2009	285.58	1071.61	851.88	185.36	246.76
2010	306.48	1096.34	882.03	193.61	263.86
2011	321.58	963.86	630.58	176.73	259.90
2012	324.95	997.27	622.78	167.89	258.18
2013	315.92	1019.47	610.45	150.41	244.80
2014	325.51	1063.47	624.18	147.15	247.76
2015	341.80	1113.48	655.30	148.15	258.66
2016	359.08	1159.40	686.47	149.67	268.10
The increasing average size of primary schools from 2000 to 2016	181.23	676.34	406.75	7.42	106.78
The growth rate from 2000 to 2016	101.90%	140.01%	145.41%	5.22%	66.19%

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town. County includes the town (including the town and the county town) and the village

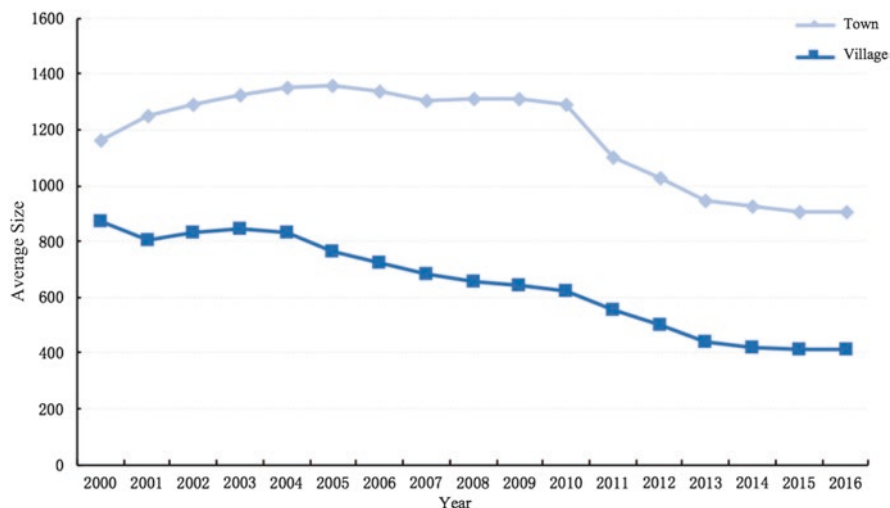


Fig. 1.2 The variation in the average size of middle schools in towns and villages

Fig. 1.2, we can find that the average size of middle schools in villages declined more significantly than the figure in towns. More specifically, the value for towns rose from 1161.29 in 2000 to 1357.34 in 2005 and then dropped to 904.51 in 2016, decreasing by 256.78 (approximately 22.11% of the figure in 2000). By contrast, the average size of middle schools in villages declined from 872.09 in 2000 to 412.49 in 2016, decreasing by 459.60 (about 52.79% of the figure in 2000) (see Table 1.6). Compared to the cities' situation, the average size of middle schools in towns and villages was lower than for the figure of cities in 2016, but between 2001 and 2006, the figure showed an adverse trend. For example, in 2005, the average size of middle schools in towns was highest and exceeded that of the figure in cities. The difference between them was nearly 87.49. If we consider the huge difference between the sizes of middle schools in towns, some middle schools in towns may actually have a huge size, and there may be some “superlarge middle schools” to which governments should pay attention.

The average class size in primary schools (including small-scale schools) in counties rose from 32.66 in 2000 to 36.34 in 2010 and fell to 34.71 in 2016, only increasing by 2.05 in the past 16 years. However, if we separate the figure for primary schools in towns from the figure in villages, we can find that the figure in villages declined slightly from around 31 (between 2000 and 2011) to 27.60 in 2016. In contrast, the figure in towns underwent a rapid expansion and then a narrow trend. For example, the figure in towns rose from 39.44 in 2000 to 48.88 in 2010, increasing by 9.44 (approximately 23.94% of the figure in 2000) in the 10 years and then dropping to 43.29 in 2016. It is worth mentioning that the figure in towns exceeded the national standards of class size (45 students in every class on average) from 2004 to 2011 and that it was also higher than the figure in cities from 2005 to 2010 (see Table 1.7). If we define “56–65 students in every class on aver-

Table 1.6 The variation in the average size of middle schools in cities, towns, and villages between 2000 and 2016 (Unit: people)

Year	Total	City	Town	Village	County
2000	983.61	1187.46	1161.29	872.09	950.72
2001	981.47	1207.60	1248.47	806.00	946.33
2002	1021.34	1270.20	1289.43	830.73	982.12
2003	1038.82	1272.60	1324.53	848.41	1000.42
2004	1026.80	1280.08	1348.53	831.67	986.01
2005	997.30	1269.85	1357.34	764.91	955.92
2006	980.57	1321.42	1340.72	726.60	934.65
2007	967.86	1379.49	1302.95	682.59	907.18
2008	966.04	1407.55	1309.00	656.19	899.26
2009	967.41	1443.64	1308.14	641.03	895.86
2010	962.35	1454.90	1288.77	622.42	886.94
2011	936.27	1335.19	1103.40	553.88	837.29
2012	895.04	1318.17	1026.38	501.91	785.65
2013	840.87	1285.53	946.57	440.65	722.19
2014	833.22	1278.57	925.12	422.69	708.85
2015	822.81	1253.16	906.73	413.45	701.84
2016	830.69	1249.09	904.51	412.49	706.56
The increasing average size of middle schools from 2000 to 2016	-152.92	61.63	-256.78	-459.60	-244.16
The growth rate from 2000 to 2016	-15.55%	5.19%	-22.11%	-52.70%	-25.68%

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town. County includes the town (including the town and the county town) and the village

age” as “large class size”(大班额) and “over 66 students in every class on average” as “giant class size”(超大班额), we can calculate that the proportion of “large class size” in primary schools in towns increased from 22.16% in 2001¹⁰ to 32.39% in 2006 and then dropped to 15.96% in 2016 due to the improvement on relevant issues. Moreover, the proportion of “giant class size” in primary schools in towns rose from 9.50% in 2001 to 14.66% in 2006 and then declined to 5.57% in 2016, decreasing by 3.93% from 2001 to 2016 (see Table 1.8). It is quite interesting that the proportion of large class size or giant class size declined from 2001 to 2016, which also indicated outcomes of some policies aiming at controlling class size.

¹⁰The statistic index of class size of primary schools in the *Educational Statistics Yearbook of China (2000)* is different from it in the *Educational Statistics Yearbook of China (2001–2016)*. In terms of class size, the data of “over 50 students in every class on average” is available and not the data of “56–65 students in every class on average” and the data of “over 66 students in every class on average” in the *Educational Statistics Yearbook of China (2000)*. Thus, in this part, the author uses the data of 2001, instead of the data of 2000.

Table 1.7 The variation in the class size of primary schools in cities, towns, and villages between 2000 and 2016 (Unit: people)

Year	Total	City	Town	Village	County
2000	33.93	44.60	39.44	30.97	32.66
2001	33.84	42.14	41.54	31.13	32.84
2002	34.48	43.63	43.15	31.31	33.32
2003	34.75	44.68	43.74	31.28	33.39
2004	35.11	45.69	45.10	31.39	33.60
2005	35.48	46.29	47.29	31.21	33.97
2006	36.29	46.91	48.64	31.64	34.90
2007	36.78	47.71	48.68	31.59	35.17
2008	37.12	47.74	48.81	31.64	35.45
2009	37.39	47.54	48.66	31.82	35.75
2010	37.99	47.70	48.88	32.08	36.34
2011	38.49	47.09	45.63	30.98	36.14
2012	37.78	46.45	44.61	29.56	35.25
2013	37.46	46.53	44.09	28.25	34.61
2014	37.42	46.23	43.65	27.81	34.45
2015	37.72	46.22	43.71	27.74	34.75
2016	37.71	45.77	43.29	27.60	34.71
The increasing average size of primary schools from 2000 to 2016	3.78	1.17	3.85	-3.37	2.05
The growth rate from 2000 to 2016	11.14%	2.62%	9.76%	-10.88%	6.28%

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press

Note: Town includes the town and the county town. County includes the town (including the town and the county town) and the village

The problem of large class size in middle schools is worse than that of primary schools. Between 2001 and 2008, the proportion of large class size in middle schools in towns was over 50%, and the figure for giant class size was over 23% as well. It is gratifying that since 2010, the proportion of large and giant class size in middle schools in counties has decreased significantly. By 2016, the proportion of large class size in middle schools in towns and villages had dropped to 20.94% and 12.97%, respectively, decreasing by 23.55% and 32.63%, respectively, compared to the figure in 2000. However, the figure in towns was always higher than the figure in cities. The figure in villages had been lower than the figure in cities since 2010. In fact, the average class size of middle schools in counties was higher than the national standard (50 students in every class on average) from 2001 to 2012. Thus, the large class size of middle schools in counties was a serious problem for the process of rural school consolidation, particularly in towns (Tables 1.9 and 1.10).

Table 1.8 The variation in the proportion of “large class size” and “giant class size” in primary schools in cities, towns, and villages between 2001 and 2016 (%)

Year	The proportion of “large class size” in primary schools			The proportion of “giant class size” in primary schools		
	City	Town	Village	City	Town	Village
2001	24.60	22.16	6.30	9.67	9.50	1.85
2002	23.08	22.35	6.52	8.70	9.15	1.97
2003	23.49	23.39	6.68	8.37	9.51	2.04
2004	25.45	26.29	6.98	8.90	11.25	2.14
2005	26.22	29.73	7.11	9.18	12.89	2.22
2006	27.00	32.39	7.51	9.49	14.66	2.39
2007	27.82	31.54	7.21	10.08	14.19	2.29
2008	27.11	30.85	7.02	10.01	13.84	2.21
2009	26.20	29.92	6.90	9.52	13.18	2.10
2010	25.81	29.65	6.93	9.18	12.90	2.02
2011	24.39	24.16	6.10	8.89	10.09	1.82
2012	22.47	21.81	5.21	7.81	9.02	1.47
2013	21.20	20.54	4.20	7.39	8.71	1.15
2014	19.14	18.41	3.67	6.47	7.70	0.95
2015	18.43	17.86	3.56	6.03	7.33	0.91
2016	16.50	15.96	3.03	4.94	5.57	0.69

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press. The data in the above table are the result of calculation

Note: Town includes the town and the county town

1.2.3 The Negative Impact of Educational Urbanization

With reference to the concept of urbanization, educational urbanization in this chapter is characterized as a ratio between students in urban schools (including city schools and town schools or excepting countryside schools) and total students.¹¹

The urbanization rate of primary schools in China increased from 12.71% in 1980 to 21.61% in 1990 and reached 34.65% in 2000 and 46.18% in 2010. From 2000 to 2010, the figure increased by 11.53%, but it was nevertheless slightly below the increasing rate of urbanization nationwide (approximately 13.73%). Since 2010, educational urbanization developed rapidly. By 2016, the urbanization rate of primary schools in China rose to 70.83%, increasing by 24.65% from 2010 to 2016. It

¹¹The rate of educational urbanization = (students in cities + student in towns)/total students (including students in cities, towns, and the countryside). The rate of educational urbanization can be calculated by classifying different educational stages. Generally, if the educational stages are higher, the rate of educational urbanization is higher. For example, higher education institutions or universities are mainly distributed in urban areas. To some degrees, the urbanization rate of primary schools may reflect the disappearance of rural schools.

Table 1.9 The variation in the average class size of middle schools in cities, towns, and villages between 2000 and 2016 (Unit: people)

Year	Total	City	Town	Village	County
2000	46.44	35.93	41.59	54.39	49.35
2001	55.74	50.40	57.45	56.57	56.93
2002	56.68	51.55	58.01	57.74	57.86
2003	56.81	51.31	58.25	58.01	58.11
2004	56.60	51.11	57.92	57.88	57.90
2005	55.93	50.73	58.14	56.26	57.11
2006	55.73	50.42	58.04	55.80	56.87
2007	55.17	51.28	57.69	54.52	56.12
2008	54.61	51.27	57.26	53.49	55.47
2009	53.80	51.00	56.35	52.39	54.53
2010	52.90	50.54	55.27	51.33	53.53
2011	51.83	50.27	53.70	50.04	52.47
2012	50.27	49.52	51.77	47.99	50.60
2013	48.82	48.65	50.17	45.77	48.90
2014	48.30	48.06	49.65	45.20	48.43
2015	47.72	47.17	49.20	44.65	48.00
2016	47.30	46.76	48.73	44.22	47.59
The increasing average size of class in middle schools from 2000 to 2016	0.86	10.83	7.14	-10.17	-1.76
The growth rate from 2000 to 2016	1.85%	30.14%	17.17%	-18.70%	-3.57%

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press. The data in the above table are the result of calculation

surpassed the urbanization rate that increased by 7.40% in the same period. Compared with the urbanization rate of primary schools, the urbanization rate of middle schools increased more rapidly. In 1980, the urbanization rate of middle schools was only 22.47%; it reached 33.67% in 1990, 44.41% in 2000, and 66.18% in 2010 and rose considerably to 84.59% in 2016. The urbanization rate of middle schools was growing at a rate of about 1% per year from 1980 to 2000 and about 2% per year from 2000 to 2010, increasing by 21.77% from 2000 to 2010. The figure increased dramatically by 18.41% from 2010 to 2016 (see Table 1.11). Overall, from 2000 to 2016, the urbanization rate of primary schools and middle schools increased by 36.18% and 40.18%, respectively, and it was higher than the urbanization rate of China that increased by 21.33% (from 36.22% in 2000 to 57.35% in 2016).

However, a growing number of rural schools disappeared in the process of urbanization and educational urbanization. In 1985, the ratio between the number of villages and primary schools was 1.24:1,¹² which meant that every village had a

¹²The ratio between the number of villages and primary schools = the number of administrative

Table 1.10 The variation in the proportion of large and giant class size of middle schools in cities, towns, and villages between 2000 and 2016 (%)

Year	The proportion of large class size in middle schools			The proportion of giant class size in middle schools		
	City	Town	Village	City	Town	Village
2000	35.48	44.49	45.60	12.03	16.16	17.13
2001	38.73	52.92	49.00	15.82	23.99	21.42
2002	38.59	56.14	52.05	15.30	27.44	23.61
2003	38.42	56.56	53.81	15.27	26.90	25.79
2004	37.39	55.12	52.01	13.58	26.40	24.39
2005	34.31	54.01	48.80	11.80	25.69	22.42
2006	33.59	53.29	45.84	11.39	26.22	20.47
2007	35.09	51.99	42.18	12.53	24.73	17.86
2008	34.37	50.17	38.68	12.34	23.79	16.03
2009	33.15	46.79	35.10	11.85	21.67	13.70
2010	31.02	43.13	31.65	10.96	18.92	11.81
2011	29.85	37.86	27.77	10.75	15.75	9.96
2012	27.15	31.49	22.79	9.28	12.80	8.05
2013	23.75	27.61	18.73	8.09	11.23	6.84
2014	20.93	24.37	16.11	6.54	9.73	5.50
2015	17.82	23.18	14.57	5.21	8.75	4.86
2016	15.55	20.94	12.97	4.12	7.16	3.90

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press. The data in the above table are the result of calculation

Note: Town includes the town and the county town

primary school. In 2000, the ratio rose to 1.66:1, which meant that around 1.5 villages had a primary school. In 2016, the ratio rose again to 5.26:1, which meant that around five villages could have a primary school (see Table 1.12). Many villages’ primary schools had disappeared. Many villages’ primary schools being shut down coincided with the merge reform of villages and towns. The number of administrative villages declined from 731,700 in 2000 to 559,200 in 2016, decreasing by 172,500 (approximately 23.57% of the value for 2000). The ratio¹³ between the number of villages and small-scale schools rose from 4.64:1 in 2000 to 9.67:1 in 2001 but declined to 6.44:1 in 2016, which implies that approximately seven villages had one primary school on average (see Table 1.12).

villages/the number of primary schools in administrative villages. In China, most rural dwellers live in administrative villages, and the ratio between villages and primary schools can represent the distance that students travel to school. In other words, if the ratio is higher, the distance that students travel to school is longer.

¹³The ratio between the number of villages and small-scale schools = the number of administrative villages/the number of small-scale schools in administrative villages. The ratio also can be regarded as a variable to represent the distance that students travel to school.

Table 1.11 The urbanization rate of primary schools and middle schools in China (%)

Year	Urbanization rate	Urbanization rate of primary schools	Urbanization rate of middle schools
2000	36.22	34.65	44.41
2001	37.66	31.40	51.47
2002	39.09	33.03	52.93
2003	40.53	34.22	52.25
2004	41.76	34.39	51.07
2005	42.99	36.05	54.88
2006	44.34	37.67	56.82
2007	45.89	40.83	60.79
2008	46.99	42.65	62.97
2009	48.34	43.85	64.40
2010	49.95	46.18	66.18
2011	51.27	59.05	77.05
2012	52.57	62.33	79.55
2013	53.73	65.63	81.66
2014	54.77	67.73	82.93
2015	56.10	69.40	83.71
2016	57.35	70.83	84.59
The growth rate from 2000 to 2010	13.73	11.53	21.77
The growth rate from 2010 to 2016	7.40	24.65	18.41

Data Source: National Bureau of Statistics of China (2017). *Zhongguo tongji nianjian* (2017) [Statistics Yearbook of China (2017)], Beijing: China Statistics Press. The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian* (2000–2016) [Educational Statistics Yearbook of China (2000–2016)], Beijing: People's Education Press. The data of the urbanization rate of primary schools and middle schools in the above table are the results of calculation

As a result of the educational urbanization and the disappearance of rural schools, the distance that students travel to schools has become longer, and many young students have to live in boarding schools. According to a research report (Pang 2006), among 1200 students in primary schools surveyed from 3 counties and 15 towns, nearly 40% have to travel 5 km daily to school and nearly 10% over 10 km. Another internal survey covering 8 counties and 77 towns or villages, which was conducted by the China Institute of Rural Education Development in Northeast Normal University, also revealed that students who experienced rural school consolidation have to travel an extra 4.05 km to school on average.

In order to save time and economic cost of students in the countryside where the traffic conditions are poor and the distance between the school and students' homes is far, many local governments mandate students to enroll in boarding schools. At a country level, the total number of students in primary boarding schools in the county was 6.7 million in 2006 (about 7.36% of the students in primary school), while in 2016, the figure rose to 9,425,200 (nearly 14.18% of the students in primary school).

Table 1.12 The number of primary schools, small-scale schools, and administrative villages between 2000 and 2016

Year	The number of primary schools	The number of small-scale schools	The number of administrative villages	Ratio I*	Ratio II	Ratio III
2000	440,284	157,519	731,659	1.66	4.64	1.66
2001	416,198	110,419	699,974	1.68	6.34	1.76
2002	384,004	108,250	681,277	1.77	6.29	1.91
2003	360,366	101,674	663,486	1.84	6.53	2.03
2004	337,318	98,096	644,166	1.91	6.57	2.17
2005	316,791	92,894	629,079	1.99	6.77	2.31
2006	295,052	87,590	623,669	2.11	7.12	2.48
2007	271,584	83,118	612,709	2.26	7.37	2.69
2008	253,041	77,519	604,285	2.39	7.80	2.89
2009	234,157	70,954	599,078	2.56	8.44	3.12
2010	210,894	65,447	594,658	2.82	9.09	3.47
2011	169,045	60,972	589,653	3.49	9.67	4.33
2012	155,008	62,544	588,475	3.80	9.41	4.72
2013	140,328	73,555	588,547	4.19	8.00	5.21
2014	128,703	78,565	585,451	4.55	7.45	5.68
2015	118,381	81,818	580,856	4.91	7.10	6.18
2016	106,403	86,800	559,186	5.26	6.44	6.88

Data Source: The Department of Development, and Planning, Ministry of Education (2001–2017). *Zhongguo jiaoyu tongji nianjian (2000–2016)* [Educational Statistics Yearbook of China (2000–2016)], Beijing: People’s Education Press. National Bureau of Statistics of China (2001–2017). *Zhongguo tongji nianjian (2001–2017)* [Statistics Yearbook of China (2001–2017)], Beijing: China Statistics Press. The data of the urbanization rate of primary schools and middle schools in the above table are the result of calculation

Note: “Ratio I” refers to the ratio between the number of villages and primary schools. “Ratio II” refers to the ratio between the number of villages and small-scale schools. “Ratio III” refers to the ratio between the number of villages in 2000 and primary schools between 2000 and 2016

In the counties located in the eastern, central, and western parts of China, the percentage of boarding students in primary schools was 6.93%, 15.11%, and 20.53%, respectively.¹⁴ A research by the China Institute of Rural Education Development in Northeast Normal University in 2008 on 870 boarding students in primary schools found that 55.5% of them became boarding students before Grade 3. Thus, the problem of young students in boarding primary schools is serious.

¹⁴The data were derived from the Concise Statistical Analysis of Educational Development in China (2006) and the Concise Statistical Analysis of Educational Development in China (2016), that is, the internal data of the Ministry of Education (PRC).

1.2.4 A Theoretical Framework for Rural School Consolidation

The establishment of standards for rural school consolidation is a key policy issue when adjusting rural school layout and promoting scientific, rational, and standardized rural school consolidation. However, current national standards are too ambiguous to prevent the local problematic adjustment. Those standards proposed by scholars are usually too rational and static to guide complex, dynamic rural reality. The standards proposed by the local education bureaus prefer efficiency to the farmers' benefits. The last section of this chapter would like to propose a new framework for establishing the standards by considering all the real constraints.

1.2.5 Constraints for Rural School Consolidation

1.2.5.1 Physical Constraints

Physical constraints refer to those existing geographical and traffic conditions affecting school closure and consolidation.

Geographical Conditions

This refers to the comprehensive factors affecting the geographical conditions of schools, such as topography, climate, geographical structure, and hydrology. Geographical conditions can affect people's choice of residence first and then the distribution and density of population, ultimately affecting the establishment and closure or consolidation of schools. In terms of topography, China has mountains, plateaus, hills, plains, islands, and reservoir areas. Because of the different traffic conditions of different topographies, students may experience different convenience levels with regard to accessing schools. Students living in mountains, hills, islands, or forest areas may spend more time traveling to school; therefore, schools should be distributed widely in those areas. In plateaus, plains, and reservoir areas, schools should be distributed narrowly, which would increase students' convenience in traveling to and from schools.

In terms of the climate, the northern part of China is cold in winter, and the southern part of China is hot in summer. If students walk outside in a cold or hot environment for a long time, they may suffer frost or heat stroke. Therefore, when governments promote school consolidation, they need to implement some policies to ensure that students can go to a school or boarding school that is near them. Similarly, islands or the land near the sea is affected by typhoons, so the distribution of schools needs special standards. In terms of the geological structure, many areas in China are located in earthquake zones. If the school is located in an earthquake

zone, it should be closed or relocated to other zones less prone to earthquakes. In terms of hydrology, due to the influence of seasonal precipitation, areas near rivers and lakes will suffer floods or levee breakage, so in those areas, schools should be located on high-altitude sites.

Traffic Conditions

This refers to the degree of convenience and safety of students travelling from their homes to schools. The convenience level of traffic can be affected by four factors, namely, traffic modes, road conditions, topographic features, and traffic distance. In terms of traffic modes, students can travel by walking, riding a bicycle or a motor-bike, and taking a bus or a school bus, ship, etc. Because the power base of traffic modes is different, the convenience level of traffic differs as well. In terms of road conditions, there are first-class highways (一级公路), rural highways, rural paths, and rugged mountain roads in the countryside. Different road conditions have a direct impact on students' travelling time. Generally, the more complex the topographic features, the more terrible the dynamic foundation of traffic and road conditions. If road conditions are poor, it will be less convenient for students to go to school. Taking all these factors into account, we can condense those factors as having an effect on the traffic convenience into a variable, namely, traffic time. Long traffic time means not only long traffic distance, inconvenient traffic modes, poor road conditions, and complex terrain features but also the high cost of traffic. If school closure and consolidation place a heavy burden on disadvantaged farmers, the ethical foundation of this reform will become questionable. Traffic safety is related not only to road conditions and topographic features but also to the natural environment. If there are seriously safety hazards such as mudslides, mountain collapse, and embankment bursts, or the threat of wild animals on the students' way to school and back, we need to retain some small-scale schools.

1.2.5.2 Social Constraints

Social constraints refer to the factors affecting the economic and social development in a certain area, such as cultural or traditional customs, the will of the people and government, and other factors. The school is a part of social organization, so different social, political, economic, and cultural characteristics directly restrict the distribution of schools.

Population

There are two kinds of population variables that can affect rural school consolidation. One is the static distribution of population, demographic structure, and population density. The other is the dynamic change of human fertility level and migration

intensity. In a certain geographical space, the number and structure of people can directly determine the number of students in the area. Due to low-level urbanization in the county, the population density is low, and people's residences are dispersed, which has a negative influence on running large-scale schools in rural areas. For example, the southeastern part of China has a great amount of population, and the northwestern part of China has a small amount of population. Although the land area of the southeastern part accounts for 43% of China's land area, the population accounts for 94% of China's population. In contrast, the land area of the northwestern part accounts for 57% of China's land area, but the population only accounts for 6% of China's population. Thus, governments in the northwestern region find it more difficult to promote rural school consolidation. With the decline in birth rate in China, the phenomenon of rural families with one child or no child has become more popular, and it is difficult for a growing number of rural schools to retain student enrollment. Furthermore, with the rapid progress of urbanization, an increasing number of migrant workers take their children to cities, which also makes this problem more serious. However, sometimes, migrant children may also choose to return to rural schools, because the supply of educational resources in cities is limited and they cannot study in cities permanently. In fact, their choice of schools may be affected by the change of some policies, such as the policy of rural education and even some political policies.

Ethnic, Religious, and Cultural Conditions

There are 56 ethnic minorities and 129 languages in China. Each language is a system of cultural codes of a minority. In areas with multiethnic settlements, although the language of other minorities can be understood and used in the process of economic, social, and cultural communication, every ethnic minority wishes to use only its own mother tongue to teach and learn when choosing the educational language. Moreover, in ethnic minority areas, if the number of school-aged children declines, those ethnic minority schools will not be willing to merge together although there is no traffic barrier or distance between them. In China, there are also many differences of faith between different religions or branches of the same religion. Religion matters in school consolidation.

Neighborhood Safety

The relationship between social safety and rural school consolidation can be understood using two dimensions. First, rural school consolidation may disrupt social order to some extent. Owing to rural school consolidation, the population in the countryside where a great number of schools are closed may decline considerably, and in those areas where schools are combined with other schools, the figure may rise considerably. Parents who want to take care of young children often live near schools, which may destroy the "Acquaintances Society" (or *ShuRen SheHui*, 熟人

社会)¹⁵ and disrupt social safety. After rural schools are closed and consolidated, only old people remain in the village. Criminals may often commit crimes in those villages, such as burglary. What is more serious is that rural school consolidation may lead to many middle school dropouts. Some researchers found that in the village of Zhongyang county (Shanxi Province), social order was broken recently, and many crimes were committed by students who dropped out of middle schools, such as burglary and abduction (Hu and Que 2009).

Second, some societal factors may also pose a threat to students' safety. In boarding schools, because of poor management, there are many cases of people entering schools to hurt students. It happened in some areas students ran the risk of being attacked by criminals when they travelled a long distance to and from schools. Consequently, when governments promote rural school consolidation, they should also consider students' safety on their way to school or back.

Family

This refers to the status of rural families' daily lives and their main economic lifestyle. The livelihood of rural families is mainly traditionally based on farming, so the corresponding culture of rural school consolidation is "Cultivation and Reading" (or GengDu ChuanJia, 耕读传家).¹⁶ Hence, most rural schools are established near students' homes. In the grasslands, the main livelihood of rural families is the pasturage, so the corresponding culture of rural school consolidation is "nomadic education," such as "horseback school."¹⁷ In areas near rivers, the main economic livelihood of rural families is fishing, and those families often live on boats and float around. Therefore, the corresponding culture of rural school consolidation is "floating education," such as "ship school." With the rapid development of rural urbanization and the change of farmers' economic lifestyle, a growing number of rural residents are moving to cities to find jobs. Although the migration mode of rural workers has changed from single migration, to couple migration, to family migration, their *hukou* (户口)¹⁸ continues to remain in the countryside. After moving to

¹⁵"Acquaintances Society" (or ShuRen SheHui, 熟人社会) is a concept used to explain the relationship among rural residents proposed by Xiaotong Fei, a famous sociologist in China, in his book *From the Soil: The Foundations of Chinese Society*. Fei argues that laws or rules are derived from the requirements of the modern society, because the modern society is organized by the cooperation between strangers. In contrast, in the countryside, residents are familiar with each other, and they believe each other, so they do not need laws to maintain the operation of communities and live in a peaceful environment (2012, p. 1–8).

¹⁶"Cultivation and Reading" (or GengDu ChuanJia, 耕读传家) is a Chinese idiom. It means that in the countryside, traditionally, rural students should not only study books and master reading skills at schools but also study some agriculture skills at home. Thus, rural schools are often located near students' home, which is convenient for students to study.

¹⁷"Horseback school" is a metaphor to explain the education in the grassland. "Ship school" in the next part is also a metaphor to explain the education in areas near rivers.

¹⁸Hukou (户口) refers to the household registration system that is used to register the population in China. Simply, different types of hukou determine where residents may live.

cities, most rural workers live in the suburbs, and their children have to go to migrant schools or private schools that mainly serve those children. Those migrant children are a unique type of rural students, and protecting their rights to receive education is a vital issue that must be considered in rural school consolidation.

Local Government Finance

In order to allow more students to reach schools that are closer to their homes after school consolidation, many county or city governments have chosen to close old schools and establish new schools in different places or expanded boarding schools. Those measures may place a heavy fiscal burden on local governments (Liu et al. 2008). In fact, after school consolidation, local governments need to spend a huge amount of money to optimize the allocation of educational resources, improve the material conditions of school, and purchase new equipment or facilities. Overall, the cost of school consolidation is high. If the county or city government does not have an adequate fiscal budget, it will be difficult for them to achieve school consolidation.

People's Will to Be Educated

School consolidation may have a profound effect on people's educational interests. Promoting school consolidation should respect for farmers' will, which also reflects the procedural justice of school consolidation. Rural residents have a strong emotional attachment to their rural schools. Rural schools are not only a landmark building in the countryside but also a spiritual and meaningful symbol of the countryside. The reason why farmers do not want to close or consolidate schools is that they are worried not only that their children should travel a long distance to and from school and they need to afford the extra cost but also that their children may be bullied in other villages (Fan 2006). Some extremely notorious cases of school closure were usually caused by some local educational bureaus rarely seeking the opinions of villagers' committees, leaders of villages, and farmers in the process of school consolidation. They only announce that rural schools should be closed and consolidated, which arouses the strong opposition of farmers. In some villages, farmers even spontaneously set up a "school protection committee" to protect rural schools from closing or consolidating. "People oriented and respecting public opinion" are the basic value to be observed during school consolidation. Seeking public opinion may restrain the process of school consolidation, but it entails the standards of school consolidation.

1.2.5.3 Educational Constraints

Educational constraints refer to the educational principle and the principle of running a school, fully considering what can allow school consolidation to perform a function in terms of improving the quality and benefits of education and promoting the development of students' mind and body. If those educational goals are not achieved, governments cannot close or consolidate schools arbitrarily.

Students' Physical and Mental Development

For most rural students, rural school consolidation means that they have to travel a longer distance to and from school. Senior students in primary schools and students in middle schools may adapt to the change of distance, but those young students aged 6–9 may suffer an injury and be negatively affected by a less-attentive environment. Those lead to a suggestion that young students are not suitable for studying and living in boarding schools, and the distance that students travel to and from school cannot be too long. Even if students can take the school bus to school, the traffic time of students in primary schools and in middle schools cannot exceed 30 min and 50 min, respectively.

Schools and Rural Communities

If rural schools are closed and consolidated, the sense of commonality arising from rural schools in rural communities will be destroyed. As a result, the life of children will be separated from the community, which can damage the vitality of the community in turn. In fact, in a certain settlement space, from the point of view of students and parents, a school in the neighborhood has not only an educational function but also the symbolic function of suggesting that the area is highly inhabitable (Shi 2004). For rural communities, the disappearance of schools means the disappearance of ties that have symbolic meaning and hold the community together. Moreover, because of the increase in rural schools, rural communities may lose important social communication resources and become uninhabitable, which may aggravate the disintegration of rural communities and accelerate the outflow of rural population. As a result, rural communities will become “desert society.” Therefore, rural school consolidation should consider the relationship between rural schools and rural communities, because rural schools are an organic part of rural society.

School History and Culture

Schools should be considered as animate instead of inanimate entities. For old schools with a long history, every building and thing associated with it represent a significant culture. If there is no school, there will be no hope for the countryside.

Education is a “nerve system” of a nation and is also the best expression of a nation’s tradition and expectation.

Schooling Functions

A school is called thus because it has a social function from the perspective of sociology. School is a place to perform schooling, especially the national curriculum standards. According to the *Outlines of the Curriculum Reform in Basic Education (Trial)* (基础教育课程改革纲要(试行)) issued by the central government, the primary school needs to offer nine subjects, including Moral and Life (or Moral and Society), Chinese, Mathematics, Science, English, Comprehensive Practical Activity, Physical Education, Art (Music or Fine Arts), and Local Optional Course.¹⁹ From Grades 1 to 6, teachers in primary schools need to work for 6020 hours if they want to meet the requirement of the national curriculum. When we consider the full workload of 20 h/week for each teacher and 21 weeks of work/semester, a primary school needs at least 14 teachers so that it can fully perform the function of education. Moreover, if we consider the ratio between pupils and teachers (about 1:19) recommended in national documents, the minimum number of students in primary school should be 266. Middle schools should offer ten subjects, including Moral Education, Chinese, Mathematics, English, Science (Physics, Chemistry, or Biology), History and Society (or History and Geography), Sports and Health, Art (Music and Fine Arts), Comprehensive Practical Activity, and Local Optional Courses. The total amount of teaching work for 3 years (or from Grades 7–9) is 3502 h. If each teacher takes 14 h/week and 21 weeks/semester to complete work, a middle school needs at least twelve teachers to complete the task of secondary education. Moreover, if we consider the ratio between students and teachers (about 1:13.5–18) in middle schools in national documents, the minimum number of students in middle school should be 162. It is worth mentioning that the scale of middle schools can increase moderately, so the minimum number of students can rise considerably. If the teacher’s weekly workload and the student-to-teacher ratio change, the minimum number of students will also change.

For a particular instance of rural consolidation, if there are conflicts between the twelve constraints mentioned above, the government should carefully consider those conditions that can perform the function without extra funds as the priority conditions. For example, compared to the condition of students’ physical and mental development that is the compulsory condition and cannot be changed by other factors, the function of schools can be affected by narrowing the student-to-teacher ratio and increasing the number of *bianzhi* (编制).²⁰ Therefore, governments should prioritize the condition of students’ physical and mental development.

¹⁹Local optional course refers to those courses that are designed by schools or local governments, such as some courses that introduce the local culture.

²⁰Bianzhi (编制) is a kind of formal identity of an employee in schools and is also a kind of personnel management system. When teachers have bianzhi in public schools in China, it means they are

1.2.6 Design Proposal of Standards for Rural School Consolidation

The process of designing standards for rural school consolidation with Chinese characteristics is equivalent to the process of achieving the satisfactory goal of school consolidation by working on the constraints identified by the local governments.

According to the extent to which involved stakeholders can modify the twelve constraints mentioned earlier, they can be classified into three categories. The first category includes those constraints that cannot be changed at a fundamental level such as the geographical conditions; the clan, ethnic, religious, and culture conditions; the conditions of students' physical and mental development; and the historical and cultural conditions of schools. These conditions should be regarded as the basic standard of school consolidation.

The second category includes those constraints that can be changed under certain conditions, such as the population condition, the conditions of family survival, the condition of people's will to be educated, and the relationship between schools and rural communities.

The third includes those constraints that can be changed completely, such as the traffic conditions, the condition of local governments' funds, the social security condition, and the function of schools. The second and third categories can be considered as the basis for determining "the first flexible standard" and "the second flexible standard" of rural school consolidation. These three categories are not divided absolutely, and they can overlap under certain conditions.

There are 2851 county-level administrative areas²¹ in China. Because of the different conditions of those areas, such as the location, the developmental level of the economy, the urbanization rate, the natural resources and environment, the local cultural traditions, and residents' schooling year, the flexibility to modify the constraints of school consolidation is different. The national standard (GB3953.1-83) issued by the central government in 1983 refers to the unified rule of repeated things and concepts. Based on the comprehensive result of science, technology, and practical experience, the standard can be approved by authorities and issued in a specific form, as a common rule and foundation, after some relevant stakeholders reach an agreement. Since the complexity of school consolidation is higher than the complexity involved in formulating technological standards, it is impossible to design and issue a unified national standard. However, based on those constraints mentioned above, we can propose a new standard model composed of basic and flexible

formally employed by governments and can enjoy higher salaries and insurances. Public teachers require officially established positions to stay on the public payroll.

²¹According to the current administrative division of China, the county-level administrative areas include seven types, such as municipal districts in prefecture-level cities, county-level cities, counties, autonomous counties, autonomous counties (banners) in autonomous areas for ethnic minorities, special economic zones, and forest districts.

parts that can be used as a reference for county and city governments when designing a plan of school closure and consolidation.

1.2.6.1 Standards for Rural School Closure and Consolidation

In the context of decrease in the total school-aged population, the first option of rural consolidation is to consolidate or close rural schools. Rural school closure and consolidation include two aspects: the first is to close or consolidate schools, and the second one is to reduce a school into an incomplete primary school or a small-scale school²² that is managed by a nearby complete primary school or central school.

The main objects of rural primary school consolidation are countryside primary schools and small-scale schools. Based on the principles of the changes of student population, the convenience of traffic, the similarity of culture, and the history of schools, local governments can close or consolidate some countryside primary schools and small-scale schools in a step-by-step manner and encourage some small-scale schools in those areas with inconvenient traffic and unsafe roads. Moreover, local governments can establish primary schools consisting of Grades 1–3 in every village, complete primary schools in some villages, and the central school in towns or townships. The primary boarding school does not require students who are in Grades 1–3 to get boarding in general.

Based on the *Evaluation Indicators of Small-Scale Schools' Development* issued by the Education Department of Taiwan (CN), the author formulates a theoretical

²²At the stage of primary education, there are five kinds of primary education organizations, such as the small-scale school, primary school consisting of Grade 1–3, complete primary school, incomplete primary school, and central school. The small-scale school refers to educational organizations that have only one teacher and consider teaching multigrade classroom as the main method. In recent years, with the deep reform of the system of small-scale schools, the small-scale schools with one teacher have changed significantly. Now teachers of small-scale schools are managed by the central school, and many teachers are required to serve small-scale schools. The primary school consisting of Grades 1–3 was derived from the primary school system (or RenZi Guichou school system, 壬子癸丑学制) in the period of the Republic of China. In this school system, the primary school was divided into two parts, namely, the primary school consisting of Grades 1–4 (or low-level primary school) that only served children aged 7–10 and the primary school consisting of Grades 5–8 (or high-level primary school) that served graduates of low-level primary school. Today, in order to ensure the scale of schools, some local governments may affiliate the preschool or kindergarten to the primary school consisting of Grades 1–3. The complete primary school refers to the primary school consisting of Grades 1–6 (or Grades 1–5 in some areas whose school system is 5 years), and every grade has normal classes with several teaching activities. In some remote areas, due to the inconvenience of transportation and lack of teachers, some primary schools have been able to only set up some grades, such as Grades 1–4 or 1–3. Therefore, those schools are called incomplete primary schools. Since the implementation of the educational management system based on the county government in 2001, the central primary school, also known as the central school, has been the only primary school in townships or towns that have been commissioned by the education bureau in a county or city to implement some administrative and educational research and perform the function of management and instruction.

model for rural school consolidation. The core idea of this model is “basic standards + flexible standards” (see Table 1.13).

If primary schools meet any requirement of the basic standards, they cannot be closed or consolidated. The flexible standard is divided into two types, namely, “Flexible Standard I” and “Flexible Standard II.” “Flexible Standard I” means that those schools who obtain a score of 40–60% of the total after a comprehensive evaluation can be changed into the small-scale school or a primary school offering Grades 1–3. “Flexible Standard II” means that those schools who score lower than 40% of the full score can be closed or consolidated.

Compared with rural primary schools, the pressure to consolidate rural middle schools is relatively small. Students in middle schools have better self-care abilities and health, and their emotional development or reliance on their families can be improved. Thus, local governments can expand the scale of middle schools and develop middle boarding schools. According to the new construction plan for towns or townships, every town or township is permitted to run a middle school in principle. Towns or townships whose population is over 40,000 can run two middle schools, and those whose population is less than 20,000 can run a 9-year school (including the primary school and the middle school). Based on the lowest scale of middle schools (about 162 students in middle school) calculated above, those middle schools can be consolidated if they meet the following requirements: first, middle schools having less than 3 classes, less than 150 students, poor conditions, and small developmental potential can be consolidated. Second, middle schools with an average score of less than 65 on the students’ academic test can be consolidated. Third, a middle school whose number of school-aged children has declined noticeably, who cannot reach the lowest scale of students enrolled in schools, or whose service population is less than 15,000 can be consolidated.

1.2.6.2 The Construction and Expansion Standard for Rural Schools

According to the theoretical model proposed above, schools that do not comply with “the standard of reserving school” or “the standard of changing school’s function or nature” can be rebuilt or expanded. The construction and expansion of schools can be designed based on the economics theory of school scale and the relevant flexible standard mentioned above. The construction and expansion of schools in the process of school consolidation should follow the economic logic of school scale owing to the following reasons.

First, the theory can exclude the interference of some flexible variables that are relevant to the standards for reserving school, such as geographical environment and traffic conditions, which means that the construction and expansion of schools can be designed according to the rational principle. Second, the utilization of schools’ resources is characterized by “unity” or “inseparability.” The unity of schools’ resources means that the decline in the number of students may not lead to a reduction in the cost of the school land, the infrastructure, the equipment, and other resources. The inseparability of schools’ resources means that some resources

Table 1.13 The basic standard and flexible standards of rural primary school closure and consolidation

	5	4	Points	2	1
Flexible standards			3		
1. The number of students enrolled in schools (Unit: students)	Over 81	61–80	41–60	21–40	Under 20
2. Students' test score (Unit: points)	Over 90	81–90	71–80	61–70	Under 60
3. Distance students travel to school (Unit: kilometers)	Over 3	2.1–3	1.6–2	1–1.5	0–1
4. Means of transportation	Walking	Riding bicycle	Taking bus and paying 100% fees	Taking bus and paying 50% fees	Taking bus and pay-free
5. School history (Unit: years)	81–100	61–80	41–60	21–40	Under 20
6. Relationship between school and rural community	Strong reliance	High reliance	Moderate reliance	Slight reliance	Low reliance
7. Demographic structure of school-aged children in communities	Over 20% ^a	Under 10%	Stable	Under 10%	Over 20% ^b
8. Educational funds provided by local governments every year (Unit: yuan)	80 million	60.01 million–80 million	40.01 million–60 million	20 million–40 million	Under 20 million
9. The use of original school land	Education	Rented by education departments	Auction funds for education	Belongs to the rural community	Idle
10. Rate of sense of social security	Under 60%	61–70%	71–80%	81–90%	Over 90%
11. Others					
Basic standards	1. There is only one primary school in the town or township				
	2. The students enrolled in the school come from different ethnic minorities and religious groups. There are conflicts between nearby clans				
	3. There are many dangerous factors on the way to schools, such as possibility of mudrock flow, landslide, embankment burst by floods, and wild animals				
	4. The school buildings have a history dating back over 100 years				
	5. Sixty percent of the residents in communities oppose the school closure and consolidation strongly				
	6. Others				

Note: ^a“Over 20%” means that the increasing rate of school-aged children is over 20%; “Under 10%” means that the increasing rate of school-aged children is under 10%; “Stable” means that the increasing rate of school-aged children remains stable; “Under 10%” means that under 10% of school-aged children migrate to other communities

^b“Over 20%” means that over 20% of school-aged children migrate to other communities

are used as a fixed unit, and they cannot be reduced when the requirement does not meet an expected limit, such as winter heating in classrooms. Third, the specialization of school teaching and management helps to improve the quality and efficiency of education. The increase in schools' scale can improve the problems caused by general teaching or multidisciplinary teaching and help promote the professional development of teachers. Because of the increase in the number of teachers' *bianzhi*, the principals can employ more school administrators according to relevant standards and promote the division and cooperation of labor and the specialization of school management. Fourth, the economics logic of school scale can help schools provide students with various courses or activities to meet their developmental needs of personality and increase the choice space and development opportunities.

The construction and expansion standard of rural school consolidation should consider the variables, including the region and population coverage by school, the scale of school (the number of classes per grade and the total number of classes), the allocation of resources, and the land area (or building area).

Excepting the standards for rural school consolidation, rural school consolidation also brings up further policy issues, such as the procedure justice, the scale of rural schools, and the equality of educational opportunity. Future studies can take up discussions of these important topics.

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Chapter 2

Educational Technology as School Reform: Using Actor-Network Theory to Understand Recent Latin American Educational Policies



Inés Dussel

2.1 Introduction

In the last decade, most Latin American countries carried out programs that massively distributed computers or tablets to school children—among them, *Aprende.mx* in Mexico, *Plan Ceibal* in Uruguay, *Conectar Igualdad* in Argentina, and *One Laptop per Child* in Peru and Paraguay. These programs sought to “solve” the digital gap by distributing digital devices and training teachers to use them as part of digital literacy strategies and as ways of promoting more attractive, engaging pedagogies.

The programs were based on a diagnosis of the inefficacy of the school system and also of the exhaustion of the traditional school form (Vincent 1980), the failure of simultaneous pedagogy, whole-class lesson, and memorization and repetition as didactic strategies (Cuban 2008). Confronting what was perceived as a hopeless panorama of schooling, digital devices were presented as guarantees of educational change, as they produce personalized learning environments, mobilizing teachers and students with more relevant and up-to-date methods.

However, it should be kept in mind that each new technology has been accompanied by similar promises. Allow me to take a short detour through the history of technology to discuss these promises. As works done by historians of science such as Langdon Winner (2004) and others show, for over two centuries, technological novelties have fed the pedagogical imagination and utopias to design learning environments that require no effort or study and could be adjusted to the needs of each learner.¹

¹A study of cinema’s precursors found traces of a significant event. Marie Antoinette, the famous French Queen, asked an inventor of her time, the Count of Paroy, to use new teaching methods on

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An example of this type of promises can be seen in some utopias that emerged with film as a visual and social technology. Among others, the “educational prophecy” of David W. Griffith, the director of “The birth of a nation” (1915)—considered as the first US movie—predicted that films would completely change the modes of access to culture:

Imagine a public library of the near future, for instance. There will be long rows of boxes of pillars, properly classified and indexed of course. *At each box a push button and before each box a seat.* Suppose you wish to ‘read up’ a certain episode in Napoleon’s life. Instead of consulting all the authorities, wading through a host of books, and ending bewildered without a clear idea of exactly what did happen, you will merely seat yourself at a properly adjusted window in a scientifically prepared room, *press the button and actually see what happened...* There will be *no opinions expressed.* You will merely be present at the making of history (DW Griffith, “Five Dollar ‘Movies’ Prophesized” (1915), quoted in Friedberg 2005: 242–243, my underlining).

In Griffith’s prophecy, there can be seen some elements of his own time (the library, the window, the history of Napoleon as relevant cultural knowledge) as well as others that were newcomers: the objectivity of machines, the button or switch device that opens up a new experience, and the possibility of being there at the very moment that history is being made, a strong promise of film in its beginnings (Daston and Galison 2007; Doane 2002).

What is striking is that, save some details, the screen or box with buttons is quite similar to today’s YouTube. YouTube is, like the pillars’ library, a gigantic archive of videos accessible through a single click, whose classification and indexation is delegated to algorithms (Snickers and Vonderau 2009). Griffith’s box and Google’s video platform share the expectation that technologies will end any mediation: simultaneity will allow time travels, not as in a time machine but through making the past coetaneous to the present of the spectator or the player so that s/he can at last “be there,” freed from the intermediations of books, existing authorities, or others’ opinions. Another element that connects the futurism of Griffith to this present is the promise of the “taylor-made” and the “just-in-time” learning experience for each viewer, which is being exacerbated and amplified by the increasing individualization of platforms and screens (Sadin 2017). The sedentary scene of watching and reviving history through a window or screen is another similarity, even though it should be noted that in the last years spectators have stood up and started moving, taking their portable devices as bodily prosthesis and producing quick and fragmentary experiences of seeing and reading in transit, consistent with the acceleration of the rhythm of life that demands that each moment is a productive one (Crary 2013; Valialho 2017).

his child, who showed no interest in studying. Paroy was funded to produce a magic lantern that had several scenes of the history of France and of the Bible. The argument of the Count was that most children in their rooms have their minds captured as a result of obscurity, [but] they are suddenly illuminated by a great disk that frames the painting as a medallion. The curiosity charges their imagination, that gets wthe details of the object represented with enthusiasm.” However, few months after this proposal the Royal family was jailed and the Dolphin never saw this pedagogical innovation (Mannoni 2000, pp. 84–85).

Thus, the box-with-buttons imagined by Griffith is not just a curiosity in the history of the technological imagination of educational futures; it speaks of a long-dating imaginary that, together with the overwhelming advertising campaigns of technological corporations, states that “the future is here” and that the technological change of education is unstoppable. This rhetoric of inevitability (Nespor 2011) includes the celebration of those who share the optimism of the US filmmaker, encouraged by the uncritical adoption of the “technological solutionism” of every social problem (Morozov 2014) and also the pessimism of those who believe this is the end of literacy and the beginning of a new dark era.

Against this rhetoric of the inevitability of technological change in education, seen as a seamless, unidirectional movement toward progress or decay, this chapter intends to present some reflections based on research done on Latin American programs that point to the ambivalences and inconsistencies of these strategies for digital inclusion, related to the complexities in which technologies are enmeshed. As digital media studies and Actor-Network Theory (ANT) studies show, technologies are inscribed within heterogeneous networks made of people and objects. I am interested in analyzing these technology programs as strategies for school reform and in studying them as networks that bring new actors and dynamics into educational systems, based on a stronger awareness of the role played by artifacts and objects and on new discursive configurations around educational change. By doing it, I want to counteract the power of the narratives of school reform that put unconditional faith in the introduction of technologies as motors of change. I also want to point to the heterogeneous temporalities that these reforms carry along, bringing long-dating imaginaries about the present and the future that affect the ways in which technologies operate in contemporary politics.

2.2 Dismantling the Rhetoric of Educational Change Through Digital Technologies: Theoretical Standpoints²

Digital technologies are currently presented as “the” kernel of change and reform in education and are thus surrounded by “hype, hope and fear” (Selwyn 2014). They promise a new model for education that will undo the wrongs of the educational system and promote its democratization through openness, flexibility, and customized programs. These reform programs generally see schools as industrial, Fordist systems that are presumably outdated; in this view, the old institutions of schooling, including universities, will be replaced with technologically rich, user-friendly, and economically accessible environments.

There is a certain irony in the fact that digital media vow to end centralized, one-size-fits-all models of education, and yet, they have become, in several countries,

²This section and the next one expand the arguments presented on a previous text on educational technology as global educational reform (see Dussel 2018).

the nucleus of centralized state programs to promote digital inclusion and transform schools. They have entered a complex set of relations and regulations that, for example, considers the level of schools as that of implementation and that includes and relies on traditional agents such as school inspectors and principals; they also operate through the spread of discursive rules about what constitutes good practice in ways that are similar to older reform programs.

I would like to propose a different take on this irony, one that problematizes the opposition between digital media and schooling and instead looks at how they become connected in the reform network that is taking place in these technology-driven reform programs. My approach is grounded on Actor-Network Theory (Latour 2005; Law 2009), a historical and political sociology of educational reform (Popkewitz 1991, 2008) and an anthropological and materialist view of local practices (Das and Poole 2004; Burrell 2012; Fenwick 2012; Appadurai 2013). In this approach, reforms are not bounded strategies but movements or forces that have multiple trajectories of participation (Nespor 2002: 366). This means that, contrary to what the global jargon of educational technology says, the links between a particular reform, its enactment in schools, and the global or transnational trends toward digitalizing schools cannot be seen as a one-way, sweeping movement toward digital inclusion; on the contrary, these connections have to be studied and “flattened out” in a particular cartography that emerges out of a close study of how this reform is taking place (Latour 2005).

The analysis of local practices is not set to “capture of the exotic” (Das and Poole 2004: 4) or as another example of what is going on in the “Global South,” but as an analysis of the specificities of a locality where, such as in Argentina until recently, a politically radical agenda for education in schools prevailed (McGuirk 2014, for a more general view of this process). This radical agenda is not a script in the background but is weaved in the actors and forces that are mobilized in the reform network. In this approach, “local practices” are nodal points in a network that are distinct in their scale and scope. The network might or might not include what is usually perceived as the global or the transnational: the global, in this case, technological devices and expert knowledge produced by transnational corporations, becomes important in the network as far as it is brought up and mobilized by some actors in each network.

My take on ANT theory follows John Law’s assertion that it is less a coherent set of principles than a “diaspora that overlaps with other intellectual traditions” that share “a sensibility to the messy practices of relationality and materiality of the world” (Law 2009: 142). It can also be described as “an empirical version of poststructuralism,” with a posthumanist stance on the social and a concern with “the strategic, relational, and productive character of the particular, smaller-scale, heterogeneous actor networks” (p. 145). Broadly speaking, ANT theory is concerned with the connections, the associations, the translations, and the transformations as forces move through space and time.

I find this framework particularly useful for studying educational reforms. School reforms and change are to be understood as “the ways school practices are made mobile, and what and how they connect as they move” (Nespor 2002: 368). This has

at least two consequences. One is a singular concern with movement and spatiality; it is a framework that does not consider the social as a given or fixed entity, but as a continuous becoming, open, and unpredictable (Latour 2005). The second is that ANT method calls for a myopic or oligoptic (the opposite of a panoptic) view, a closer look at the how, the when, and the minutiae of the connections that make up social change; it bears a resemblance to what Foucault called the “gray, meticulous and patiently documentary” task of genealogy (2003: 351). Once the researcher has traced these connections and “its tracers” (all connections leave a trace, however faint or difficult to see), its modes, and its mediators, then she can move to a different scale, but only if the connections show that movement. It is through tracing these actions that the researcher can decide whether a connection was effectively made to another set of practices that can then be called the global or the national level. Analyzing educational reforms from an ANT perspective does not imply separating the realm of design and practice, but understanding the different registers that organize educational practices at different scales. It has close links to anthropology and to history; reforms produce effects that might be diffused and felt later on and that might be experienced in other layers of the school system than the ones expected.

In the next sections, I would like to take this approach to produce a “flat cartography” (Latour 2005: 171ff.) of a particular educational reform in Argentina and analyze it as a network that mobilized specific artifacts, agents, and forces in order to massively introduce digital media in secondary schools. From an ANT perspective, the program *Conectar Igualdad* can be understood as an important policy vector (Strathern 2004) that disseminates technological artifacts and knowledge through different educational scales, such as national, district, school, and classroom networks (Nespor 2004). A policy vector is a connector that allows knowledge (understood as a set of practices) to travel across different scales or levels. This travel (referred to as “impact” by other theoretical positions) needs particular entanglements and conditions that connect expert knowledge and social opinion (Strathern 2004: 28–29).

Thus, I think of this program as a policy vector that mobilizes some discourses and priorities from the national level and even from the transnational sphere of technological corporations and edu-business rhetoric, in relation to teachers’ practices. In my approach, the scale of the classroom is not to be considered as a separate layer—of graduated size—but as a certain arrangement of temporality and spatiality that is defined, among other characteristics, “by the way in which participants ‘calibrate’ school-based events to events elsewhere” (Nespor 2004: 312). The actions of connecting to and contextualizing within outer events are thus part of what defines a particular network such as the school and the classroom. That is why “[n]o description of teaching can be complete without a description of the spatial and temporal orders of the worlds to which it is calibrated by teachers and students” (Nespor 2004: 313). While I will not analyze classroom practices in particular in this text, I will point to the many actors (including artifacts and people) that are connected and hold together this reform network, from the transnational and national scale to that of the classroom. This is the trajectory that I would like to trace in the following sections of this text.

2.3 Reform Networks in Action: The Case of Conectar Igualdad in Argentina

I will proceed first with a discussion of policy documents and strategies that took place at the central level of the policy, which, as will be shown, was far from homogeneous and univocal. The Argentinean government launched *Conectar Igualdad* in 2010 as an extensive program to reduce the digital gap and transform public schooling.³ Focusing on secondary schools, it promised to deliver three million netbooks to every student and teacher in public institutions in a 3-year period (2010–2012), but by the end of 2015, over five million had been distributed. Also, connectivity and electric wiring and plug-ins had to be provided for over 13,000 schools throughout the country. The program was closed in 2018, in the context of a new government that is prone to budget cuts and less social expenditures. However, the experience remains interesting both for its massive scale and reform intentions and for its social inclusion orientation, not so typical in these times of neoliberal rhetoric and neo-populist chauvinism.

The presidential decree that created the program in 2010 framed it as part of the recognition of education as a public good and of the personal and social right to a high-quality education. The language of reform was centered on citizenship and social rights and also on the State's responsibilities, and there was almost no presence of buzzwords like individualism, liberal freedom, and economic competitiveness that are so common elsewhere. Egalitarianism, democratic participation and entitlement, pedagogical innovation, and state-centered policies instead of market-driven strategies were some of the traits that characterized Argentinean social policies in the years that went from 2003 to 2015 and that made them an interesting laboratory for radical politics until very recently.⁴

Whereas other Latin American experiences, notably Uruguay and Peru, focused on primary schools (Pérez Burger et al. 2009; Cristiá et al. 2012), Argentina's ICT educational policy focused on secondary education, targeting all public schools nationwide (over 13,400 secondary schools).⁵ One interesting feature of *Conectar Igualdad* is that it included a loud-and-clear pedagogical call to make public schools stronger and more appealing for young people, renewing its pedagogies and bridging in- and out-of-school cultures, particularly for the new comers who perceive secondary school as elitist and too academic. If ICT policies in education have generally embraced an anti-school program of reform (Selwyn 2011), Argentina's program was inclined to readjustment and reconstruction: the emphasis was put on making schools perform better in terms of their contribution to public knowledge

³ See Dussel et al. (2013) for a more detailed discussion of the program.

⁴ I take the notion of "laboratory for radical politics" from Justin McGuirk's analysis of urban policies in Latin America (McGuirk 2014).

⁵ The program later expanded to include teacher education institutions and also schools for children with special needs. In several provinces and districts, it was accompanied by other programs that targeted primary schools.

and social democracy and to increase the engagement and participation of the “new comers” in school activities and knowledge, who were mostly received in the public institutions that were targeted by the reform program. The rhetoric of *Conectar Igualdad*, then, did not endorse an uncritical celebration of new technologies but calibrated them to political priorities of inclusion and participation. *Conectar Igualdad* was presented as another step in a long-term strategy of improving schools, particularly public schools, as significant learning environments within a context of abrupt changes (Ministerio de Educación de la Nación Argentina 2011). Netbooks were not seen as substitute teachers or books; access to knowledge and literacy practices was a goal that had to be updated, but not abandoned.

This kind of rhetoric is different from what is prevalent in the UK and the USA, where ICT programs are brought predominantly by the business sector and are dominated by the goal of producing a competitive global workforce and a digitally literate global citizenship (Selwyn and Facer 2013). They also include the “promise” of a closer surveillance of students’ work and activity and the production of data that can be used to increase the accountability of educational systems.⁶ In that respect, the Argentinean program stands out as an example of how local forces mobilize global vectors and artifacts in particular ways and connect them to local strategies and fields. The program produced a problematization of secondary schooling that focused on its undemocratic, rigid structure and curriculum; digital media were included in a set of strategies and social relations that promoted inclusion of social groups and knowledge that had hitherto been excluded from secondary schools. The rhetoric was not one of delivering flexible or customized content in liberal terms, but one that focused on the expansion and renewal of curricular and cultural content and on developing a seductive strategy that would ensure that the new students successfully participate in and engage with school activities. It is noteworthy that the notion of “digital natives” was frequently mobilized to legitimize the introduction of the netbooks as devices that were more familiar to the new comers and that would make them more attentive and responsive to teachers’ demands; the possible contradictions of the new attention economy of the screens and social media and the curriculum requirements was not addressed, assuming a natural continuity between modes of learning and a high degree of engagement on the part of the students.

2.3.1 Mobilizing the Connectors: Transnational Business and Governmental Actors

Besides this general discourse and political strategy, the decision to implement a policy with the scale, costs, and dimensions of *Conectar Igualdad* affected many actors and agencies. First of all, the concurrent goals of producing and buying netbooks, establishing connectivity to the schools, providing teacher training for over

⁶See “No Child Left Untabled,” New York Times Magazine, Sept. 9th, 2013.

400,000 teachers and school principals, and producing educational software implied a massive mobilization of resources and people. To achieve these goals proved in itself an organizational and administrative challenge that was hard to meet, and the strategy was to involve several state agencies in the administration of the initiative, thus distributing tasks and responsibilities. One of the effects was that the program was run by multiple agencies with a complex arrangement of responsibilities and division of labor, i.e., a centralized agency, attached to the President's Office, that distributed the netbooks and trained teachers, and the Ministry of Education departments that overlooked content and teacher education. This led to a duplication of responsibilities and a degree of rivalry between these agencies.

Among the many actors involved in the process, there were transnational corporations that were significant shadow players, somewhat obscured by the prominence of the State and also by the popular-national rhetoric of the administration. The hardware for the netbooks was developed by a pool of 10 international companies, based in China and assembled in Argentina. The resulting netbook device was designed to run both on Windows and Linux and other free software programs and applications and included a wide range of educational software and multimedia tools for producing and recording sound and video. Reportedly, Microsoft granted full license of Windows Office at \$3 per netbook. Also, Intel was a key partner in outsourcing the production and selecting software and content. As Lingard et al. say, “[i]n the world of network governance, government is understood to be located alongside business and civil society actors in a complex game of public policy formation, decision-making and implementation” (Lingard et al. 2014, p. 29).

As a sort of side note, it is interesting to observe that the presence of private companies became increasingly uncomfortable in 2013, in the context of a political climate that called upon a nationalistic rhetoric (i.e., nationalization of the oil company, conflicts with hedge funds over foreign debt, resurgence of the Malvinas/Falklands claim). At that time, an open-source and free operating system was launched, Huayra Linux, that took the Quechuan name of wind (Huayra) to signal that there were “winds of change” that would promote technological sovereignty and national independence from transnational corporations. Yet, this was the first step in 3 years taken toward open-source politics, an issue that had remained surprisingly silent at the launching of the program (see Venturini [in progress](#)). It is helpful to keep in mind that, as Jan Nesper says, “reforms are contingent effects of struggles and negotiations in which groups try to define themselves and their interests by linking up with other relatively durable and extensive networks” (Nesper 2002: 366).

In the netbooks themselves, there was a wide offer of software and content. There were over 5000 educational resources for teachers in the netbook's “desktop” space—mostly produced in previous years by the national educational portal, Educ.ar, and also provided by private publishing houses, again showing strong links with the private sector and also with the nonprofit developers such as the case of GeoGebra.

Connectivity was among the top challenges of this program, considering that there had been many years of underinvestment in infrastructure and that a strong flow of resources was needed. The goal of the initiative was to install a “technological floor” (i.e., establishing adequate plug-ins and electric wiring) in each classroom, so that 20–30 netbooks could be connected simultaneously. However, this was extremely expensive and difficult to achieve, and the distribution of netbooks progressed more quickly than the wiring of schools. Despite this failure to get connected, teachers and students found creative ways of dealing with the lack of connectivity, working offline in classrooms and online at home or at Internet cafés. As one teacher reported in an interview in 2012, a side effect of this situation was that students developed considerable knowledge on which networks were open or on how to get access to or hack the closed ones (see Dussel 2014).

Another relevant connector of this reform network was technical support and maintenance of the equipment. Related to repairing and maintenance, in recent research on classrooms, this appears as a weak link: in some classrooms, there are only three or four netbooks that work, and most of the devices are broken or blocked (Haedo 2015). On the other hand, the policy underestimated the relevance of the human actors that were needed to make the program work at the school level, particularly with teachers. From its inception, *Conectar Igualdad* proposed the creation of a new staff member in schools who would be in charge of equipment and connectivity. This agent was called “Technological Referent at the School” (Referentes Tecnológicos por Escuela, RTE) and was supposed to help teachers with technical problems. However, these profiles proved difficult to fulfill—there was a shortage of technical graduates and, in a time of low unemployment rates, educational salaries were not competitive. Thus, several school districts had to divide the RTEs between several schools at once, and this made them unavailable for everyday troubleshooting. It can be said that the weakness or absence of relays to make travel and connections possible was a significant feature of this reform network, and it is telling of the difficulties it faced to be held together.

2.3.2 Mobilizing Knowledge: Experts and Pedagogies

Pedagogy and pedagogical content was also an important connector in this network. Given the program’s strong pedagogical appeal to transform schools and renew their curriculum and cultural content, teacher training and curriculum policies were privileged strategies. However, these strategies require different time frames than the distribution of devices or the allocation of new staff members: as a Spanish educational historian has said, educational systems move at a slower pace than the anxiety of reformers (Viñao Frago 2002). But teacher training was also slowed down because of the several agencies that were running the programs and sometimes even competing among them: during 2011, there were as many as five public agencies

offering similar training programs in any given district.⁷ The centralized program *Conectar Igualdad* promoted regional and national meetings with school principals and inspectors to discuss strategies and steps in the adoption of the new technology. These meetings were supplemented with online courses for teachers and curriculum materials that gave criteria and examples of teaching units. According to different reports, a large amount of teachers received some kind of training, although this training includes self-assisted courses (i.e., prepackaged activities) as well as tutored ones.⁸

Overall, the teacher training documents and materials produced by the program promoted the centrality of teachers in educational change, but they provided only general advice, with a strong appeal to teachers' initiative and creativity—a common tenet of Argentinean teacher education policies in general. The documents took great care to stress that there would be an array of levels of involvement and were careful to include novice and less-trained teachers. Yet the final point of arrival of the training seemed to be defined as an experienced teacher who could move competently across platforms and use different languages; there were scattered references to what can be called “curricular content” (language, history, mathematics) or to curriculum and cultural renewal. Instead, the emphasis was placed on learning how to use these resources and keep students' attention and motivation, in line with what was referred before as the challenges of getting “new” students to engage and participate in school activities. “Social inclusion” seems to have acted as a significant belt through which what happened in classrooms was to be calibrated to outer events, particularly with the emphasis and strategies of educational policies.

In this arrangement, digital media appeared as a resource to make content more appealing to new comers, which, as said before, was perceived as a main challenge for a reform oriented toward greater inclusion and participation in secondary schools. The guidelines conveyed a somewhat simplistic trust in the affordances of digital technology and made no reference to potential conflicts between new media use and traditional classroom practices. For example, they stated that in order to make the most of the presence of digital technologies in the classroom, teachers could either use digital content (i.e., use the Internet as a set of educational resources), social media, multimedia materials, blogs, or projects or collaborative assignments (Ministerio de Educación 2011: 19). These options were unproblematic and envisioned only positive outcomes; for example, the program's guidelines were presented as clear-cut and neutral options to use Facebook or Google as ways

⁷These agencies were as follows: the National Ministry of Education, Educ.ar, ANSES/Conectar Igualdad, Provincial Ministry of Education, and Organization of Ibero-American States (OEI), an intergovernmental agency that has had prominence in this area, training over 60,000 teachers since 2010.

⁸According to the evaluation report done by 11 national universities for the National Ministry of Education, 472,242 people (including principals, inspectors, teachers, families, and students) attended training courses during 2010 and 2011 (Ministerio de Educación 2011). Ros et al. (2014) also give similar numbers about the large extent of teachers who received training for the program. The total number of teachers in the country is around 850,000.

“to replace and improve old communication systems” (Ministerio de Educación 2011: 22).

Interestingly, transnational businesses enter the network not only through the devices but also through software and pedagogical content such as the one presented above. Internet companies, and particularly social media—which are now “the king” of digital media—are claiming to be open spaces and neutral arenas of participation that make room for people’s participation and creativity, fulfilling democratic as well as self-realization ideals. As José van Dijck claims (2013), the corporate ideology promoted by Zuckerberg and others is that everything must be social and that a “truly open and connected space” has to be built. In social media as Facebook and Twitter, the imperative of sharing and annotating all life experiences online so that people become more popular has on its grounds the push to make all data available to all parties.⁹ The policy documents and curricular orientations enforce this corporate ideology and mobilize cultural production in the same direction. In a recent research funded by the government, a student said he valued the program because now “we can all have a netbook, we can all have Facebook” (Ministerio de Educación 2013: 12). Democratization implies becoming a client and consumer of social media, which now seem to define social and cultural participation (Isin and Ruppert 2015). It is surprising that this went unchallenged in the midst of a radical political rhetoric that denounced imperialism and greedy capitalism.

2.3.3 Evaluation as Reform Discourse: The Production of a New Agent in Educational Reform

The last set of agents that I would like to analyze in this flat cartography of an educational technology program is its evaluative component. Evaluation has become a “distinct cultural artifact” in recent times, combining personnel, resources, and particular moralities with their own rituals and hierarchies (Strathern 2000: 2). In educational reforms, evaluations have become more and more prevalent, mobilizing the rhetoric of accountability and transparency that makes them a dominant piece in contemporary political strategies.

The evaluation components of educational technology programs in Latin America are noteworthy for what they say about them and how they construct change and value around the use of technology in schools. Considering that these programs have implied large public expenditures, they have been the object of several evaluations, some of them international (Warshauer and Ames 2010; Lagos Céspedes and Silva Quiróz 2011; Severin and Capota 2011; Cristiá et al. 2012) and others done at the national level (Benítez Larghi and Winocur 2016). These evaluations had their

⁹“Apps, like people, are connectors that boost overall data traffic so all companies can benefit from the “massive value” generated by expanded connectivity” (van Dijck 2013, p. 58).

peak in the first years of the programs, 2010–2012, and were central to the construction of analytic indicators and diagnosis about the massive programs of technological equipment in schools. The indicators included the proportion of personal computers (netbooks or laptops) per student, the coverage of connectivity in each school, the frequency of use of the digital devices in the classroom, teachers' training, and the impact of digital devices on students' learning. Also, surveys were done on teachers' perception of digital culture and students' motivation and interest in schooling. These indicators had to be quantified; thus, training was measured through surveys on teachers that asked about specific ICT courses, and frequency of use was counted upon teachers' report on daily or weekly use of the devices; students' learning was measured through students' performance in standardized tests.

This first wave of international evaluations sketched a less-than-optimistic panorama, showing that the initial expectations were not being fulfilled. They constructed a fairly negative diagnosis on the cost-benefit relations, arguing that the programs were expensive and were not achieving significant gains for students' learning. They pointed out the connectivity problems and the deficits in the repairing and maintenance of the devices, thus curtailing the possibility of effectively having one computer per student configurations in classrooms. The studies found positive outcomes in students' enthusiasm with the programs and in the spillover effects of equipment distributions for the lower-income families. Most importantly, these evaluations were successful in producing a discursive equivalence between pedagogical impact of the digitization of classroom and two indicators: students' performance in tests and frequency of use in classrooms. While increased motivation was a positive impact of the programs, it was not seen as having the same weight than academic performance in achieving social inclusion and efficient use (Cristiá et al. 2012).

In these research frameworks, open and unpredictable phenomena such as the introduction of new technologies to institutionalized settings were turned into quantifiable indicators that sought for cost-benefit analysis of the kind of "value for money" (Strathern 2000: 287) and considered mostly individual variations in learning. In this evaluative research, conceived as part of an audit process, only certain operations count and have to be accounted for (Strathern 2000: 2). A clear example of this reduction is the measuring of pedagogical impact through frequency of use in the classrooms or performance in tests, which leaves unquestioned how these devices are used and whether the tests are taking into account the skills and knowledge that digital devices are mobilizing. While this reduction is coextensive to any evaluative research, which always reduces complex phenomena to particular indicators, in this first wave of evaluative study, the simplification was extreme, and there were almost no methodological reflections about what was left aside and how the evaluations could include how the digital artifacts were and are changing ways of knowing and the knowledge that is valued. The evaluations seem to be taking the promises of educational change at face value and concluded that these promises were unfulfilled and unrealistic but could not present other arguments about other effects that the reform strategies were having, including the set into motion of the evaluation machine.

At the same time that these international evaluations were being carried out, there was a second group of evaluations at the national level, most of them closely connected to the programs themselves. The case of Uruguay is particularly noteworthy, as it looked at changes not only in classrooms but also at home (Pérez Burger et al. 2009; Pittaluga and Rivoir 2012).¹⁰ An evaluative study was commissioned to Michael Fullan in 2013, which brought in systemic indicators about school reform: school government and administration, school climate, teachers' autonomy, teachers' working conditions, available support and resources, and degree of support by the community (Fullan et al. 2013). The commissioned report made a critical diagnosis of the implementation of the program, pointing to its shortcomings in terms of pedagogical transformations, and produced a series of recommendations. Interestingly, this critique did not undermine the support of the population of the program, which continues to be high to this day.

If in the Uruguayan case a critical report such as Fullan's could be absorbed by the program as an input to reorient the strategy, in the case of Argentina, the program, inscribed in a context of political confrontation, enjoyed less consensus and was always subjected to heavy public scrutiny by the media. The evaluations, thus, carried the weight of producing legitimacy for the program, which is evident in the indicators chosen and the ways in which results were communicated, usually with haste and fanfare. In *Conectar Igualdad*, there was an early intention to measure the degree of social inclusion produced by the digital devices, although this proved difficult to quantify (Ponce de León and Welschinger Lazcano 2016). It is remarkable that the authorities took distance from the international protocols of evaluation, taking advantage of the political and financial independence or even isolation of the then-ruling government of Cristina Kirchner from international agencies such as the World Bank or OECD/PISA. The Argentinean evaluations deployed "local repertoires of evaluation" (Lamont and Thévenot 2002), that is, particular forms and hierarchies of value in which societies measure and distinguish the actions of schools. In this local repertoire, social inclusion was ranked first, and the baseline was defined considering complex and multidimensional scenarios of inequality¹¹ that were supposed to be followed and monitored throughout some years in order to see the effects of the program in each setting. Unfortunately, due to changes in the policy and the personnel of the evaluation team, this research project did not continue after the baseline study.

A different line of evaluative research was developed by a consortium of 11 and later 15 public universities funded and supervised by the National Ministry of Education, which produced several studies between 2011 and 2015. A first batch of studies, produced in 2011, focused on attitudes and perceptions of educational and community actors (school principals, teachers, students, families, civil associa-

¹⁰In particular, Winocur and Sánchez Vilela (2016) provide an in-depth study of uses and effects of the program in low-income families and neighborhoods in Uruguay.

¹¹It included 11 different scenarios of social and educational inequalities, considering the interactions between rural/urban, geographical distance from the center of the country, gender, income, school performance, and institutional profiles, among others.

tions), mostly through semi-structured interviews and observations (Ministerio de Educación 2011, 2013). Between 2013 and 2014, a second round of studies was produced using a common research design in different sites, which evaluated different scales: institutional impact, teacher training and practices, uses and perceptions of students, and uses in families and communities (Kisilevsky et al. 2015). In these studies, the argument that was built pointed to the different levels of appropriation of digital technologies by schools, from “initial” to “transforming,” and to the great acceptance and adhesion to the program. In parallel to these studies, the program itself, a distinct state agency, developed a large survey of the beneficiaries of the program in 2013–2014 (Kliksberg and Novacovsky 2015) that asked about the perceptions and frequency of use of the netbooks at school and at home, including the subjects in which the netbooks were more frequently used and whether they were assigned any value for the employability of young people.

These studies, produced by different state agencies, show the confluence of evaluative research and policy legitimation and the extent to which the conditions of production of evaluations impact on what can be studied and shown. The first evaluation done by the universities, developed in 3 months in 2011 and communicated days before the presidential election, almost exclusively focused on positive changes in perceptions and attitudes of teachers and students toward digital culture. The second study by the universities, developed in a 2-year lapse, had a broader scope, but their results were not published until the end of the administration and as part of showing the clear achievements of the program, understating its shortcomings. Argentinean evaluative reports, despite the fact that the official rhetoric of the program tried hardly to resist the promise of the “magic bullet” of technology for educational change, ended contributing with a celebratory tone to the idea that the inclusion of technology was an unstoppable, positive force and that the main measure to value its impact was how far in a single scale of progress had each school gone. The methodological individualism of international studies was shifted from the student to the school, seen as a unit that should follow a similar pattern: the adoption as a gradual advancement toward improvement, equated to higher and more constant use of digital technologies in classrooms and a greater adhesion to the values of digital culture. Despite all the progressive, left-leaning rhetoric of the government, the rationale was no different than the one advocated by technological corporations. It failed to show the bumps, obstacles, and detours of the transnational technologies in heterogeneous spaces (Appadurai 2013; Burrell 2012), flattening out the specificity of the interactions of technologies and bodies in these particular spaces.

An exception to this evaluative rhetoric is a research project developed by the National Institute of Teacher Education (INFD), with a qualitative design that followed five teacher education institutions throughout 1 year, looking closely at what some selected teachers and students could do with digital media (Ros et al. 2014). This is among the few evaluative projects that looked at classroom practices without a learning metrics framework; it was less concerned with legitimating the policy than with building an open perspective on what could be done with the new devices in classrooms, attentive to the ambivalences and challenges of these uses in several

dimensions (disciplinary and pedagogical knowledge, relations, participation). The research teams included local and external researchers, all trained with an ethnographic sensitivity.¹² In that respect, the study was less preoccupied with what the program was producing than with larger changes in the materiality of knowledge and in the kinds of interactions that these new materialities produce; it stood aside and somehow interrupted the logic of evaluation that have been started with the first round of evaluative studies of the program.

2.4 Concluding Remarks

Throughout this chapter, I have intended to produce a “flat cartography” (Latour) of the reform network that was organized by a technology-intensive program in Argentina. *Conectar Igualdad*, launched in 2010 and closed in 2018, had the dual goals of digital inclusion and school change. Designed as a one-netbook-per-student program, it tried to bridge the digital gap through distributing devices to secondary school students (among whom a significant portion come from low-income families) and teacher education institutions while at the same time renewing and expanding curricular and cultural content so as to facilitate the engagement and participation of these students in school activities. My interest in the Argentinean program was also to see how a different rhetoric, in this case of social and cultural inclusion and participation, came together with the promises and imaginaries of technological change and of the rhetoric of the technological corporations, as well as with institutionalized actors—such as school agents or evaluative personnel—that brought their own weight and history to this encounter.

This analysis assumes that reforms can be understood as movements or forces that put together multiple trajectories, producing a new spatiality that is different from the idea of the “complete reversal” or “more of the same” arguments about the introduction of technologies in schools. Classrooms with technologies are not simply or solely “expanded classrooms”; they are inscribed within complex networks

¹²This study shed light on the complex web of practices in which digital media were being mobilized. Instead of demarcating clear ruptures or continuities in classroom practices, the study shows that classroom configurations were reshaped, but not reshuffled. There was no evidence of “flipped classrooms” or a decentered, horizontal organization of teaching and learning; teachers still have a say in providing a script for the classroom, bringing in resources and promoting conversations about digital media. Despite the lack of connectivity in most institutes, the use of digital media was taken as a given: Internet searches or use of audiovisual material were the norm, and they might happen in or outside the classroom, depending on the availability of devices. The time of the classroom was used for discussion and collective work, and tasks were given that are to be completed at home, where connectivity and material conditions might be better to fulfill them. The inclusion of digital media seemed to be happening, but not in the form that it was imagined, that is, with the simultaneous presence of the same, centrally distributed digital artifacts; instead, in these classrooms, there was an interaction with knowledge intensely mediated by digital devices that were present before, during, and after the class (Ros et al. 2014).

that have to be carefully and dutifully assembled. In this respect, Latour's telling example of the many connectors and mediators that are needed to produce the space of the classroom can be brought in to highlight this heterogeneity. Latour wrote:

Fathom for one minute all that allows you to interact with your students without being interfered too much by the noise from the street or the crowds outside in the corridor waiting to be let in for another class. If you doubt that transporting power of all those humble mediators in making this a *local* place, open the doors and the windows and see if you can still teach anything. If you hesitate about this point, try to give your lecture in the middle of some art show with screaming kids and loud speakers spewing out techno music. The result is inescapable: if you are not thoroughly 'framed' by other agencies brought silently on the scene, neither you nor your students can even concentrate for a minute on what is being 'locally' achieved (Latour 2005: 195, his emphasis).

Following his lead, in my analysis of *Conectar*, I tried to visibilize the agents—human and nonhuman—that silently operate to produce the reform network: the political rhetoric of social inclusion; the computers; the plugs, cables, software, and platforms; the booklets and material of the program; the walls and desks of schools; the teacher trainers, teachers, students, and principals; the funding; the technological assistants; the diverse state agencies; and the evaluation rationales and personnel, among many others. Mainstream studies on school reforms pay little or no attention to these agents, yet, as shown previously, it is evident that they play a significant part in the assembling of the reform network and in shaping its effects.

Finally, and coming back to David Griffith's educational prophecy, it can be seen through this case that the dreams of technological change in education remain alive and strong, and in many ways unquestioned, in today's technological and educational landscapes. Many politicians from different sides of the political spectrum buy the promises of the transformative power of digital devices in schools. Yet, as this study shows, the forces that are set in motion by educational technology reform programs are much more complex than they imagine and include fairly known agents and others that are new and that go in unpredictable directions. Thus, it seems necessary in our studies to move beyond the global talk of educational reform and start looking at the contingent and precarious ways in which reform networks are assembled, which make them much more heterogeneous and unstable than what the rhetoric of inevitable and unstoppable technological change presumes.

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Chapter 3

Education Governance and School Autonomy: The Progressive Reform of K–12 School in China



Guorui Fan and Lin Zhang

3.1 Introduction

Education governance and school autonomy are a pair of mutually linked concepts that have involved various relationships, including the relationship between schools and the government and society and the complex relationship between the schools' administration (including the school leaders, teachers, and other staff) and the students and even their parents. The essence of education governance is to build a modern school system that operates in compliance with the law, with autonomy, and under democratic supervision and engages other stakeholders in the society. At the core of the concept lies two goals: the first is to free schools from their overdependence on the government and to achieve autonomy; the second is to gradually realize shared governance that involves the full involvement of stakeholders such as teachers, students, and parents, as well as professional educational organizations, and consequently to highlight the agency of schools, increase the level of professionalism in their operations, and better meet the students' educational needs and facilitate their development (Chu 2004: 63).

With the expansion of compulsory education and the establishment and development of the modern institutionalized education system, schools' organizational systems have become increasingly complex. The struggle for authority over education management has also become complicated, specifically that between schools as professional educational organizations and the education administrators represented by the government and the education administration departments (EADs). As early as the 1970s, some educators in Australia had criticized the centralized model for

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school management and began exploring a school management model where local education bureaus, principals, parents, community members, teachers, and education administrators collaborate and work together, which later became known as school-based management (SBM) (Cuttance 1993; Gamage 1999).

After experimented in the states of New York, Florida, and California, SBM was developed into three basic models in the United States: administrative control SBM, professional control SBM, and community control SBM (Murphy and Beck 1995: 36).¹ Beginning with the St. Paul City Academy in Minnesota, reforms in charter schools were carried out in over thirty American states in the 1990s, with an aim to reallocate power among the state, school districts, and schools, as well as to expand school autonomy and strengthen education performance and accountability (Finnigan 2007). This management model which is based on individual school's situation has been adopted in many countries and regions (Ayeni and Ibukun 2013; Gamage 2001).

School autonomy has become a core theme for educational research and the practice of educational reform (European Commission 2007). The related concepts include centralization, decentralization, authorization, multi-governance, and participation in education governance. The research surrounding this theme was carried out at two levels of power relations: the first level was between schools and the external government, with the focus of decentralization and delegation from the latter to the former; the second level was between the schools' internal leaders and teachers, with the focus of teacher-parent participation. Regarding the former, David K. Cohen studied the impact of federal and state education policies on school governance (Cohen 1982). The crux of the issue was the reallocation of decision-making powers to establish a decentralized model that could enhance the continuous improvement and sustainable development of schools (Mohrman et al. 1994: 57; Wohlstetter and Mohrman 1994). After an external governmental department has delegated authority to a school, the school must undergo internal decentralization as well and create a mechanism that allows the principal, teachers, parents, students, and community residents to directly participate in the school's decision-making process (Dimmock 1993: 92) for effective school governance (Resnick 1999). Various changes are essential for effective school governance. First, the concept of a school's organizational management must be changed to form a shared vision. This leads to the formation of a new strategic plan for the school's development (Gamage 2009) and changes to its internal institutional structure and operating mechanism (Machin and Silva 2013). Next, school autonomy also involves school improvement (Honig and Rainey 2012), teacher training, and school-based curriculum (Herman et al. 1993). In fact, governments will establish strict regulations and restrictions on school autonomy as part of the delegation process and tend to more focus on the performance and outputs resulting from decentralization and school

¹ Kenneth Leithwood and Teresa Menzies proposed the balance control model, the fourth type of SBM model. This model aims to achieve dual control by the community and professionals and is also known as the joint parent-teacher decision-making model (Leithwood and Menzies 1998).

autonomy (Gunnarsson et al. 2008) and have strict performance indicators and goals for schools' operations (Smyth 2014).

Since different countries have dissimilar political systems and cultural traditions, there are variations in education management systems, government–school relationships in terms of power allocation, and the resultant issues, contradictions, and conflicts. Dimmock (1993) teamed up with scholars from many countries to conduct an in-depth study of the relationship between SBM and school effectiveness in various contexts. American and German scholars jointly estimated the significance of school autonomy for different countries and regions based on the 2000–2009 PISA panel data (Hanushek et al. 2013). Higham and other scholars (Higham and Earley 2013) studied the relationship between school autonomy and government control in the United Kingdom from the school leaders' perspective, Zhu (2016) analyzed the United Kingdom's basic model for education governance, while Wilkins (2015) conducted a study on the way the UK government strengthened its supervision over public schools through specialized inspection tools to achieve “control over the controlling power.”

Ko and his colleagues (2016) studied the development of school autonomy and the accountability system in Hong Kong since the implementation of SBM in the 1990s. Xia with her team (Xia et al. 2017) made a comparative analysis of the similarities and differences between China and the United States in terms of the issues that arose from school autonomy and raised two main issues: (a) seeking an optimal balance between the government's external and centralized control of schools and school autonomy and (b) seeking an optimal balance between the principal's and teachers' respective powers within the school's context. Hanushek et al. (2013) used the 2000–2009 PISA data of more than a million students in 42 countries to study the correlation between school autonomy and student performance, as well as variations in that correlation among different countries. They found that school autonomy had positive impacts on student performance in developed countries and those with high PISA scores but had negative impacts for developing countries and those with low PISA scores.

China had a highly centralized political system and planned economy for a long time. However, the reform and opening-up policy has been implemented since 1978, which focuses on economic development. In 1985, the Central Committee of the Communist Party of China (CCCPC) issued the *CCCPC's Decision on the Reform of the Education System* (《中共中央关于教育体制改革的决定》) and proposed to “resolutely streamline administration and delegate power to expand school autonomy” (CCCPC 1985). Following that was the agenda for education reform that included promoting reform of the education management system and facilitating school autonomy. China began exploring a developmental path toward a socialist market economy since 1990. At the same time, it began to seek for establishing an education system that was compatible with the socialist market economic system. The establishment of a modern school system was proposed for the first time in the *Outline of the National Plan for Medium- and Long-term Education Reform and Development (2010–2020)* (《国家中长期教育改革和发展规划纲要(2010–2020年)》), which was issued by the Chinese government in 2010. The

document stated that “in order to meet the requirements for reforming the state’s administrative and management system, the government’s management authority and responsibilities, as well as the authority and responsibilities relating to the operation of all levels and types of schools, are to be clearly defined”; “separation between politics and schools, and between supervision and operations, are to be promoted”; and “the government and its departments must establish service awareness, improve management methods, establish perfect supervisory mechanisms, reduce and standardize the number of items that schools have to get administrative approval for, and provide legal protection for schools to fully exercise autonomy and assume the corresponding responsibilities” (CCCPC and the State Council 2010).

The CCCPC’s *Decision on Several Major Issues Concerning Comprehensively Deepening Reform* (《中共中央关于全面深化改革若干重大问题的决定》) was passed at the Third Plenary Session of the 18th CCCPC held in 2013. It proposed promoting modernization of the state’s governance system and capacity. The document also mandated the reform and development of the education field, which included “in-depth promotion of the separation between supervision, operation, and evaluation; expansion of provincial governments’ rights to coordinate education and the promotion of school autonomy; and improvement of schools’ internal governance structure” (CCCPC 2013). In 2015, the Ministry of Education (MOE) issued *Several Opinions by the MOE on Promoting ESOE Separation and Facilitating the Transformation of Government Functions* (《教育部关于深入推进教育管办评分离 促进政府职能转变的若干意见》). The document highlighted that in China’s current education system, “there exists the phenomena of overexertion of authority, failure to execute duties, and misplaced focus in the ways the government supervises education, while the mechanism for independent development and self-discipline of schools is not fully developed, and social participation in education governance and evaluation is insufficient (MOE 2015b). After clarifying the relationship between the government, schools, and the society regarding authority and responsibilities, the MOE will implement and expand the school autonomy program to the experimental and promotion stages. The proposal aims to achieve the strategic goals for education governance by 2020. These included “the government supervising by law, schools operating autonomously by law, and various strata of society participating and supervising by law, so as to achieve a new setup for public governance of education.” In 2015, the MOE introduced pilot reform projects to test the separation of educational supervision, operation, and evaluation (ESOE).² During the process, some provinces, regions, and cities

²The ESOE pilot reform projects were categorized into comprehensive or individual projects. Institutions involved in the former category included the Beijing’s Dongcheng Education Commission, Shanghai Municipal Education Commission, Wuxi Municipal Education Bureau, Zhejiang Province’s Department of Education, Qingdao Municipal Education Bureau, Chongqing Jiangjin People’s Government, Chengdu Municipal Education Bureau, and Karamay Municipal Education Bureau. The individual projects were implemented at the Wulanchabu Municipal Education Bureau, Shenyang Municipal Education Bureau, Foshan Shone Education Bureau, and Northwest University. They focused on the themes of “increasing efforts to simplify approval procedure and decentralize power while strengthening and improving the governmental service

separately organized local pilot reform tasks by making reference to national pilot reform projects. The author of the paper participated in and tracked the work carried out by some national and local pilot reform projects for school autonomy. The study was undertaken by the author from an independent, third-party perspective and based on rational observations and reviews of various policies implemented by local governments to promote ESOE separation and reform, as well as reforms toward school autonomy in related pilot projects. The aim was to clarify the current problems and challenges faced by schools when operating autonomously in compliance with the law and to explore the systems and mechanisms for promoting and guaranteeing the autonomy of elementary and secondary schools.

3.2 Research Design

In the setting of the comprehensive education reform of China, this study focused on the national ESOE pilot reform areas while still taking into account education governance and reform practice of school autonomy in the rest of the country. It investigated, observed, and analyzed the relevant policies and its implementation in practice.

3.2.1 *Conceptualizing School Autonomy*

China's understanding of school autonomy gradually deepened over the past three decades. In 1985, the leading group for drafting the document on reforming the central education system revealed through research that "the government's authority is too centralized when it comes to the management system for schools, such that the latter cannot become independent and autonomous entities that run schools. Schools possess neither external might nor internal motivation and lack overall vitality" (CCCPC 1985; Hu 2008). This marked the beginning of advocacy for school autonomy. The *Outline of the National Plan for Medium- and Long-term Education Reform and Development (2010–2020)* published in 2010 defined the establishment of a modern school system as "running schools in compliance with the law, autonomous management, democratic supervision, and social participation" (CCCPC and the State Council 2010).

mechanism," "improving the supervisory and control mechanisms and ensuring proper interim and ex post supervision," "having a sound operating mechanism for the independent development and self-discipline of schools," "promoting de-administration of the education field and removing principals from the administrative rankings," "improving schools' operating mechanisms that are open to the public," and "exploring third-party evaluations and allowing the education evaluation results to fully perform their incentivizing and constraining role" (MOE 2015a, b, c).

In the *Outline for Promoting the Law-based School Governance in an All-around Way* promulgated by the MOE in 2012, it was stated that “the goal is to build a modern school system, implement and standardize school autonomy, and form a structure in which the government supervises schools in compliance with the law, schools are operated and managed autonomously in compliance with the law, teachers provide lessons in compliance with the law, and society supports and participates in school management in compliance with the law” (MOE 2012). These statements not only affirmed the autonomy of schools in their operations but also established a structural framework for the rights and boundaries of that autonomy.

Basic education is implemented through the elementary and secondary schools, which are entitled to various legal rights to operate. *The Education Law of the People's Republic of China* (《中华人民共和国教育法》) was recently revised in December 2015, which stipulates in Article 29 that the rights of schools and other educational institutions include (a) autonomous management in accordance with their charters, (b) organizing and implementing educational and teaching activities, (c) recruiting students or other educatees, (d) managing the student registration and implementing due rewards or punishments, (e) issuing the corresponding academic certificates to the educatees, (f) hiring teachers and other staff and implementing due rewards or punishments, (g) managing and using the institution's facilities and funds, (h) rejecting the illegal interference by any organization or individual in the conducting of educational and teaching activities, and (i) all other rights stipulated by the laws and regulations (National People's Congress 2015).

In summary, autonomous operations of schools include the following at the level of education laws and policies.

3.2.1.1 Confirming that Schools Operating in Compliance with the Law Have the Status of Being the Legal Entities of Autonomy

School autonomy in compliance with the law means that schools' rights to autonomous operations are sacred and inviolable by law. Accordingly, the structure in which the government performs the “three-in-one” roles of being the manager, organizer, and evaluator of education must be dismantled. The relationship between the government and schools must be redetermined to ensure that the former transfers the operation right to the latter, so that schools can own the identity of organizers for autonomous operations in compliance with the law. To realize school autonomy, it is necessary to reach a consensus on the governance concept of a “government with limited liabilities,” have a systematic legal and policy system for regulation and protection, and ensure the law-based administration of government.

3.2.1.2 Enforcing of the Schools' Rights to Operate Autonomously Under the Legal and Institutional Framework

Ensuring that schools have the rights to autonomous operations in accordance with the law not only is a political appeal for the democratization of education but also is indispensable for the daily operation of the school. Objectively, schools and teachers need to have more professional decision-making powers to maintain their professionalism and to cope with the variability and complexity of educational tasks and contents. When schools and teachers are entitled to greater autonomy in the field of teaching, it is a respect to the education and teaching principles and the professionalism of teachers. School autonomy ensures that principals and teachers can exercise free professional autonomy on the basis that the mandatory laws of education are being respected. This will fill schools with the spirit of freedom and restore the fundamental nature of school education—to educate and cultivate human beings.

3.2.1.3 Delegating the Direct Responsibilities to Teach and Educate to Schools

During the establishment and development of the education system, the primary and direct educational process is that of teaching and learning between teachers and students. That is also the process through which educational responsibilities are fulfilled. With the universalization of compulsory education and scaling up of high schools, as well as expansion in the scale of education and development of modern social management, the indirect management (indirect educational processes) of educational organizations that are beyond actual teaching relationships has become increasingly complicated. Such indirect educational processes reflect the “production relationship” of education. When the indirect educational processes become overly complicated, it will become more difficult for the direct education process, which reflects the “productivity” level of education, to spark vigor and vitality. To truly have school autonomy means to fundamentally remove all obstacles in the institutional mechanism that hinder the development of educational “productivity,” so that schools and teachers can assume their rightful educational responsibilities while fully exercising their rights to run schools autonomously. This also means that it is vital for schools to establish a sound operating mechanism for self-discipline even while they are developing autonomously. Only in this way the corresponding educational responsibilities can be effectively shouldered.

3.2.2 *Theoretical Framework*

A study on education reform with school autonomy as the core theme must be situated within the theoretical framework of education governance. Governance is a concept that involves dynamic development. The word was derived from the ancient Greek word *kubernaein* (*kubernáo*) and has various connotations including steering, guiding, and manipulating. In thirteenth-century France, the concept was taken as an equivalent to ruling, government, and leading (Gaudin 2002). Since the birth of modern nations, there have been three main methods of managing state and public affairs: by the government, the market, or public governance (Song and Fangfei 2010). In the 1990s, some political scientists and management scholars advocated the use of “governance” in place of “government” in view of the failure by the market and governments to allocate social resources (Yu 1999). By then, the connotations of the concept of governance had undergone substantial changes. James N. Rosenau made a distinction between the concepts of “government” and “governance.” Although both concepts point to purposeful behaviors, the former is backed by formal authority, while the latter is based on common goals (Rosenau 1992: 4). To a very large extent, governance is regarded as the making of adjustments to an interdependent relationship without the premise of political authority (Rosenau 1999). The Commission on Global Governance (CGG) considers governance to be the sum of many methods by which various public or private institutions manage their common affairs (CGG 1995: 23). In other words, the entities being ruled must be the society’s public institutions. Pertaining to governments, the subject of governance can be either a public or private institution, or even a partnership between both types of institutions. For governing, the process is based on the government’s authority. It is a single-dimensional, top-down management action on social and public affairs executed through the formulation and implementation of policies. On the other hand, governance refers to an equal, consultative, and cooperative partnership between the government, social organizations, and public and private institutions. It is a process where social affairs, social organizations, and social life are regulated and managed in accordance with the law, eventually leading to the maximization of public benefits. The true nature of governance is built upon market principles, public interests, and collaboration arising from a shared vision. Its operational mechanism does not depend on the government’s authority but, rather, that of the cooperative network. The dimensions of its authority are interactive and pluralistic.

Education governance is an important component of a country’s governance. Governance-based education reform aims to change the past practice of managing educational activities by governmental authority. Instead, decentralization by the government leads to the establishment of a collaborative relationship between the government, society, and schools. A sound horizontal and interministerial mechanism for consultation and communication must be set up among the government’s various internal departments involved in educational affairs (including those in charge of internal matters, organization, formulation, personnel, and finance) and

the various EADs. The focus of the mechanism is to optimize the processing of educational matters.

With the step-by-step delegation of education management authority, a sound and unimpeded two-way communication mechanism must be established between the different levels of governments (central, provincial, municipal, and county) and the EADs. A mechanism for managing the inventories of responsibilities, powers, and negative lists must also be implemented to clarify the powers and relationships between the government, schools, and social organizations. This will simplify approval procedures and decentralize powers, leading to delegation of the corresponding education management authority to all levels and types of schools, and its transference to the corresponding specialized social education organizations. The next step would be to formulate macroscopic plans for education development and set professional education standards to guide the development of regional and school education.

A service-oriented government is created by the combination of three approaches: (a) simplifying approval procedures and decentralizing powers, (b) streamlining the government and delegating its authorities, and (c) optimizing services. This improves the government's capacity at education services, thus providing schools with quality education services while concurrently strengthening interim and ex post supervision.

The core issue for schools is how they should operate autonomously in compliance with the law. At the level of internal governance, it is important to formulate the school charter and use it as the basis to standardize schools' internal rules and regulations. The various relationships must be optimized to improve the governance structure, so that teachers and parents can participate in the operation of the schools. In addition, self-oversight and self-evaluation within schools and the transparency in school matters must be improved. These will lead to the formation of a sound social reporting system for school affairs, which in turn facilitates social supervision and evaluation (Fig. 3.1).

3.2.3 Research Design

To track and analyze the practice of ESOE separation all over the country, we first conducted a systematic analysis of policy documents by all levels of the government and the EADs. We then studied the experiences and feelings of the educational stakeholders involved in the reform to have an in-depth grasp of the education reform measures that were actually implemented, as well as their effectiveness. The main research methods adopted in this study are elaborated below.

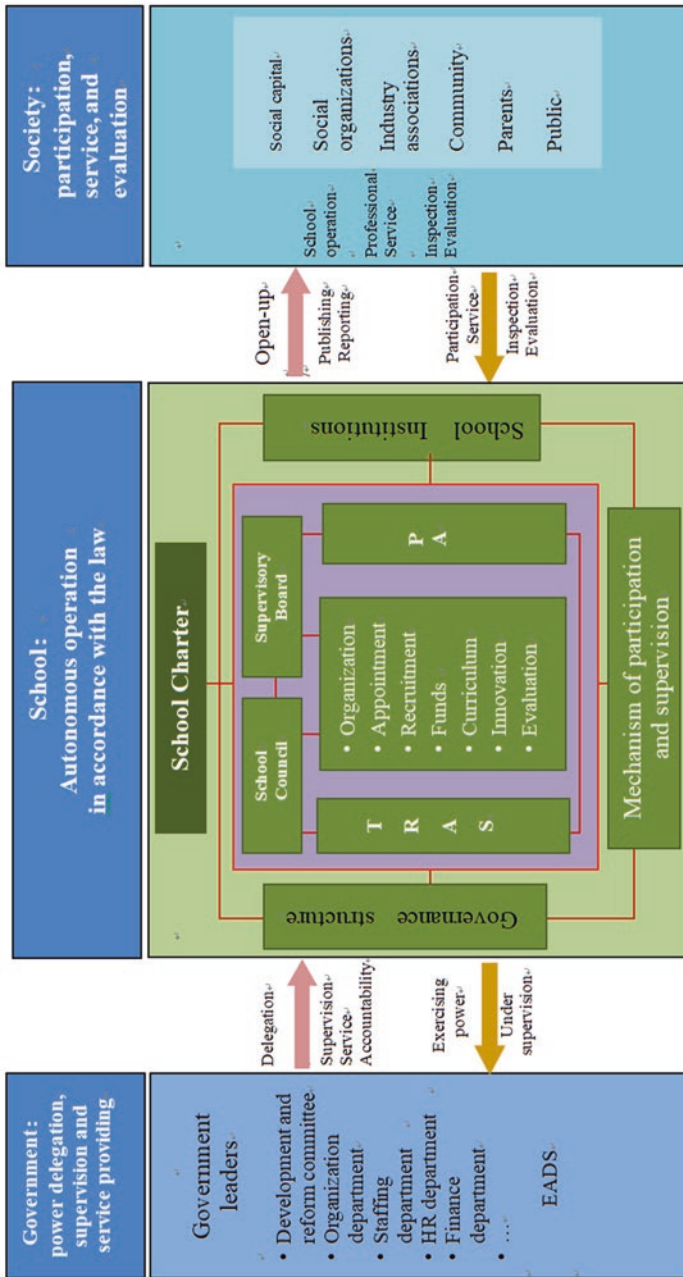


Fig. 3.1 The model for schools' autonomous operations in compliance with the law

3.2.3.1 Content Analysis of Policy Documents

All national and local policy documents related to the modernization of education governance, ESOE separation, establishment of a modern school system, delegation of approval rights for education administration, and comprehensive education reform were extensively collected, collated, and analyzed. There were more than twenty documents on educational laws and policies at the state level (State Council and MOE), eighty documents on educational policies at the local level (provincial governments and their education departments), and one hundred and twenty documents on pilot projects for national and provincial education reforms.

3.2.3.2 Questionnaire Survey

More than 2000 copies of questionnaires were distributed to education administration leaders and principals of elementary and secondary schools in Shanghai, Beijing, Jiangsu, Guangdong, Sichuan, Shandong, and Henan. A total of 1890 valid questionnaires were retrieved, representing a 94.5% return rate.

3.2.3.3 Interviews

We conducted both group interviews and one-to-one interviews in Pudong, Minhang, Putuo, Xuhui, and other districts of Shanghai, Wuxi in Jiangsu Province, Beijing, Shenzhen and Shunde in Guangdong Province, Chengdu in Sichuan Province, Qingdao in Shandong Province, and Zhengzhou in Henan Province. The interview subjects were government leaders in charge of education, leaders of educational administration organizations, heads of comprehensive education reform projects, educational management officials, and principals of elementary schools, junior and senior high schools, and 9-year integrated schools (Table 3.1).

3.3 Research Findings

There was an extensive promotion of the reform in education governance throughout the country according to the spirit of the following documents: (a) *Outline of the National Plan for Medium- and Long-term Education Reform and Development (2010–2020)* (2010), (b) the MOE's *Outline for Promoting the Law-based School Governance in an All-around Way* (《全面推进依法治校实施纲要》) (2012), (c) *CCCPC's Decision on Several Major Issues Concerning Comprehensively Deepening Reform* (2013), (d) *Several Opinions by the MOE on Promoting ESOE Separation and Facilitating the Transformation of Government Functions* (2015), and (e) the MOE's *Outline for the Implementation of Law-based Education Governance (2016–2020)* (《依法治教实施纲要 (2016–2020年)》) (2016). The

Table 3.1 Research participants

Role	Interviews		Questionnaires	
	No.	%	No.	%
<i>Education administration officials</i>				
• Government leaders in charge of education	6	3.13	58	3.07
• Heads of comprehensive education reform projects	5	2.60		
• Directors general of education bureaus	12	6.25		
• General staff of education bureaus	28	14.58	273	14.45
<i>School principals</i>				
• Schools for compulsory education	16	8.33	196	10.37
• Senior high schools	27	14.06	286	15.13
<i>Teacher representatives</i>				
• Schools for compulsory education	32	16.67	397	21.01
• Senior high schools	66	34.38	680	35.97
Total	192	100.00	1890	100.00

MOE proposed pilot projects for ESOE separation in 2015, which were fully launched at various pilot institutions that same year. Simultaneously, theoretical and practical research projects on the topic of ESOE separation were launched as well. Earmarked provinces and cities also promoted pilot reform projects in areas under their jurisdiction. Over the next few years, efforts were put in by schools around the country to continuously implement reforms and promote school autonomy. In consequence, schools' rights to autonomy has been primarily guaranteed, and the operating mechanism for school autonomy has been established and improved in a sustained manner. However, the reform process still encountered great difficulties and challenges.

3.3.1 Continuous Promotion of the Reform Toward School Autonomy

Implementation of education governance and school autonomy in the various regions of China mainly focused on the following aspects.

3.3.1.1 Gradual Promotion of the List-Based Management to Preliminarily Clarify the Rights and Responsibilities of the Government and Schools

The foundation of list-based management consists of the various rights, responsibilities, and public accountability. It is a management process that clarifies the boundaries of authority; makes distinct the rights and responsibilities; regulates the relationships between the government and the market, the government and the

society, and the government and citizens; and enhances government efficiency and effectiveness (Wang 2014). The MOE's *Outline for the Implementation of Law-based Education Governance (2016–2020)* stated that it would “actively promote the legislation of local laws and regulations for education” and “formulate targeted and localized regulations to support the various localities in combining the characteristics and practical needs of local education development.” If education laws and regulations have yet to be set up for certain aspects, the MOE encouraged all localities to conduct trials and promote education reform through education legislation, so as to accumulate experiences for education legislation at the state level (MOE 2016).

In our study, we found that some regions had enacted education laws and regulations to promote and guarantee school autonomy on the basis of reform practice and experiment. An example was Qingdao, which has made great efforts since 2014 to promote the reform of school operations in accordance with the law and explore the establishment of a modern school system. It has compiled a list of ten school autonomy-related items from four aspects: managing human resources, finances, materials, and education and teaching. The rights included in the list have been fully delegated to the public schools (Table 3.2) (General Office of Qingdao Municipal People's Government 2014). In addition, the Qingdao Municipal People's Government promulgated the *Measures for the Management of Elementary and Secondary Schools in Qingdao*. Issued in February 2017, this government order clearly defines the ten items that the EADs have delegated to schools (Qingdao Municipal People's Government 2017). During the process of reform practice, some regions appointed the EADs to coordinate the education management activities of the relevant functional departments in the government. For example, it was stipulated in the *Measures for the Management of Elementary and Secondary Schools in Qingdao* that “departments conducting reviews, appraisals, assessments, competitions, inspections, and other activities related to elementary and secondary schools shall submit their plans for the following year to their respective EADs before the end of November each year, and the EADs shall compile the catalogues and issue them to schools under their jurisdiction at the beginning of the following year” (Qingdao Municipal People's Government 2017). This effectively guaranteed the educational functions of the government's relevant functional departments and, at the same time, relieved schools from the similar competitions and inspections from different governmental departments so that they can concentrate on the operations of the school.

Faced with the predicaments of a surging number of children of school age, an educational business that is yet to be developed, and the established number of teachers being limited, some local EADs (such as the Sichuan Xindu Education Bureau) took the initiative to carry out reform experiments. With the current challenges as the starting point, they undertook institutional innovations in human resource and financial management. Specifically, they hired teachers independently via the registration mechanism on the basis of taking the responsibility of managing their own financial resources (Li 2016) and therefore have achieved desirable outcomes in operating their schools.

Table 3.2 Ten items for which authority had been delegated to schools by the Qingdao Municipal Government

Item	Schools' rights
<i>Management of human resources</i>	
• Appointment of vice principals	Principals are allowed to appoint the established number of vice principals in accordance with the prescribed procedures
• Internal organization and selection of cadres	Schools are to set up their own internal institutions up to the established number and in accordance with the prescribed procedures. The established number of cadres shall be selected from the school faculty that possess the requisite qualifications
• Recruitment of teachers	Schools can independently recruit talents from special professions and outstanding graduates of key institutions to fill vacancies under the established recruitment program
• Appointment and evaluation of teachers	For teaching positions under the rated establishment, schools have the right to appoint and evaluate teachers in accordance with the relevant regulations on human resource management
• Teachers' professional development	Schools can arrange for their staff to participate in local and foreign educational study trips, learning and training courses, academic conferences, and other activities in accordance with the prescribed procedures
<i>Management of financial and infrastructural projects</i>	
• Budget management	Schools are permitted to carry out budget management in accordance with the EADs' budget requirements. Approval from the EADs is no longer required for specific expense items that are within the schools' budget
• Use of special funds	Schools are delegated the authority to make use of the district-level special education funds for infrastructural repairs, purchases of school equipment and library books, and other projects
• Infrastructural maintenance projects	Such projects are to be undertaken according to the regulations, with the schools managing the projects in accordance with the law and the EDAs participating in the supervision and cutover in accordance with the law. A public hearing system is to be introduced to ensure the rationality, facility, fairness, and justness of the projects
<i>Management of education and teaching</i>	
• Rights to educate and teach	The schedule of courses and duration of each class can be adjusted appropriately as long as the total hours of classes per week remain unchanged. The final schedule is to be submitted for approval and filing according to the regulations
• Developing schools' unique characteristics	Schools can independently determine their own characteristics and cultural development in accordance with the developmental laws and actual situations. Experimental projects and evaluation projects can be applied for independently

Source: General Office of Qingdao Municipal People's Government (2014). For suggestions on further promoting the establishment of a modern school system, please refer to Qingdao Municipality General Office Document 4 of 2014 dated May 14, 2014. <http://www.qdedu.gov.cn/n32561912/n32561915/170120112807376625.html>

3.3.1.2 Timely Introduction of Local Education Laws and Regulations to Ensure that Schools Operate Autonomously in Compliance with the Law

In the *Outline for the Implementation of Law-based Education Governance (2016–2020)*, the MOE stated that it would “actively promote the legislation of local laws and regulations for education” and “formulate targeted and localized regulations to support the various localities in combining the characteristics and practical needs of local education development” (MOE 2016). The MOE’s approach of law-based school operating was stated earlier in Sect. 3.3.1.1.

The Measures for the Management of Elementary and Secondary Schools in Qingdao specified the norms for dealing with difficult human resource, financial, and property issues that had plagued school governance for many years. For example, regulations were set regarding the appointment of vice principals by principals, and schools are now able to independently recruit professional and high-level talents to fill vacancies, as well as set up internal institutions and elect the persons in charge of those institutions in compliance with the regulations (Qingdao Municipal People’s Government 2017). Such issues had been troubling the autonomous operations of elementary and secondary schools for a long time.

3.3.1.3 Setting Up of School Charters to Support the Sustainable Development of a Modern School System

School charters serve as the “constitution” of schools and are important bases for school autonomy. All this while, elementary and secondary schools in China were operating either without charters or with a charter of bad design. Besides, existing charter regulations have not been complied with or under effective supervision (Chen et al. 2011). To address these problems, the MOE issued the *Outline for Promoting the Law-based School Governance in an All-around Way* in 2012, which mandated “all schools have their respective charter till 2015” (MOE 2012). Separately, *Several Opinions by the MOE on Promoting ESOE Separation and Facilitating the Transformation of Government Functions* required that “all levels and types of schools must set up their own school charter in accordance with the law to reflect their individual characteristics, creating an overall structure in which all schools have their respective charters. Elementary and secondary schools within the same school district can set up a shared charter” (MOE 2015b).

During the process of promoting the establishment of a modern school system, all the localities fully followed the requirement of “one school, one charter” and explored the establishment of a modern school system through the setting up of charters. Our research found that almost all local EDAs had issued notices mandating that elementary and secondary schools prepare school charters and had conducted follow-up inspections and reviews. The reviews of school charters throughout the country have been basically completed by December 2016, and having school

charters set up was an important step toward the establishment of a modern school system.

3.3.1.4 Continuous Improvement of Schools' Internal Governance Structures to Gradually Form a Mechanism with Democratic Decision-Making and Stakeholders' Engagement in the Management

On the topic of “improving schools’ internal governance structure,” *Several Opinions by the MOE on Promoting ESOE Separation and Facilitating the Transformation of Government Functions* pointed out that it is necessary to “further strengthen and improve the party’s governance over schools” and “allow primary-level party organizations to perform their role as a political core.” The principal accountability system of general elementary and middle schools should be adhered to and improved, with “elementary and middle schools establishing school boards consisting of school leaders, teachers, students, and parents and community representatives. The boards shall propose suggestions and give advice on school charters, development plans, annual work reports, major education and teaching reforms, and other decisions on important issues concerning students, parents, and community work, so as to improve democratic decision-making procedures” (MOE 2015b). In practice, most schools emphasized the traditional organizational structures including the Academic Affairs Office, Moral Education Office (Student Affairs Office), and General Affairs Office. They also attached importance to the organizational establishment of and participation mechanism for the School Council, Teachers’ Representatives Assembly (TRA), and Parent Association (PA).

We found that some schools approached the practice of reform and development by discarding the traditional management model and establishing a governance structure that balances decision-making, implementation, and supervisory powers. The Zhantan Middle School in Sichuan’s Xindu District had experimented a system with the principal in charge and guided by the School Council. The internal governance structure was a tripartite consisting of the School Council, the School Board, and the Supervisory Board. This was in accordance with the principle of balancing the decision-making, implementation, and supervisory powers (Zhantan Middle School 2016). The School Council is the school’s highest decision-making authority and performs the decision-making function. The School Board implements the resolutions of the School Council, arranges the school’s general affairs, and enjoys the rights to set up internal institutions, manage human resource, use funds, and manage teaching and education. It reports to the School Council regularly and accepts the supervision by the Supervisory Board. The Supervisory Board is the school’s supervisory agency: it inspects and supervises the school’s operations in compliance with the law and also reviews, supervises, and notarizes the school’s financial status in terms of its revenues and expenditures.

3.3.2 *Analysis of Issues in the Reform Toward School Autonomy*

After an overall review of the reform toward education governance and school autonomy implemented during this period, many persistent problems and challenges were identified. This was due to the complexity of the education system itself and that of the interests of various stakeholders involved in education reform.

3.3.2.1 **Imbalance Between the Local Governments and EADs in Willingness and Reform Efforts to Simplify Approval Procedures and Decentralize Powers**

The government and EADs must first simplify approval procedures and decentralize powers before ESOE separation can be implemented and a modern education governance system can be established. We found that 40% of respondents from the EADs were found to lack a complete understanding of (a) the conceptual differences between “education management” based on ruling and “education governance” based on pluralistic participation, (b) the significance and value of decentralizing the rights to operate schools in promoting the development of school autonomy, and (c) the education governance model based on list-based management (Table 3.3).

Table 3.3 Delegation of school autonomy as understood by different stakeholders

Item		Education bureaus		School principal
		Directors general	General staff	
1	Lack of a national-level unified standard for authority delegation	89.9	82.7	73.6
2	Lack of related legislation to enforce the delegation	95.8	78.8	70.4
3	Delegation was in accordance with the superiors' requirements	90.6	88.7	81.4
4	Delegation was done in other areas in the region	88.6	83.2	78.8
5	Delegation was based on other regions' practices	80.8	88.6	66.3
6	EADs refused to delegate	23.6	38.7	88.3
7	EADs dared not delegate	34.7	85.2	77.8
8	Reform was indispensable due to issues faced during education development	77.6	68.5	87.6
9	Demand for delegation by school principals was strong	60.3	58.6	88.9
10	Delegation was to facilitate the real autonomous development of schools	70.7	66.9	98.3
11	Principals lacked the awareness, ability, and responsibility for school autonomy	70.6	86.6	25.8

The response “delegation of school autonomy was based on superiors’ requirements” from the interviewees implied that the subordinates feel they have to follow the directions from their superiors, as well as their helplessness when faced with the requirement to undertake reform. This sense of helplessness was also manifested in the lack of relevant legal basis for simplification of approval procedures and decentralization of powers within the country’s educational legal system. Since there was no unified standard for the delegation of authority, including the actual powers to be delegated and the extent of delegation, the local EADs inevitably veered toward over-cautiousness. There was also concern because the governance system and mechanism involving multiagency participation that is needed after decentralization have yet to be perfected. In some localities, the leaders in education did not have confidence in schools being able and responsible to operate autonomously and, thus, dared not delegate or take action. Intriguingly, there was a contrast between school principals and education bureau staff (the directors general and middle-level cadres) in their respective understanding of “EADs refused to delegate” and “EADs dared not delegate.” As a result, some regions chose to adopt a wait-and-see attitude and “borrowed” the practices of other regions when undertaking reform measures. Consequently, the reform toward simplifying approval procedures and decentralizing powers ended up almost formalistic or the list of rights being largely similar in its format and contents. In addition, list-based management existed in name but not in practice, making it difficult to achieve true school autonomy.

3.3.2.2 Intergovernmental Relations Affected the Education Governance Reform Process

Intergovernmental relations refer to the vertical and horizontal relationships within the government, as well as between the governments of different regions. For the same region, it mainly involves horizontal intergovernmental relations between internal departments of the same level. Intergovernmental relations also refer to the relationships of power allocation and interest distribution between different governments (Xie 2000). The EADs are the main departments responsible for education development in each region. However, there are many other government departments responsible for managing education affairs, including the development and reform committees and other departments in charge of organizing, staffing³, human resource, and finance.

The findings by American scholar Deil S. Wright indicate that during the actual operating process of government affairs, intergovernmental relationships have the characteristics of being “interpersonal” and “policy-based” (Wright 1982). The latter characteristic is in play when the powers and responsibilities of individual departments are clearly defined; on the contrary, when such boundaries are not

³ Staffing departments are departments which are responsible for the regulations of staff quotas and corresponding positions and salaries.

clear, the interpersonal relationship will be in play. Xigui Li, principal of the Beijing No. 11 School and former director general of the Shandong Weifang Education Bureau, believed that schools do not have the decision-making powers over items for which authority had been delegated. The EADs do not have much say either. Most of the powers lie within the government departments that oversee human resource, finance, and development and reform, such that the EADs have no powers left to delegate. “The teachers wanted by the school for its operations have to be recruited by the human resource department, teachers’ salaries have to be issued by the finance department, and even evaluation of teachers’ professional titles have to be managed by the supervising department. The schools have become the outsiders” (Yu and Yi 2013).

We found that most of the factors affecting schools’ autonomous operations, which included the appointment (employment) of school leaders, teachers’ quota and their appointment, teachers’ promotion in professional and technical positions, use of school funds, and teachers’ performance-related pay system, were closely related to the departments in charge of organizing, staffing, human resource, and finance. Among the local EAD leaders and staff interviewed who are responsible for actual education and administrative affairs, 66.8% and 85.7%, respectively, believed that communication between the EADs and the aforementioned functional departments was not effective and it was not uncommon for them to pass the buck. This was due to various factors including the departments’ nature of work and the scope of rights and responsibilities. For example, many school-based curricula involving activities and practice has been introduced in line with continuous curriculum and teaching reforms. However, calculations of the teachers’ quota are still based on the traditional teacher–student ratio, which became a constraint. Many local directors general of education bureaus lamented during the survey that “many important educational resources supposedly provided to the EDAs did not really happen” (Table 3.4). As a result, 45% of the elementary and middle school principals and teachers in our survey had doubts over the government’s real efforts to decentralize education authority.

Other than departments directly in charge of education administration and operation (such as the education bureau, supervisory office, and teaching and research office), many other government departments and their subordinate units are also responsible for inspecting and supervising elementary and middle schools as part of their operational functions. These include the General Office, Cultural and Ethical Progress Commission Office, and the departments in charge of human resource, finance, urban construction, transportation, health care, epidemic prevention, food safety, environmental protection, greening, public security, fire safety, and comprehensive law enforcement. These management activities cause substantial interferences to schools’ daily teaching and education activities (Fig. 3.2).

Table 3.4 Barriers of school autonomy

Item	Education Bureaus		School principal
	Directors general	General staff	
1 Administrative tendency when appointing (employing) school leaders	78.8	67.4	92.6
2 Staff quota fails to take into consideration the school's reform and developmental needs	95.2	78.8	86.4
3 Schools cannot recruit teachers independently	78.5	75.4	90.4
4 Quantitative tendency in teacher's promotion	66.7	68.2	82.6
5 Management of education funds is not conducive to the school's development	23.6	58.7	88.3
6 Performance-related pay is not effective at motivating teachers to have better performance	68.8	42.8	89.5
7 Many important educational resources supposedly provided by the EDAs are not in their real control	70.6	86.6	67.8
8 Over-interference in schools by the relevant government departments	82.1	74.8	91.3

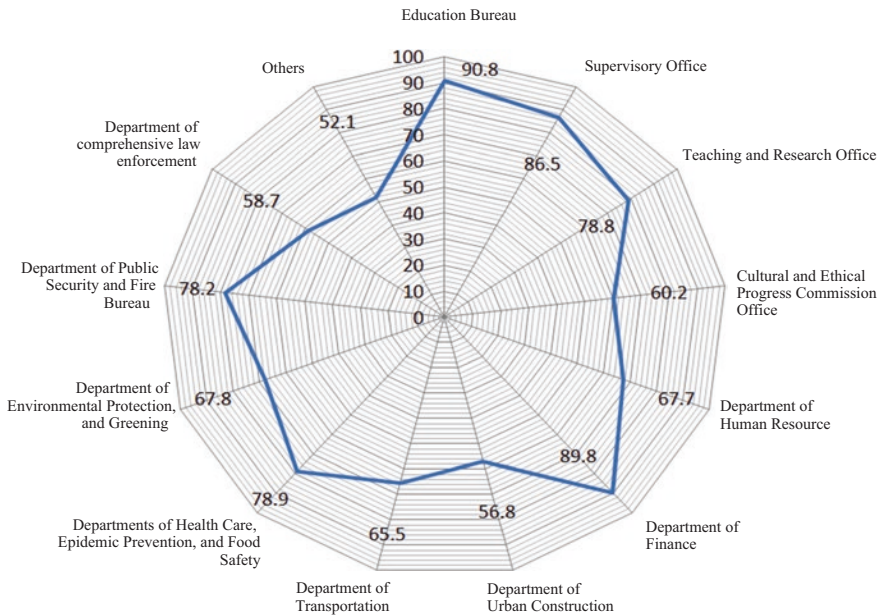


Fig. 3.2 Regular inspections on schools conducted by various government departments

3.3.2.3 Schools' High Expectations for School Autonomy

Some regions and schools still have an erroneous understanding of school governance or imprecise comprehension of the concept. They mostly understood school autonomy from the aspects of wanting and having authority but ignored the aspects of using and limiting authority, as well as the accountability of running schools autonomously. We found in the study that there was a need to further cultivate the awareness of and ability in managing school autonomy and democratic participation (Fig. 3.3). A minority of principals have been accustomed to the traditional model of management by the government and felt that the pressure and responsibility of running schools would increase after decentralization and with school autonomy. This shows that similar to the promotion of modernizing the school governance system, it is equally urgent to promote the schools' capacity at modernized governance and to enhance principals' imitativeness of school autonomy and their leadership.

In terms of the authority associated with school autonomy, school principals indicated high expectations that they wanted to be granted the powers to do the following: (a) the selection and appointment of vice principals, department heads, and teachers; (b) the construction of the organizations within the school; (c) use of funds; (d) development of curriculum materials; (e) teaching reform and innovation; (f) teachers' evaluation, salary, and incentives; and (g) student recruitment and management (the compulsory education sector had lower expectations for recruitment rights, which might be related to the policy of neighborhood admission for compulsory education). Their expectations were particularly high for the independent establishment of internal organizations, selection and recruitment of department heads and teachers, and use of school funds. Comparing compulsory education schools and general high schools, the latter was found to have higher expectations for school autonomy.

3.3.2.4 Tendency of Homogenization in School Charters

During the reform experiment, the various localities actively promoted the establishment of school charters in accordance with the MOE's requirement for "the formation of an overall structure by 2015 in which all schools have their respective charters" (MOE 2012). This task seemed to have been completed. However, after detailed observation of the process by which schools in various localities drafted their charters, it was evident that shortcuts were taken in many places to comply with the MOE's requirement before the deadline. Specifically, "charter templates" were issued by the EADs to all levels and types of schools, and the latter simply had to fill in the blanks. Consequently, many of the "school charter" documents collected by this study appeared similar and formatted. For the majority of the schools, the chapter structure and content descriptions of their charters were highly alike and even completely the same. The purposes, visions, and values of the school are seldom individualized. There were also the inevitable phenomena of noncompliance

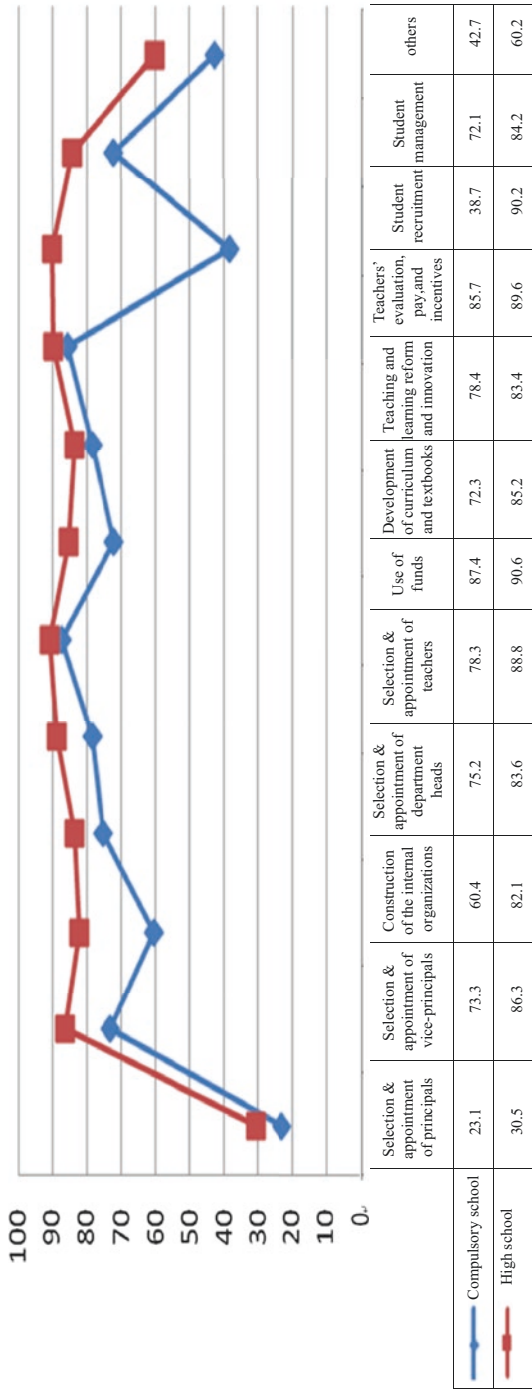


Fig. 3.3 Schools' expectations of delegated authority under school autonomy

with the charters during actual school operations and charters being too difficult to comply with.

Objectively, the process of charter establishment by Chinese schools was different from the normal process of having a charter drawn up before the school was founded. Given that the process was done in reverse, the taking of shortcuts to have the charters prepared was understandable. However, from the perspective of the schools' long-term operations, the charters need to be further improved. In fact, as school reform continued, some regions and schools gained a deeper understanding of the important role of the charter in school governance. Realizing that their original charters were prepared in haste, they used the "one school, one charter" requirement as the foundation to create version 2.0 of their school charters. The new charters are based on ESOE separation and then used as the legal basis for school reform and development.

3.3.2.5 Optimization Needed for Schools' Internal Governance Structures

The survey found that there was no consistent cognition and understanding regarding "schools' internal governance structure" (Fig. 3.4). Most of them focused on three aspects: the construction of the school's organization, schools' institutional system, and the distribution and balance of powers. The specific items included school management system, school management institutions, school organizational

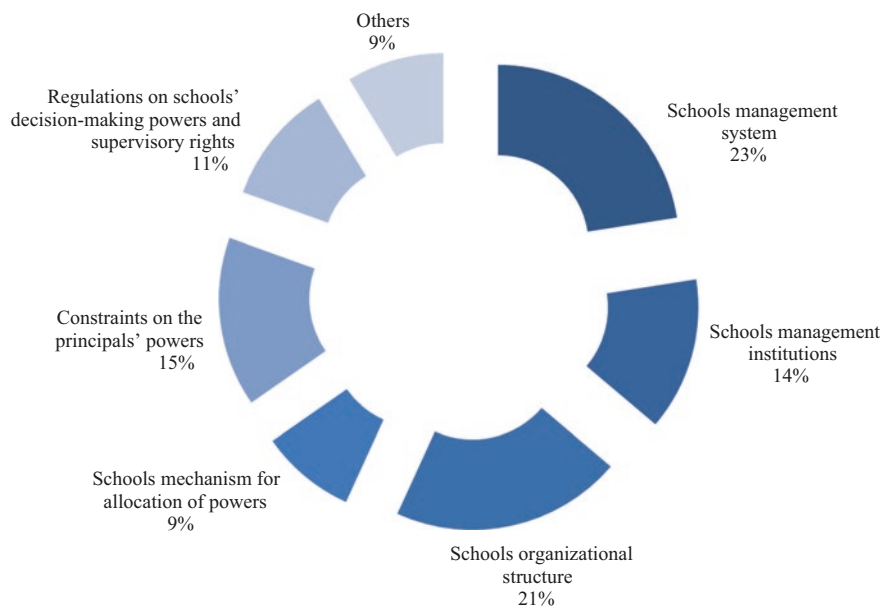


Fig. 3.4 Different understandings of schools' "internal governance structure as a juridical person"

structure, mechanism for allocating school powers, constraints on the principals' powers, and regulations on schools' decision-making powers and supervisory rights.

At the implementation level, most schools emphasized the traditional organizational structures including the Academic Affairs Office, Moral Education Office (Student Affairs Office), and General Affairs Office. They also attached importance to the organizational establishment of and participation mechanism for the School Council, Teachers' Representatives Assembly (TRA), and Parent Association (PA). In reality, for most schools, the decision-making powers lie in the party-government office and party-government joint meeting, both of which are formed by the party-government leaders and middle-level officials in schools. The principals are the main decision-maker.

The schools of almost all principals and teachers surveyed by this study hold annual conferences with the respective TRAs, which play a decisive role in matters closely related to the teachers such as their welfare and pay. This role of the TRAs has also been widely recognized. However, 45% of the teachers surveyed remained doubtful over the TRAs' role in decision-making for major school affairs. Although 52% of the teachers believed that communication with parents should be strengthened, they did not think highly of the role of the parents' committees in school governance. In short, schools' existing internal governance structures are still not suited to meet the needs for school governance. There is a need to further clarify the respective rights and responsibilities of the related organizations and systems, as well as their relationships.

3.3.2.6 Improvements Needed for Schools' Supervisory and Evaluation Mechanisms

An important approach of the school supervisory mechanism is to make the school affairs known to the public. This survey found that currently, the main contents being disclosed by elementary and middle schools included educational goals, budgeting and use of education funds, school fees, development planning, curriculum and teaching reform, admission policies and recruitment work, allocation of educational resources, education and teaching quality, major construction projects and the related tender/bidding, teachers' appraisal and evaluation, and welfare distribution for teachers. However, discrepancies were found between the school affairs disclosed by compulsory education schools and those by high schools (Fig. 3.5).

During the interviews, 38% of the teachers commented that publishing school affairs did not have the expected supervisory effect. In recent years, there had been an increase in the awareness and actual level of publishing school affairs among Chinese elementary and middle schools. Nevertheless, some school leaders still did not have a clear understanding of the topic. They emphasized publishing the results rather than the process of education, being open internally but not externally, being public during the time of inspections by higher-level departments but not at other times, and publishing information as mandated by the government but avoiding the release of information on major issues related to school reform and development.

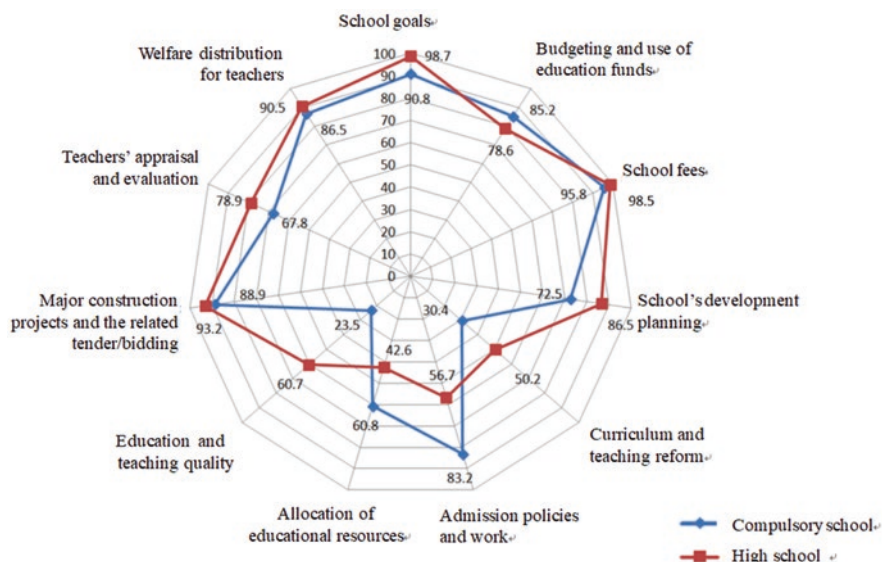


Fig. 3.5 Public information published by compulsory schools versus high schools

For some school, the information made public was scattered, while others were merely going through the motion. These findings unveiled the selectivity and formalism in the publishing of school affairs.

Of the teachers interviewed, 78% felt that schools' self-evaluation mechanisms were still lacking. Respectively, 85.7% of the EAD leaders and 69.3% of the school principals interviewed expressed the willingness to hand over some professional services and evaluation tasks to third-party social organizations for implementation. Approximately 30% of the respondents indicated that there was a strong demand for such services. Of the directors general of education bureaus interviewed, 87.7% reported that they mostly relied on the results of supervision and evaluation made by the departments for monitoring and supervising education quality.

Although 90% of the principals interviewed preferred to introduce third-party professional organizations for evaluating the quality of school education and the overall level of school operations, the fact remains that social organizations in China are not fully developed in terms of quantity and level of professionalism. Existing professional organizations lack quality, management experiences, and the capabilities to be entrusted by the government and schools and cannot meet the needs of education reform. Therefore, the respondents were generally concerned about the evaluation abilities of existing social organizations. In many places, the participation of social organizations in the education evaluation mechanism was still mostly through direct authorization by the EADs. The mechanism for social organizations to participate in educational services and evaluations through open competition needs to be improved.

3.4 Building and Improving the Governance Mechanism for School Autonomy

Regarding the future development of China's education reform, it was noted that the education governance mechanism based on cooperation among the government, schools, and society is still under ongoing construction and improvement. Correspondingly, the model for school autonomy under this education governance framework also needs to go through ongoing construction and improvement. For school autonomy to be authentic, it cannot deviate from the public purpose of education. The latter is in turn largely related to the moral leadership of the school principals (Keddie 2016). However, the success of education reform or lack thereof cannot be tied to the moral self-discipline of specific individuals. A complete set of institutional systems to guarantee the success are needed instead. Assuming that schools truly have the authority for autonomous operations, the obvious crux of the issue is how that authority is being used. To this end, it is necessary to establish and refine systematic mechanisms for the long-term governance of autonomous schools from various aspects, including school charter, institutional system, organizational structure, operating mechanism, evaluation, and assurance.

3.4.1 Establishing and Refining Pluralistic Governance Mechanisms Based on the School Charters to Ensure the Effective Use of Schools' Authority and Promote Schools' Autonomous Development

With the establishment and refinement of the education governance system, the government and the EADs have been gradually delegating to schools the authority to operate autonomously. The focus is how schools use this authority to run autonomously in accordance with the law. School charters should be used as the basis to optimize school's internal governance structure, increase capabilities at autonomous operations, and modernize their capacities at school governance. With autonomous decision-making and management, schools will ultimately achieve the goal of autonomous development.

3.4.1.1 Establishing Institutional Systems Based on the School Charters

The school charter is undoubtedly the legal basis for establishing a modern school system and promoting schools' sound and sustainable development. To establish and refine the school governance mechanism based on the school charter, the first step should be to ensure that the charter itself reflects the value of pluralistic participation in governance, which requires schools to seek improvement by examining the nature of their charters based on the concepts of modernizing the education

governance system, undertaking ESOE separation, operating autonomously in accordance with the law, and pluralistic participation. The text of a school's charter should be drafted, revised, and improved in accordance with its own situation and characteristics, with the aims of highlighting its educational philosophy, goals, and unique features. When that is done, the charter should be used to lead the school toward improving the institutional system for the school's autonomous management, rationalizing and improving its rules and regulations, and formulating or revising its various systems for democratic management, job responsibilities, and general management (Wan 2016).

The democratic management system mainly comprises the School Council system, TRA system, the Students' Representatives Assembly system, Parent Association system, Democratic Life Meeting system, teachers' evaluation system, and information publishing system. The job responsibilities system involves the roles and responsibilities, appraisal and evaluation, and salary systems of various personnel, including the school teachers, administrators, and teaching assistants. The general management system includes the administrative management system, education and teaching management system, student management system, school resources management system, school safety management system, and system for external cooperation and exchange. The organizational and procedural rules of the various internal institutions, as well as the management processes and operating procedures, must be established and refined to form a sound, standardized, and unified institutional system. This will ensure schools' autonomous operations.

3.4.1.2 Optimizing Schools' Internal Governance Structures Based on the School Charters

Objectively, the concept of school governance based on pluralistic participation requires that the EADs delegate autonomy to schools and, at the same time, improve the accountability system for principals of general elementary and middle schools; encourage and guide principals to transfer authority to teachers, students, parents, and the society; promote the setting up of a governance mechanism with pluralistic participation; improve the various systems, including the School Board, the School Council, TRA, Parent Association, and Community Education Committee; and gradually establish a school governance mechanism that involves teachers, parents, students, community representatives, and experts.

Based on sound scientific and democratic decision-making procedures, major affairs and decisions of the schools should routinely involve public participation, expert argumentation, risk assessment, review of legality, and collective inquiry. For items where discussion and approval by the School Council, TRA, and/or Parent Association are mandatory based on stipulated requirements, corresponding meetings should be organized and held for comments and suggestions before decisions are made by the principal's office. To this end, schools should explore forming the school councils comprising teachers, parents, community members, professionals, and student representatives, which will promote scientific and democratic decision-making.

Table 3.5 Schools' internal governance structure

Organization item	School Board ^a	School Council	TRA	Academic Committee	Parent Association	Supervisory Board
School charter	●	●	●	●		●
School's development plans	●	●	●	●	●	●
Teachers' salary and incentive plans	●	●	●			●
Major curriculum and teaching reform projects	●	●	●	●	●	●
School's finances	●	●	●			●
School's annual work plans	●	●	●		●	●
School's annual work reports	●	●	●		●	●
School's day-to-day management		●				
School's annual development reports	●	●	●	●	●	●

^aRefers only to schools that have a School Board/Supervisory Board; ●: Indicates correlation

Establishing a review mechanism for major decision-making, important contracts, and legality of documents will ensure that schools are run in accordance with the law. For the decision-making process, an authority matrix comprising different entities and departments should be set up, which will ensure that the roles played by the TRA, Parent Association, Student Association, and relevant community departments in school governance are effective and that the participation by all stakeholders in school governance is increased. Through the responsibility list, the rights, duties, and responsibilities of the various entities in different management affairs and matters will also be clarified. The setting up of autonomous organizations by teachers and students should be encouraged, which could be in different forms including appointing students as assistants to the principal, students and teachers acting as principals on duty for a week, and establishing teachers' or academic committees. It will promote autonomy of both the students and teachers (Table 3.5).

3.4.2 Establishing and Refining Supervision, Evaluation, and Accountability Systems for School Affairs with Pluralistic Participation to Strengthen Interim and Ex Post Supervision in Schools' Autonomous Operations in Compliance with the Law

During the process of autonomous operation in compliance with the law, schools voluntarily take the initiative to disclose the major events in the school operation to the public and accept the oversight from them. For the purpose of self-evaluation,

schools must also accept supervision from and evaluation by the government and professional organizations in the society. If any regulations are violated, or there is a lack of discipline during the schools' operations, the offending party must be made accountable according to the laws and regulations.

3.4.2.1 Establishing and Refining Systems for Social Reporting and Publishing School Affairs

In terms of the social significance of school governance, it is objectively necessary to establish and refine the systems for social reporting and publishing school affairs for the modernization of the education governance system. The real situation of schools' improvement, educational qualities, and school operation should be known to the public in a timely manner. Transparency in school governance and the conducting of education and teaching affairs should be improved so that the government, general public, parents, and other educational stakeholders have the proper basis and evidence to know, understand, supervise, and evaluate the capacity and quality of schools' operations. Therefore, during the process of autonomous operations in accordance with the law, schools are obliged to report to the public about their courses of action and the corresponding outcomes (Wang 2007).

In response to the aforementioned phenomena, the MOE issued in 2010 *Opinions on Promoting Information Transparency in Elementary and Secondary Schools* (MOE 2010), which systematically stipulated the contents, formats, and procedures for the publishing of school affairs. In terms of actual practice, Hong Kong began promoting the implementation of a social reporting system for schools in the 1990s (Pang 2006; Zhao 1998). Schools use social reports to disclose the relevant educational activities and performance indicators, so that the public and parents can supervise and evaluate schools on an informed basis. Hong Kong's related experiences on this practice provide us with meaningful implications.

For the future reform and development, schools should further explore the mechanisms and procedures for information transparency and social reporting. This is to be done concurrently with the strict implementation of the state's requirements to publish education-related information. When schools publish procedural and timely information on their development process at the right time, as well as regularly publish periodic and annual reports on that process, society can better understand schools' developmental tracks, experiences, and achievements. In the Internet and big data era, schools should actively explore the digital mechanism of publishing education-related information and take into account both online and offline scenarios, so that the public who is concerned about education can obtain the relevant information.

3.4.2.2 Establishing and Refining Pluralistic Evaluation Systems for Schools' Development

A powerful way to ensure autonomous operations of schools in accordance with the law is to supervise and evaluate their operational processes and their quality of education and teaching. This involves the gradual process of eliminating the use of a single administrative evaluation system for entities and a single academic (examination) score as the evaluation criterion. Hence, there should be the establishment and refinement of a pluralistic evaluation system based on schools' self-evaluation. The system should be guided by education supervision and evaluation and should strive to actively introduce professional evaluations done by social organizations.

The fundamental purpose of setting up evaluation mechanisms for schools' autonomous development is to stimulate their internal drive for self-monitoring and self-development. Therefore, it is necessary to move away from the past focus of improving the conditions for schools' operations and, instead, shift to developing schools' qualities. The development model must also evolve from being driven by external motivations to an autonomous development model with an internal impetus for growth. Schools' self-evaluation should be a continuous process of supervising and monitoring school education affairs that is mainly undertaken by the management team but with the engagement and participation of teachers, staff, students, parents, expert consultants, and other stakeholders.

From the practice of Scotland, we got the implication that schools' self-evaluation must focus on two questions: (a) how good are we now (the main strengths and developmental needs of teachers' work are to be distinguished from their impacts on students)?; (b) how good can we possibly be (Grek et al. 2010)? To develop a school evaluation indicator system, we should take the school's development plans as the starting point, the scientific and effective implementation of that plan as the foundation, and the degree to which the school's development goals has been achieved as the focus. This system highlights the leading role of schools during autonomous operations in accordance with the law and is a new evaluation mechanism combining schools' self-evaluation with external evaluation, schools' independent development, and pluralistic supervision and guidance. Self-evaluation and external evaluations use the schools' plans as the guide; teacher development as the foundation; student development as the core; teaching, learning, and education culture as the vehicle; organizational management as the guarantee; and planning and management, teacher development, education culture, teaching and learning, and student development as the foci.

Although the important role of education inspection in a pluralistic evaluation system cannot be denied when it pertains to a structure with ESOE separation, it should be noted that the functions and roles of education inspection in evaluation have undergone fundamental changes. The main task of inspection evaluation reform is to establish and refine an education inspection system that integrates the three aspects of inspection on administration, inspection on schools, and education monitoring. Evaluation by inspection is an important approach to strengthen the management of basic education and to promote the balanced and coordinated

development of basic education. With the functions of feedback, facilitation, identification, guidance, and supervision, the inspection process ensures that the government and EADs have a timely grasp of educational developments within the region and can ascertain that policies and regulations are being implemented. This leads to the timely discovery of problems, provision of feedback, and making of recommendations, thereby leading to the improvement of outcomes. Hence, it is necessary to strengthen the independence of education inspection on the one hand and properly handle the division of authority and responsibilities between the inspection departments and government departments on the other hand. Education inspection, as a part of evaluation, has an inherent and close relationship with the government and EADs and plays an important role of providing professional support and policy guidance in the process of the development of education standards by the government. Nevertheless, the professionalism of education inspection must be elevated. During the education quality monitoring process that is being extensively carried out, educational evidences and experience based on regional big data should be continuously accumulated so as to build a regional education evaluation database, which will effectively improve the scientific nature of education evaluation, as well as ensure inter-regional and inter-school educational equality.

Given that social organizations can perform various functions including participation in management, joint decision-making, professional support, check and balance on powers, and performance evaluation, the participation of social organizations in education should not be limited to the role of evaluation. It is important to actively cultivate social organizations and attract social forces to participate in the running of schools. When social organizations participate in the evaluation of school affairs, they assume the evaluative and supervisory roles and realize the check and balance of power. Social organizations can evaluate the quality of schools' education and teaching, schools' image, ethnics and professionalism of teachers, and even the principal's performance. Hence, they perform a supervisory role over schools' operational conducts and the executive abilities of schools' management teams. In this view, the role of third-party evaluation of education should be actively promoted, because it is critical for promoting and ensuring schools' independent development.

During the reform experiments, some regions have been aware of the importance for the government and schools to purchase professional support, monitoring, and evaluation services from social organizations (third-party organizations). For example, Shandong issued standards for third-party evaluation of education, while Shenzhen set up policies for the purchase of education services for the city's public elementary and secondary schools (Education Department of Shandong Province 2016; Office of Shenzhen People's Government 2016). An objective assessment of existing third-party organizations for education evaluation in China reveals the existence of issues including insufficient organizations, undesirable qualifications, and inadequate mechanisms for participation and evaluation. Substantial effort should be put into the cultivation of professional institutions (organizations) for education evaluation to help them advance their professional qualifications in terms of the technology, methods, and tools employed, as well as their capabilities to undertake

large-scale education evaluation and consulting services being transferred from the government.

In addition, the entry mechanism for social organizations to participate in evaluation should be further improved, as does the government's mechanism for purchasing professional services on education evaluation. When third-party organizations for education evaluation have a good mechanism for the independent implementation of evaluation and publishing of the corresponding results, they will be able to effectively perform the function of "public reviews" in comprehensive or specialized evaluations on items including the level of satisfaction with regional or school education, the professional development of teachers, curriculum leadership, and schools' overall quality of operation.

3.4.2.3 Establishing and Refining Accountability Systems for School Governance

The key to managing schools in accordance with the law is to implement strict law enforcement and strengthen schools' accountability on a legal basis. Accountability in education is a reward and punishment mechanism in which the educators' goal is to cultivate high-quality students, their personal responsibility is to fulfill their educational commitments to the public, their need is to pursue efficiency, and, ultimately, there must be accountability.

The *Outline of the National Plan for Medium- and Long-term Education Reform and Development (2010–2020)*, promulgated by China in 2010, stipulated the requirement for "improving the accountability mechanism for education" (CCCPC and the State Council 2010). The establishment and refinement of an accountability system for school education have become an indispensable component of schools' autonomy in accordance with the law. Based on the results of a pluralistic evaluation of a school's development, comparisons are made with national or local education standards such as the *Management Standards for Compulsory Education Schools* (MOE 2014), school charters, and progress attained relative to schools' phased development plans, with an aim to identify gaps and deficiencies in its development process, followed by the seeking of accountability for any major mistake or deficiency identified. In addition, the evaluation results are linked to the school's performance appraisal. For this process, we can draw implications from the United States' laws for chartered schools and their experience with the related accountability clauses, including the subject(s), methods, circumstances, and procedures for accountability (The Center for Education Reform 2015).⁴ After accountability has

⁴The relevant laws for chartered schools in the United States stipulate that various accountability methods can be used depending on the academic achievements of the students, serious violation of laws applicable to chartered schools, numerous actions that violate the charter, and serious and intentional actions that violate the civil service law as adjudicated by the chartered school licensor. The methods include cancellation or nonrenewal of charter, probation of charter qualification, and issue of warning certificates.

been addressed, the focus should be the corresponding improvement and development of the school, together with the establishment and refinement of scientific and standardized methods, procedures, and forms of accountability. When a scientific and rational accountability system has been formed, the school's sound development will be ensured and facilitated.

3.4.3 Establishing and Refining Schools' Legal Counsel and Remedy Systems to Support and Protect Their Rights to Autonomous Operations in Accordance with the Law

During the process of schools' autonomous operations in accordance with the law, all stakeholders including school leaders, teachers, and students will inevitably encounter various situations and obstacles. It is important to provide schools and the related personnel with the necessary legal support in terms of legal advice, counsel, and remedy. These are important protections for schools to maintain their rights to autonomous operations in accordance with the law, as well as the relevant individuals' rights.

3.4.3.1 Establishing and Refining Schools' Legal Counsel Systems

The *Outline for Promoting the Law-based School Governance in an All-around Way* mandated that elementary and secondary schools “should designate a specialist(s) to be responsible for the school's legal affairs and comprehensively promote the school's operations in accordance with the law. Schools with the resources may employ professional institutions or individuals as legal counsels to assist them in the handling of legal affairs” (MOE 2012). In the context of running schools in accordance with the law, the actual purpose for a school to hire legal counsels is to protect the legitimate rights and interests of the school itself, the teachers, students, and parents and to help schools avoid or mitigate legal risks through the legal counsels' provision of timely and professional advisory services.

The services of legal counsels include participating in activities of the school's arbitration committee; providing consultation to resolve the school's internal disputes; maintaining the school's overall legal rights (for teachers, staff, and students); representing the school in activities related to litigation, arbitration, and reconsideration; participating in legal argumentation when the school makes decisions; assisting the school to standardize the various rules and regulations; participating in the drafting and reviewing of contracts and agreements for the school's involvement in foreign-related activities and providing legal advices; assisting schools to conduct regular or ad hoc educational sessions on the rules of the laws and training on campus safety for faculty and students; and raising awareness of and ability to use the rules of the laws.

Depending on their respective situations, elementary and secondary schools can adopt different models to set up their own legal counsel system. One approach is that the EADs purchase the services and hire lawyers to serve as legal counsels and provide legal advice to all schools in the district under the EADs' jurisdiction. Another approach is for the schools to independently purchase services from law firms with the mutual support of the EADs and judicial departments. Schools will evaluate the law firms' services, and those that fail will be struck off the list of firms eligible for consideration by schools in the district. The third approach is for schools to independently appoint legal counsels or set up a specialized legal advisory body. This is suitable for schools with rich legal resources (such as schools affiliated with colleges and that can take advantage of the latter's professional legal resources) and schools whose scale of operation is large and that have high demands for legal services. During the process of establishing a legal counsel system, elementary and secondary schools can also set up their own legal counsel systems to standardize, supervise, and evaluate the work of the school's legal counsels.

3.4.3.2 Establishing and Refining Schools' Legal Remedy Systems

When the rights of a private party have been violated, it can seek legal remedy for the violated rights through legal procedures and means (Liang 2006). There are three main types of legal remedies in the field of education. The first type is legal remedies through arbitration and mediation, with legal remedy mainly implemented by the education system's internal institutions or nongovernmental organizations. The second type is legal remedies with administrative methods, which include administrative appeals, administrative reconsiderations, and administrative compensations. The third type is litigation: as long as the legal rights of a private party have been violated and the matter is under the jurisdiction of civil, criminal, or administrative litigation laws, it can obtain legal remedy through litigation.

It is necessary for schools to establish a legal remedy system to deal with the various internal disputes, including those between teachers and students, among students, and between parents and teachers (the schools). The first step is to form a mediation (arbitration) committee for internal disputes at the school or regional levels. The committee can include the school administrators, EADs, teachers, and representatives of other stakeholders and should emphasize the role of teachers, staff, students, parents, and professional legal personnel (legal counsels) in the mediation organization to negotiate and deal with school disputes. Next is establishing and refining the education appeal system. Unlike the education law which has provisions on students' scope for litigation, the appeal system is an internal remedy system with no restrictions in scope. If teachers or students do not agree with the results of a particular issue handled by the school, they can file an appeal to the EAD that oversees the school. This will force the EAD to conduct a supervisory review of the school's work, thereby achieving the effect of self-rectification within the school and the education system. Both are part of the education system's internal supervisory and corrective mechanism. If the problem cannot be resolved through these

internal channels, a party's legitimate rights and interests can still be protected through legal proceedings.

3.5 Conclusion

This study examined the issue of designing systems to promote and ensure schools' autonomous operations in compliance with the law from the schools' perspective. School autonomy is an integral component in the modernization of regional and national education governance systems. Schools are the main entities of education governance, and the keys to school autonomy are the development of a scientific and comprehensive school charter and the setting up of a pluralistic governance mechanism based on that charter. Having a social reporting system and publishing school affairs improve the transparency of school governance, while a pluralistic system to evaluate school development enables schools to combine the results of self-evaluation with those of administrative and social evaluations, thereby correctly identifying the problems affecting school development and achieving continuous improvement and development. An accountability system for school education is both a restriction and protection of schools' operating rights. A complete school legal counsel system provides professional legal support for school autonomy, while a school legal remedy system provides legal remedy for the school and teachers, students, and other relevant personnel. These systems ensure that schools use their rights rationally and that these rights are effectively limited in accordance with the law. Overall, the ecology for school education will be optimized, leading to improvements in the quality of school operations and the quality of education.

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Chapter 4

Teacher Education Policies in China Since the Mid-1990s



Congman Rao

Since the mid-1990s, teacher education in China has entered a new period of transformation, mirroring larger rapid societal development. Although quality improvement has been the theme of teacher education development in China since the mid-1990s, this period of more than 20 years can still be divided into three periods: the phase of system restructuring (from the mid-1990s to 2005), the phase of capacity building (from 2005 to 2016), and the phase of revitalization (since 2017). This chapter reviews the changes to the background, goals, content, and impacts in teacher education policies since the 1990s and then discusses its future development.

4.1 System Restructuring

4.1.1 Policy Background

4.1.1.1 The Full Range of Social Transformation

Social transformation during the period from the mid-1990s to 2005 shaped teacher education reform and development in China. There are three kinds of social transformation impacting teacher education in their own way.

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Transformation from a Planned Economy to a Market Economy

In the early 1990s, the Communist Party of China (CPC) proposed that the establishment of a socialist market economy should be the goal and direction for China's economic system reform. With the transformation of the economic system, the closed teacher education system that was suitable for the old, planned economic system increasingly showed its inadaptability. Social transformation accelerated the collapse of the old teacher education system; it also provided the impetus for the initiation and development of a new teacher education system.

Transformation from an Agricultural Society to an Industrial and Information Society

China has been experiencing a transformation from an agricultural society to an industrial society on the one hand, as well as the transformation from an industrial society to an information society at the same time. To meet the demands of an information, knowledge, and network-based society, the 16th National Congress of CPC in 2002 clearly set a target to construct a learning society, which brought up new requirements for teachers and teacher education. Standards of teacher quality and teacher education that were set in the early 1990s were clearly unable to meet this demand.

Transformation from a Rural and Poor Society to an Urban and Affluent Society

After the Reform and Opening-up of China, rapid economic growth resulted in an abrupt rise in the income and living standard of residents. The increase in national income and improvement in living standard meant, for example, that citizens could budget more for their children's education and that their demand for education would also increase. In addition, people's expectations of the quality of education became higher, and they became more demanding about schools and teachers. Given the crucial role of teachers in improving quality of education, reforming teacher education and improving teacher quality became a top priority of the education reform.

4.1.1.2 Quality-Oriented Basic Education Reform

China proposed and started to implement quality-oriented education in 1990s. To fully implement quality-oriented education, China began comprehensive, in-depth, and enduring curriculum reform. In June of 1999, the CPC Central Committee and the State Council of China issued *Decisions on Deepening Educational Reform and*

Promoting Quality-Oriented Education in an All-Round Way, which clearly defined the guidelines and fundamental strategies for the comprehensive promotion of quality-oriented education in China. This policy set the direction for constructing the Chinese education system in the twenty-first century (CPCCC and SC 1999). In 2001, the promulgation of the *Outline for Basic Education Curriculum Reform* by the Ministry of Education (MOE) started a new round of basic education curriculum reform in China (DTEMOE 2009: 219–223).

The basic education reform that moved from examination-oriented to quality-oriented education called for role-changing of school teachers to be designers of a student-friendly learning environment, organizers and facilitators, reflective and collaborative researchers, curriculum developers, and classroom managers, as well as disseminators of knowledge, guides, supervisors, and evaluators. Accordingly, teacher education needed to be changed to meet the new requirements, too. Thus, teacher education reform was focused on how to establish a new teacher education system that would be compatible with the transformation of quality-oriented education.

4.1.1.3 Moving Toward a Balanced Relationship Between Supply and Demand of School Teachers

China long suffered from a teacher shortage from 1949 to the 1990s. However, since the late 1990s, the relationship between the supply and demand of teachers has changed, mainly due to factors such as the national birth-control policy, expansion of higher education, and improvement of teachers' economic and social status. As a result, the teacher shortage was eased since the beginning of the twenty-first century, and the number of teachers in primary and junior high schools decreased gradually (Rao 2007).

4.1.2 Objective, Content, and Effect of the Policies

As a result of growing educational needs, the teacher education policies in China during the period from the mid-1990s to 2005 introduced teaching professionalization as a guiding concept, aimed to improve teacher quality and restructure the teacher education system.

4.1.2.1 Structural Reform of the Preservice Teacher Preparation System

The structural reform of teacher preparation included horizontal restructuring to open up teacher preparation system and vertical restructuring to upgrade all teacher preparation to college level (Rao 2007).

Opening-Up of Teacher Preparation System: Horizontal Restructuring

In China, teacher preparation from 1950 to the early 1990s was confined in a closed and exclusive system, in which specialized normal schools, colleges, and universities were the only legitimate institutions to prepare teachers. The mission of those institutions at that time was exclusively focused on teacher preparation. However, since the 1990s, many normal colleges and universities began to set up non-teacher education specialties or programs, striving to become comprehensive higher education institutions. According to incomplete statistics on the specialties in normal colleges and universities, by the end of 1990s, non-teacher education programs made up 50% of all specialties in most national normal universities (Rao 2013: 275). In addition to this establishment of non-teacher education programs, the wave of amalgamation of higher education institutions (HEIs) since the early 1990s has also had a major impact on the existing normal education system. From 1990 to July of 2005, a total of 115 higher normal colleges were merged with other HEIs or renamed as comprehensive colleges and universities. By July of 2005, the number of normal colleges and universities decreased from 290 to 153 (Yu 2010: 94–97).

The goal of Chinese teacher education reform policies since the 1990s was set to build a diversified and open teacher education system. The *Teachers Laws of the Peoples' Republic of China*, issued in 1993, specified graduates from non-normal colleges and universities are eligible to teach in primary and secondary schools or vocational schools. This broke the traditional monopoly of the normal universities and started a diversified and open teacher education system.

In 2001, *Decisions on Reform and Development of Basic Education* by the State Council (2001) and the *10th 5-year Plan for the Construction of the Teaching Force of Primary and Secondary Schools* by the MOE (2001) were launched and proposed further improvements to the opening-up of teacher education system to include comprehensive universities and normal colleges and universities as providers of teacher education. These abovementioned policies and regulations established the direction toward diversification and openness of teacher education system at the national policy level (DTEMOE Ed. 2009). According to the Department of Teacher Education of the MOE, by 2005, the number of non-normal colleges and universities providing teacher education at the undergraduate level reached 324, with graduates of teacher education accounting for 40% of all graduates of teacher education (DTEMOE 2006). Non-normal colleges and universities had become an important provider in Chinese teacher education.

Upgrading All Teacher Education to the Higher Education Level: Vertical Restructuring

In China, preservice teacher preparation was undertaken in three-level institutions with differentiated missions after 1949. Four-year normal universities and colleges prepare teachers working in senior high schools and vocational schools, graduates from 2- to 3-year junior normal colleges work in junior high schools, and secondary

normal schools prepare teachers in primary schools and kindergartens. Since the end of the twentieth century, along with the implementation of the policies and measures to upgrade teachers' degrees, the teacher preparation system itself moved gradually into a process of upgrading. *Decisions on Reform and Development of Basic Education* stated clearly that "teacher education restructuring should be upgraded to realize the transition gradually from [a] three-level teacher preparation system to [a] two-level teacher preparation system" (DTEMOE. Ed 2009). The *10th 5-year Plan for Construction of the Teaching Force of Primary and Secondary Schools* of 2001 asserted that "the restructuring of the layouts, levels, and types of normal schools, colleges, and universities should be upgraded to actualize the reasonable integration of normal schools, colleges, and universities ... making the level of teacher education institutions transit timely from 'three levels' to 'two levels'" (ibid., pp. 251–257). The National Working Conference on Teacher Education held in 2002 clearly advocated that the three-level teacher education system, consisting of junior college, undergraduate, and graduate levels (referred to as "a new three-level"), should be enacted gradually to fully upgrade school teachers' educational credentials.

The reform to upgrade all teacher education to the higher education level made some progress. According to the national education statistics, China's 4-year normal colleges and universities increased from 87 to 96 from 1999 to 2005; junior normal colleges decreased from 140 to 58 (including 17 newly built ones), and secondary normal schools decreased from 815 to 228 (MOE 2010).

The upgrading of all teacher education to the higher education level laid a foundation for the quality improvement of teacher education. However, merely upgrading teacher education to that level was not enough to ensure the improvement of teacher education quality. When this upgrade took place, carrying out corresponding design reform that is based on the requirements of professional education has proven indispensable. It is therefore worth exploring the extent of the notion of professional education was integrated organically into the process of upgrading teacher education in China during this phase.

4.1.2.2 Construction of a Lifelong Learning System for Teachers

Teachers are expected to be lifelong learners and to lead a lifelong learning (Guan 2004). Based on such an understanding, it was regarded as an important goal for teacher education reform and development in China to construct a lifelong learning system for teachers. The concept of lifelong education focuses on the reorganization and restructuring of the entire education system based on vertical and horizontal integration; these are essential to the reorganization of the teacher education system in China.

Continuum: Vertical Integration

Vertical integration refers to establishing a coherent and integrated lifelong teacher education institution, which replaces the separated but functionally undifferentiated preservice, induction, and in-service education institutions. The preservice and in-

service teacher education systems in China were historically separated into two independent fields. Preservice teacher education was implemented in general normal education institutions, while in-service education was mainly undertaken in adult education institutions such as teacher training schools and institutes of education. These two kinds of institutions carried out their own duties separately. In the 1990s, the shortcomings and deficiencies of the separated system emerged in the following aspects. First, there were no communication or interchange between preservice and in-service education institutions, resulting in the issue of discontinued and unpractical teaching content. Second, in-service training institutions failed to deliver satisfactory training when compared with preservice training institutions. Third, there was a waste of educational resources due to duplicated allocation between preservice and in-service education institutions (Zhao 2000).

To solve these problems, as early as 1993, Shanghai began to integrate teacher education when the Shanghai Institute of Education and Shanghai Second Institute of Education were merged into East China Normal University to form the College of Continuing Education. Such reform of integrating teacher education institutions received support from the MOE and spread nationwide, particularly in the beginning of the twenty-first century. Normal universities and colleges designated professional colleges or departments for in-service training of school teachers. There were 265 provincial and district institutes of education in 1990. With the merger of HEIs, most of these were merged into normal education institutions and other HEIs, with only 64 provincial and district institutes remaining in 2005 (MOE 2010).

The reform of teacher education integration in China during this phase was in rapid development and yielded a good effect on institutional integration. However, this was not the ultimate goal because the highest priority has been the functional integration of preservice and in-service teacher education. To ensure the effective integration of teacher education, it is necessary to establish a role differentiation structure informed by lifelong learning theory that scopes what should be done and what can be achieved during the preservice and in-service phases (Zhang and Rao 2002). The goal of substantial integration of teacher education cannot be achieved without a clear structure of role differentiation among various teacher education institutions. On the contrary, the in-service training of teachers runs the risk of being belittled in general HEIs, especially in research universities.

Networking: Horizontal Integration

Horizontal integration refers to utilizing Internet to establish a lifelong learning system for teacher development by connecting the existing various opportunities and resources and overcoming geographical constraints. At the turn of the twenty-first century, based on information technology, a designated national teacher education network was built to provide distance teacher education. One salient example of such integration is the *Program of the National Union of Teacher Education Networks* launched by the MOE in 2003. This system integrated preser-

vice and in-service education as well as the systems of teacher education institutions, satellite television, radio networks, and the Internet. It enabled selected high-quality teacher education resources to be co-constructed and widely shared across the country (DTEMOE Ed. 2009: 612–616). The networking of teacher education created favorable conditions for building a lifelong learning system where teachers can learn anytime, anywhere. However, the mechanisms for role differentiation and institutional collaboration among the main bodies in the network have not been fully established.

4.2 Capacity Building

4.2.1 Policy Background

4.2.1.1 The National Strategy for Constructing an Innovative Country and Building a Harmonious Society

Not long after entering the new century, China took independent innovation and the construction of an innovative country as one of the major strategic decisions to build a prosperous society in all respects. The National Conference of Science and Technology, held in 2006, issued the *Guidelines of the National Program for the Medium- and Long-Term Scientific and Technological Development (2006–2020)* (State Council 2010), which proposed a developmental strategy of independent innovation and the construction of an innovative country. To build an innovative country of a large pool of innovative talents, teacher quality matters. Therefore, how to cultivate high-quality teachers to meet the needs of building an innovative country became a prioritized issue in teacher education.

Almost at the same time, the Fourth Plenary Session of the 16th CPC Central Committee set forth a historic task of building a harmonious socialist society for the first time in 2004. In 2006, the Sixth Plenary Session of the 16th CPC Central Committee issued the *Decisions on Major Issues on Building the Harmonious Socialist Society*. In such a new context, the previously held and tested principle of “giving priority to efficiency with due consideration to equity,” was challenged and gave way to equity principle. It was widely believed since then that social equity and justice featured a harmonious society and should become a core value for public policy.

Dual Tasks of Improving Education Quality and Promoting Educational Equity

Entering the new century, it has become a major contradiction in the field of Chinese education that limited high-quality educational resources cannot satisfy the increasing demands of the public for the high-quality education. China is facing two important practical problems in education development: first, how to con-

tinuously improve education quality while moderately enlarging its scale and, second, how to allocate limited high-quality educational resources scientifically and rationally during the long-term process of education quality improvement. Consequently, two important tasks for the development of Chinese education were set to improve education quality and promote educational equity (Zhong 2010). The *Guidelines of the National Program for Medium- and Long-Term Educational Reform and Development (2010–2020)* (hereinafter referred to as *Program Guidelines*), issued in 2010, proposed to favorably allocate public resources to the poor and rural regions so as to narrow the gap between rural and urban education. Thus, the teacher education policy was reoriented and prioritized toward ensuring sufficient and quality teachers in the underdeveloped areas during this phase.

Structural Surplus of School Teachers and Moving Toward Enhanced Professionalism

The relationship between supply and demand of school teachers has significantly influenced the reform and development of teacher education. After 2005, teacher oversupply appeared. For example, in 2008, there were 765,000 teacher education program graduates (including 303,000 undergraduates, 243,000 junior college graduates, and 219,000 secondary normal school graduates) and 171,000 graduates from non-teacher education programs who got teacher certificates through the teacher certification examination. This adds up to a total of 936,000 teacher candidates. However, new teachers recruited that year were 250,000, accounting for only 26.7% of the total graduates (Zhong 2010).

Paradoxically, such oversupply implies a structural shortage of certain subject teachers and high-quality teachers. The structural shortage of school teachers is mainly reflected in three areas: a shortage of high school teachers in the context of the rapid development of high school education; a shortage of teachers of some subjects, such as foreign language, music, physical education, and art; and a shortage of teachers in the west, rural, and minority areas due to unbalanced economic development. The sharp quality contradiction indicates that teachers' overall quality and professionalism have failed to meet the needs of educational development and that there is an urgent need of improvement (Zhong 2010).

4.2.1.2 Objectives, Contents, and Effects of the Policies

Since about 2005, due to the aforementioned background, China's teacher education policy shifted its focus from system restructuring to capacity building, aiming at the quality improvement of teacher education and education equity. The capacity building was guided by teaching professionalization, including optimization of teacher resource allocation and rural teacher enhancement.

Setting Standards: Construction of a Quality Assurance System for Teacher Education

Standards are the foundation of quality management and the basis for quality control as well. In 2004, the MOE began to develop standards of teacher education and promulgated *Teacher Education Curriculum Standards (trial)* in 2011 (MOE 2011), which shapes teacher education institutions in curriculum design, teaching materials development, delivery, and evaluation. *Accreditation Standards for Teacher Education Programs (trial)* were promulgated in 2014, which guides accreditation and quality evaluation of teacher education programs.

Improving Practice: Promoting Practice-Oriented Teacher Education

The integration of theory and practice is essential to teacher education as professional education. However, during the reform process since the 1990s, teaching practice of student teachers has been undermined by decreasing interests of schools to accept student teachers for their teaching practice, financial shortage for teaching practice, and insufficient opportunities for student teaching practice. Moreover, sufficient guidance and mentoring for student teachers in the field was lacking at that time (Zhou 1997; Ren et al. 1998).

In 2007, the MOE issued *Opinions on Vigorously Promoting Student Teachers' Teaching Practice by Volunteer Teaching*, which for the first time put forward in a policy that “normal universities and colleges should organize the seniors of teacher education programs to practice teaching in primary and secondary schools for no less than one semester according to local circumstances” and suggested “volunteer teaching” as “an important mechanism to promote the reform of teaching practice in teacher education” (MOE 2007). However, in the implementation, although the teaching practice opportunities for student teachers have been guaranteed through “volunteer teaching,” the quality of guidance for the students’ teaching practice cannot be guaranteed in most cases, which strongly affects the quality of teaching practice.

Opinions on Strengthening the Construction of the Teaching Force, issued by the State Council in 2012, and *Opinions on Implementing Excellent Teacher Preparation Programs*, issued by the Ministry of Education in 2014, reemphasized teaching practice of no less than one semester and proposed “to establish teacher education partnership between HEIs, local governments, and schools” and “Dual Mentoring System” in teaching practice.

As MOE stated in the *Teacher Education Curriculum Standards (trial)*, “practice-oriented” was one of the three basic ideas of teacher education curriculum standards. What the policies intended to strengthen was not only teaching practice but also practice-oriented teacher education reform. Unfortunately, as MOE stated in *Opinions on Strengthening Teaching Practice of Teacher Students* in 2016, although the Ministry of Education continued to require HEIs to strengthen teaching practice and to implement practice-oriented teacher preparation, its effectiveness has not yet

been fully demonstrated, with teaching practice still being a weak link in teacher preparation (MOE 2016). To further promote practice-oriented teacher education, MOE issued *Opinions on Strengthening Teaching Practice of Teacher Students*, drawing a comprehensive design for the teaching practice of teacher students from aspects of objective, content, form, guidance, assessment, base, fund, etc.

4.2.1.3 Degree Upgrade: Expanding Graduate-Level Teacher Education

It is an international trend to vigorously develop postgraduate-level teacher education (Sato 2015: 10; Nasukawa and Watanabe 2014: 57–146; Xu 2008). After upgrading all teacher education to the higher education level, China began to increasingly develop postgraduate teacher education. As early as in 1996, China commenced its pilot reform in postgraduate teacher education under the framework of professional degree education (i.e., the Master of Education degree). The MOE issued *Opinions on How to Carry out the Work of Cultivating Full-Time Professional Degree Postgraduate Students* on March 19, 2009, and decided then to expand the scale of recruitment of new graduates as full-time professional degree students (MOE 2009). According to this document, the Master of Education programs (hereinafter referred to as “MEd. programs”) began to shift from recruiting only in-service school teachers and educational administrators to recruiting both new graduates and in-service educational staff. The programs also shifted from only offering part-time education to offering both part-time and full-time education (MOE 2009). Therefore, MEd. programs developed at a rapid pace. Before 2007, there were 49 HEIs offering MEd. programs, and the number increased to 142 by the end of 2016. The enrollment number of part-time MEd. programs, that was less than 200 students in 1997, increased to 11,000 per year in 2005–2009 and was at 8000–10,000 per year in 2010–2014. The enrollment numbers for full-time programs were 3896 students in 2009, 8092 in 2012, and 14,537 in 2016 (Secretariat of National Council of Professional Degrees for Education 2016).

Full-time MEd. programs in China were initiated within the background of the state’s strategic plan with a purpose of developing professional degree education as well as enhancing degree levels of teacher education. However, there are following issues undermining the quality of the MEd. programs: (1) time conflicts of in-service teachers as part-time students and (2) the shortage of teacher educators in HEIs, especially in the field of subject teaching (Zhou 2015).

4.2.1.4 Improving the System: Reforming the Teacher Certification System

The teacher certification system, as an occupational access system of the teaching profession, is a systemic guarantee of the open teacher preparation system. China’s teacher certification system was gradually established after the *Law of Teachers* was

promulgated in 1993, stipulating the state implements teacher certification system. The State Council issued *The Regulations of Teacher Certification* in 1995, and then the Ministry of Education promulgated the *Measures for Implementation of Regulations of Teacher Certification* in 2000. In 2001, the teacher certification system entered the full implementation stage. However, with its actual implementation, there emerged problems such as a low threshold requirement for education background, a nonstandard examination system, and a lifelong valid teacher qualification.

The *Program Guidelines* issued in 2010 proposed building a system including national standards, provincial examinations, and county recruitment for the entry and management of teacher certificates (The State Council 2010), as well as a regular teacher certificate registration system. Later, the MOE started a pilot reform of teacher certification examinations and regular registration in 2011 in Zhejiang and Hubei provinces and extended to 15 provinces in 2014 (MOE 2014a, b, c). In the pilot program, there were three changes, i.e., (1) any candidate regardless of their previous educational background should sit for teacher certification written examination; (2) graduates from the teacher education institutions are not exempted from such examination; and (3) regular certificate registration system is mandated to all every 5 years, including the current in-service teachers.

The effect of the pilot reform of teacher certification system showed that by tightening entry standards to the teaching profession, and introducing teacher certificate registration, the pool of quality teachers was enlarged, and the existing teachers were revitalized (Liu and Zhang 2014; Liu and Zhu 2015; Chen 2018).

However, some challenges emerged along the reform. For example, the validity of the examination was questioned if it alone was sufficient to judge candidates' professional competencies as teachers, and whether this practice was in line with the spirit of teaching professionalization (Liu and Zhang 2014; Liu and Zhu 2015; Chen 2018). In addition, other concerns emerged about whether the requirement of teacher certificate registration every 5-year was appropriate and whether it caused interference in the daily teaching and professional development of teachers (Liu and Zhang 2014; Liu and Zhu 2015; Chen 2018).

4.2.1.5 Alleviating Poverty Through Education: Strengthening the Construction of the Rural Teaching Force

Building a rural teaching force has long been an extremely difficult task and is the weak point in the construction of the teaching force. Teacher education is regarded as an important approach to promote educational equity. Therefore, three policy measures were adopted to strengthen the construction of the rural teaching force and their teacher education.

Creation and Implementation of the Free Teacher Education Policy

In 2007, with a purpose of encouraging and attracting excellent college graduates to become lifelong educators in especially underdeveloped areas like the Midwest or rural areas, the Central government created and financially supported free teacher education (FTE) programs in the six national normal universities. According to statistics, 52,000 FTE students graduated from six national normal universities in 2012–2016, and 96.5% of the graduates went to work in schools abiding by the contracts and 90.3% went to the Midwest (Huang 2017). Later, in response to the emerging problems during the FTE policy implementation, the MOE adjusted the coverage and responsible institutions, including more local normal universities to carry out the training. By 2017, FTE policy was implemented at local normal universities in 28 provinces, producing about 41,000 FTE graduates every year to teach in rural schools (Huang 2017).

Implementation of Designated MEd. Scheme for Rural Teachers

The MOE launched the *Rural MEd. Scheme* in 2004, selecting some excellent graduates each year from several HEIs as candidates of the *Rural MEd. Scheme*. Those candidates were required to have 3-year teaching experiences in underdeveloped areas and rural schools. The study mode of the program was part-time online learning for the first 3 years and then in the 4th year full-time on-campus learning in the universities where the candidates were graduated. By 2014, the *Rural MEd. Scheme* attracted a total of 8881 undergraduates to teach in rural schools in underdeveloped areas, which to some extent eased the shortage of teacher leaders known as “backbone teachers” in rural schools. However, it also met with problems in student recruitment, arranging employment, raising funds, quality assurance, and higher turnover rates after graduation (Zhou et al. 2008; Yang 2011).

Implementation of “National Training Programs” for Teachers and Principals. The “National Training Programs for teachers and principals” launched by the Central government in 2010 and 2014 aimed to enhance the overall quality of school teachers, especially those in rural areas. By 2013, the government invested 4.25 billion Yuan to train 4.93 million in-service teachers, of whom 4.73 million were rural school teachers (MOE 2014c). In 2014, the government invested 2.15 billion Yuan to training all rural school teachers of compulsory education in the Midwest (MOE 2014c). The primary objective of the National Training Programs for principals is to train a group of leaders who carried out quality-oriented education and promote the reform and development of basic education in rural areas, especially in the remote and underdeveloped areas. The implementation of the National Training Programs improved the professionalism of school teachers, especially those in rural areas in the Midwest (Li and Yang 2018; Wang 2017). However, there still existed the problems associated with the effectiveness of the

training, such as an unreasonable arrangement of the training time, lack of relevance of training content, and relatively simplified training modes (Wang 2017, 2018).

4.3 Revitalization

The year of 2017 marked a new stage to revitalize teacher education in China, because the MOE mentioned this on various important occasions and began to plan and design policy measures addressing this goal.

On August 25, 2017, the MOE convened a “National Working Conference on Revitalizing Teacher Education and Constructing the Teaching Force” in Changchun and highlighted the issue of revitalizing teacher education. On September 6, 2017, Huang Wei, Deputy Director of the Department of Teachers’ Affairs, MOE, made a speech entitled “Revitalizing Teacher Education for Education Modernization” at the “Forum on Teacher Development of China—Celebrating the 33rd Teacher’s Day” that was held by the Central Committee of China Association for Promoting Democracy. This event stressed once again the necessity of creating a new situation for teacher education revitalization.

In addition, the reports or speeches by the leading officials from the MOE on these two occasions demonstrated that to strengthen and promote quality teacher education, the MOE, at present and for some time to come, will act in accordance with the Chinese Communist Party Central Committee’s overall plan for comprehensively promoting the reform and construction of the teaching force in the new era through *The Action Plan for Teacher Education Revitalization*. The MOE will also act on the following objectives for quality enhancement of teacher education: (1) to highlight teacher professional ethics educations, (2) to address equity through preservice and in-service teacher education, (3) to vigorously promote supply-side structural reform of teacher education, and (4) to build a high-level teacher education system (MOE 2017a; Huang 2017).

As an important measure to construct a high-level teacher education system, the MOE issued *Measures for the Implementation of Teacher Education Program Accreditation in General Higher Education Institutions (Interim)* (hereinafter referred to as *Accreditation Measures*) in October, 2017 (MOE 2017b). The *Accreditation Measures*, which are based on the basic ideas of “student-centeredness, output-orientation and continuous improvement,” creates a three-level monitoring and accreditation system for teacher education programs. In accordance with its work arrangement, the MOE decided to start the accreditation of teacher education programs from 2018.

According to *The Key Points for the Work of the Department of Teachers Affairs in 2018* (DTAMOE 2018), the *Opinions on Deepening the Reform of the Teaching Force Construction in the New Era in an All-Round Way* (hereinafter referred to as *Opinions on the Teaching Force*) (CPCCC and SC 2018) will be promulgated in

2018 to deepen the reform of the existing teaching force, and the *Action Plan for Teacher Education Revitalization* is to be promulgated and carried out to promote teacher education revitalization. These two documents will provide an overall vision and blueprint for the teacher education revitalization in China at present and for the time to come.

On January 20, 2018, the CPC Central Committee and the State Council jointly issued *Opinions on the Teaching Force*. Based on the understanding of the extreme significance of work concerned with teachers' affairs, the *Opinions on the Teaching Force* focuses on the objectives and tasks for the next 5 years and envisions long-term development through 2035. It also provides overall arrangements for deepening the reform of the existing teaching force through comprehensively strengthening the construction of teachers' ethics and virtue, enhancing the status of teacher education, deepening the comprehensive reform of teacher management, continually improving the status and treatment of teachers, and strengthening the Party's leadership over work related to teacher affairs.

The *Opinions on the Teaching Force* attaches great importance to the improvement of the teachers' status and treatment, noting that to achieve educational development it is essential to enhance teacher quality and steadily improve teachers' status and treatment simultaneously. To improve teachers' political, social, and professional status, the *Opinions on the Teaching Force* presents specific measures such as “[improvement of] the long-term linkage mechanism of school teachers' salaries” and proposes that “the actual income levels of local civil servants will be taken into the overall consideration when approving the total amount of school teacher's performance salary”.

In addition to these measures to improve the status of school teachers, *Opinions on the Teaching Force* also presents other objectives such as “to support normal colleges and universities more, and to encourage well-established, qualified high-level comprehensive universities with willingness to provide teacher education programs” and “to upgrade teacher education to a higher level and promote supply-side structural reform of teacher preparation so as to improve the supply of quality teachers resources”(CPCCC and SC 2018). These requirements demonstrate the objective of making teacher education stronger by vigorously supporting teacher education and improving its status.

The *Action Plan for Teacher Education Revitalization (2018–2022)* has been promulgated in March, 2018. The purpose of this plan is mainly to carry out the basic objectives of *Opinions on the Teaching Force*: to design concrete measures to vigorously support teacher education, to improve the status of teacher education, and to enhance the quality of teacher education (MOE 2018).

The teacher education policies introduced since 2017 demonstrate that the Chinese government has shown not only a conscientious awareness of revitalizing teacher education but has also grasped the key to the teacher education revitalization; this shows us the dawn of future teacher education revitalization in China. Nevertheless, only time will demonstrate whether teacher education can be revitalized because this reform is still at the early stage, and what we witness now is still only the intention of policies rather than their implementation.

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Part II
Higher Education Reform

Chapter 5

The Idea of the University and Its Specters: On the Ghostly Return of the “Excluded”



Daniel S. Friedrich

In his influential essay, *The University Without Condition*, Jacques Derrida (2002) states that: “The university demands and ought to be granted in principle, besides what is called academic freedom, an *unconditional* freedom to question and to assert, or even, going still further, the right to say publicly all that is required by research, knowledge and thought concerning the *truth*” (p. 202). Derrida continues, “The university should thus also be the place in which nothing is beyond question, not even the current and determined figure of democracy, not even the traditional idea of critique, meaning theoretical critique, and not even the authority of the ‘question’ form, of thinking as ‘questioning’” (p. 205). While “the university without condition does not, *in fact*, exist...” (p. 204), Derrida’s essay expands on the idea that this is the mission of the new Humanities in the University to come.

For the purposes of this chapter, I will not delve into Derrida’s work on the new Humanities, but will instead use Derrida’s own tools, and those of others involved in what Blanco and Peeren (2013) call “The Spectral Turn” to flip the Idea of the University implied in *The University Without Condition*. Following Blanco and Peeren, I mobilize the specter as a conceptual metaphor, an analytical tool that performs theoretical work, that *does* theory. The goal will be to reconsider the ways in which the exclusions embedded in the unconditional university specter its own project. A different reading of the university’s project through a problematization of exclusion/inclusion may hopefully lead to rethinking the mission of the university to come.

In order to anchor the text, I will refer to the policies that framed the foundation of a recent batch of public universities in Argentina. These institutions have the particularity of having been created with the explicit purpose of including those traditionally excluded from higher education, by being located in geographical

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115

areas with high poverty rates, providing high-quality free education, and rethinking their academic offering to match the needs of the surrounding communities.

Throughout this chapter, I will argue that while these new universities have upended the notion of higher education as a public good, and their effects on the Argentine higher education landscape, the job market, and society as a whole will most likely be significant and positive in the decades to come, the new institutions are *spectered* by several ghosts,¹ highlighting the fact that every effort to differentiate the new from the old re-inscribes the difficulty, and perhaps the impossibility, of the new. As the excluded haunt a project of inclusion, they highlight the limitation of policies that focus exclusively on presence.

The chapter begins with a brief description of Argentina's higher education landscape, focusing especially on a relatively new batch of public universities that were founded in the last 25 years. The lens then moves to one of those universities, Universidad Nacional General Sarmiento, in order to examine three specters that haunt it: the excluded, the model, and the land. The text concludes by exploring how the consideration of that which is spectering both the general project of the European university as we know it and the development of this specific university may affect higher education policy that aims at inclusion.

5.1 A New Model of University in Argentina

In some ways, the higher education landscape in Argentina can be said to reflect both local histories and idiosyncrasies, as well as some global trends and deep linkages to Western-European universities. For instance, while higher education enrollment has been steadily growing, by 2010 (last census) only 6.4% of the population over 20 years old had finished college. In a country in which there is a very strong public (free) university system, this relatively low completion rate can be attributed to a multiplicity of variables, but it begs the question of the relation between public education understood as a right (i.e., free, for the most part without an entrance examination, with the only formal prerequisite being a high school degree) and the continuous exclusion of the vast majority of the population. Evidently, this is not solely an education problem, especially given the enormous inequities present in the country. However, the state has at different points in time attempted a multiplicity of strategies to address inclusion in higher education.

One of these strategies has been the founding, in the last three decades, of 27 new public universities: ten in the late 1980s and the first half of the 1990s and 17 in the early to mid-2000s. To provide a brief background, at the beginning of the twentieth century, there were only four national universities in the country: The National University of Córdoba (founded in 1613), the National University of Buenos Aires

¹ Throughout the text, I use "specter" and "ghost" as synonyms, even though their etymologies are somewhat different.

(the largest one in the country currently counting over 270,000 students, founded in 1821), the National University of El Litoral (1889), and the National University of La Plata (1897). The next seven decades saw the foundation of seven more national universities, followed by the establishment of 14 new universities in the 1970s under the “Plan Taquini” (Rovelli 2009), which sought to alleviate the overcrowding in the older institutions. Yet political, social, and demographic changes in Argentina made these higher education institutions insufficient in relation to the demand, leading President Carlos Menem’s administration (1989–1999) to found ten new public institutions, six of which were located in the periphery of the City of Buenos Aires. The focus of this chapter will be set precisely on those universities and their specters.

5.1.1 *On the Spectered Foundations of the New*

As mentioned above, the University of Buenos Aires (UBA) has traditionally been the largest, most prominent higher education institution in the nation. While the right to public, free education has been inscribed in the country’s constitution and periodically reaffirmed through reforms, it was the university reform of 1918, which started in Córdoba yet quickly spread to the rest of the nation and beyond, which in many ways democratized the institutional structure. The reform established the university’s budgetary autonomy; the participation of students, faculty, and staff in governance; the requirement to connect to the broader community through an “extension” program; the teaching structure; and the mechanisms to hire and promote faculty through opposition examination. Since 1918, all national universities have had to follow these same principles, under the expectation that participation, fairness in hiring practices, independence, and links to broader purposes would make access a *natural* outcome.

Continuing the centralizing movement initiated in the previous century, which positioned the port city of Buenos Aires as the economic, political, and intellectual hub of the country, the University of Buenos Aires became the cradle of the nation’s intellectual elite. A highly prestigious institution, UBA, was modeled after modern central European institutions, in terms of both curricular offerings and institutional structure. The consolidation of the city of Buenos Aires went hand in hand with that of its main public university, and as population grew, so did demands for access to higher education. The university, which had been until the mid-1940s the exclusive domain of the elites, was forced to respond to the demographic changes that industrialization (under Juan Domingo Perón’s first administrations) was bringing about (Gluz 2011). In some ways, after the reform of 1918, access was improved²;

²Unfortunately, the first available student census for UBA is 1958, showing an enrollment of 58,684. There is a slow yet steady increase until 1980, followed by an almost doubling in 1988. Plotno (2009) suggests that this increase is due to the return to democracy after the last dictatorship, which brought back students and faculty who had fled the country. According to the last census, from 2011, there were 277,373 students enrolled at UBA (<http://www.uba.ar/institucional/censos/Estudiantes2011/estudiantes2011.pdf>).

however, as indicated above, higher education remained and still remains a privilege of the few.

The 1990s saw a turn in Argentina's economic and political life. Carlos Menem's two consecutive administrations (1989–1999) reappropriated some of the last dictatorship's economic approaches to privatization, coupled with a diminishing role for state intervention—following the rulebook set by neoliberal economic thought—leading to a boom in private education offerings at all levels. Higher secondary education completion rates led to more demand for universities, colleges, and trade schools, and the issue of inclusion was seen by most policymakers as better left to the market forces.

Thus, it may have seemed as contradictory for Menem's administration to pursue the foundation of a significant batch of public universities, requiring a deeper examination of the apparently conflicting readings of this period. Of the ten universities kickstarted during that decade, six were located in Buenos Aires's periphery. According to Chiroleu et al. (2016), "These foundations [were] an attempt at diminishing the weight of the University of Buenos Aires, then run by the radical party [i.e., the opposition], and responding to the calls by leaders of the party ruling those areas to gain a university in their territory" (p. 30). The idea that the founding of public universities in the periphery of the city was an attempt to decenter the University of Buenos Aires was embraced by the country's intellectuals, most of them critical to Menem and his administration and some with strong ties to UBA. By providing students from the (mostly poorer) suburbs with higher education options that would not involve long commutes, yet would be free even if of lower quality—they argued—Menem's administration was seeking to lower enrollment rates at UBA to gather reasons to defund the institution. UBA had become a hotbed of resistance to the neoliberal policies being proposed and carried out by Menem's party, and strikes, public demonstrations, and arguments in the media had become daily occurrences. The foundation of new universities in "Menemist" territory was seen, then, as a counterattack by the government.

These new universities, while criticized for the alleged intentions of President Menem for founding them—intentions I will not scrutinize in this chapter, as that line of inquiry falls outside my purview—were grounded on the tropes of innovation and access, which were nonetheless appropriated differently in each specific locale. The six new universities situated in the periphery of Buenos Aires, by being located in areas in which (quality, public) universities had seemed unthinkable until then, were forced to reconsider what they were there for, what innovation and access meant for them, and what constituted an educated subject. Very quickly, these institutions began questioning both the alleged tension between quality and access that served to anchor the critiques coming from the intellectual community in the city, as well as the idea—touted by the political leaders that ceremoniously inaugurated them—that an increase in opportunities would lead, linearly, to a more democratic system.

For the purposes of the argument I will make further down, I will zoom in on one specific case: Universidad Nacional General Sarmiento (UNGS). Founded in 1993, UNGS is located in *Los Polvorines*, about an hour drive from the city of Buenos Aires, and in what Barsky (2005) terms the “periurban”: the border between city and countryside, between rural and urban, the “diffuse city.” In terms of the student population, more than 90% of the students’ parents had never attended college, and more than 70% had not finished high school (Martín 2013: 134–135). Expressing the tensions between the different readings of the university’s foundational mission, Roberto Domecq, UNGS’s first dean (1993–1998), stated that some people sought: “A poor university for poor people. [But] our position was that if the population was poor youth, even more reason to give them the best possible education” (Martín 2013: 24), thus going against the idea of short vocational careers directed to the job market that seemed to undergird the legislation that established the institution.³

In terms of the structure of the new university, Domecq affirmed that: “The fact that there had been no other universities in the area gave us great liberty to think about the structure, meaning and goals of the university ... it was an invitation to innovate” (Martín 2013: 25). The main innovation, according to the first three deans, was the organization of the university around Centers that responded to themes or problems, instead of traditional schools. The idea of a center invited more interdisciplinary, team-based work, grounded on understanding deep issues instead of granting skills. An example of such a center was the Center for Urban Ecology, which emerged out of a concern for the quality of the soil and the water in an area with an industrial past, abandoned factories, tendencies to flood, and a low quality of life for its inhabitants.

A second distinctive feature of UNGS is its position toward issues of access in relation to a population that had been underserved by the system. In the words of the third dean, Silvio Feldman (2002–2010):

Learning to side with those coming from different generational and cultural experiences is great learning. To think and act based on understanding the other’s complexity implies a change in mentality that involves laborious learning and effort, it requires inquisitive thinking, since the transformation directed towards access to rights, to assume those rights, is a complex process both for the one accessing them, as well as for the institution that opens up a space for it to happen. This takes time, work, and the capacity to listen in an open, critical and inquisitive manner, being able to be shaken out of one’s own certainties. (Martín 2013: 135)

Some concrete initiatives aimed toward the goal of not only improving access but also embracing the right to education as an ongoing process included scholarships covering transportation and bibliography (reminding the reader that there is no tuition or fees at these universities), the publication of inexpensive reading guides, the opening of a free early childhood center and a multiage playroom, and the establishment of a cultural center offering artistic and social activities for the community.

³The original text of the law founding this batch of public universities stated that they were to offer “short career paths linked to the job market.” The intentions of the law were contested, and this phrase was eliminated from the final version of the legislation.

All these programs were part of what sought to distinguish universities like UNGS from traditional universities that tended to serve the privileged sectors of the population. As such, the new universities showcased their understanding of (higher) education as a human right and a social, public good.

5.1.2 *On the Specters of the Universal*

In some ways, one could argue that the university as a human right *is* the university without condition, and that the university cannot be without condition, unless it is a human right. According to this reading, the university as an idea overflows the alleged intentions of a specific institution's concrete foundation (in this case, to disperse the power of UBA and replace it with low-quality, local, low-level worker training facilities). A combination of the intentions of the leadership team, a historical-cultural idiosyncratic understanding of education as a right that is deeply embedded in Argentine society at least since the reform of 1918 and that overwrote Menem's project, and a change in the direction of the government starting in 2003 that allocated much more funding to public institutions created the conditions for a more inclusive university. This inclusivity was always already there in the idea of the university, but a combination of policy and circumstance allowed it to flourish.

I do not mean to completely challenge that reading here. These new universities *did* interrupt the *normal* flow by situating themselves where they were not supposed to, by offering possibilities that were not supposed to be offered, and by being inhabited by people who were not supposed to be there. In perhaps the most important ways, due to how young these institutions are, the full impact of their establishment and work will only be able to be assessed in the decades to come, as alumni begin to make an impact in their communities. Therefore, this text is not to be read as a critique of those universities, which I understand to be doing positive, important work. What I do want to offer is a different, complimentary reading of some of the logics underlying but also undermining these institutions.

When Martín (2013) interviews Domecq about the quality of graduates, given that the former dean kept teaching there for a while, Domecq answers:

The work presented by students was very uneven. There were weaknesses. There has not been good training on giving students tools to express themselves correctly, they had difficulties with this. But they also had enormous will to work and be of use ... We needed to overcome many obstacles: lack of experience with expression, methodological weaknesses, bibliographical excess and difficulties "metabolizing" it, etc. On the other hand, there was creativity, intuition, knowledge about reality (p. 45)

As he discussed some of the issues he faced, José Luis Coraggio, the second Dean (1998–2002) at UNGS, acknowledged that fields of study such as urban ecology "did not work because they did not reach the parents' and students' imaginaries. They should have called it architecture. Whatever is different is not recognized as alternative" (Martín 2013: 56). In this sense, one thing that surprised everyone involved in UNGS is the area that, as of 2013, comprised 40% of the student body

and the graduates: teacher education. When asked about how he made sense of this, the third dean, Silvio Feldman, said: “Teaching is closer to the social world of students ... Sometimes some of the degrees offered by the university were not sufficiently integrated to and legitimated by the knowledge and experiences brought in by students” (Martín 2013: 141).

What begin to emerge in these comments are the questions: Different from what? Obstacles in relation to whom? The reading I will propose is an invitation to consider what is spectering the idea of the university embedded in these efforts (and in any efforts to reform what we have historically called “the university”), and how, even the call for a university without condition, the notion of a “place in which nothing is beyond question,” is spectered by its own limitations.

Blanco and Peeren (2013) discuss the specter as a conceptual metaphor, an analytical tool that performs theoretical work, that *does* theory. They consider Derrida’s publication of *Specters of Marx* in 1993 as a catalyst for what they call the “Spectral turn.” Openness to spectrality, for Derrida, implies a scholar “capable, beyond the opposition between presence and nonpresence, actuality and inactuality, life and nonlife, of thinking the possibility of the specter, the specter as possibility [...] Derrida uses the figure of the ghost to pursue (without ever fully apprehending) that which *haunts like a ghost*, and, by way of this haunting, demands justice, or at least a response” (Blanco and Peeren 2013: 9). The mobilization of a spectralities lens to think about policy, then, points toward a specific use of history that shies away from only focusing on presence, on winners and losers, or on who gets to tell the story. Policies, such as the creation of new models for universities to foster inclusion, are not seen here as merely the execution of the conscious will of politicians and/or populations. Instead, these policies and the narratives that legitimize them are always already haunted by that which was not actualized, that which was at some point desired yet unaccomplished, that which was left as a mere possibility. The point is not, therefore, to determine who or what was silenced, but whom or what cannot be kept entirely quiet.

5.1.3 *The Excluded, the Model, and the Land*

In looking at the foundation and workings of the new batch of universities, and specifically UNGS, a consideration of some of the specific specters haunting it might be useful in understanding its limits, as well as one possible way in which inclusion and exclusion are not only deeply intertwined, not only that, but inclusion and exclusion are not always the results of policy, but of unpredictable interruptions. I will focus on three specters haunting UNGS.

The first specter is the ghost of those **excluded** from the university’s space, those whose absence is a presence demanding a response. The potentiality of total inclusion, of a university that actualizes the right to education for everyone, *does* something to the university and its workings. It urges the search for ways to fulfill that potentiality, it moves resources and bodies, and it centers some strategies and

marginalizes others. The necessary failing that it entails—the impossibility of including everyone—haunts both the Idea of the University and the existence of this specific university.

The very word *University* contains the universe it claims to encompass. While that universe tends to be framed as the universe of knowledge (an unconditional approach to knowledge, perhaps), it would not be hard to argue that said universe can only be reached by the universal inclusion of knowers. This impossibility haunts the idea of the university as experienced by any person attempting to construct a syllabus, delimit fields of study, programs, and paths. There is always a choice to be made in terms of what is included and excluded. But it is also more than that. The specter of universality actively undoes the seeming tension between theory and practice, between the demands of the labor market and the desires for something else, by silently screaming at the university: WE ARE EVERYTHING! WE ARE EVERYONE! The specter of total inclusion devours theory *and* practice, labor market *and* liberal arts.

Going back to the specific case of UNGS, when dean Domecq discusses the obstacles he sees in the students' productions, opposing them to the strengths ("creativity, intuition, knowledge about reality") one can sense the ghosts of those not creative or intuitive enough as they are seen as unable to even enter the conversation. Yet, they keep knocking on the gates of a university that has effectively interrupted the *normal* flow by opening doors that had always been closed, even as those doors are always already framed by walls.

The second specter is that of the **model** university, the one UNGS is trying to distinguish itself from: The University of Buenos Aires (UBA). When dean Coraggio explains the difficulties for new careers to enter the population's imaginary, or when dean Feldman expresses surprise while proposing reasons for why teacher education became such a large part of the university, UBA's spectral voice returns to state: *You are not like me. Your students are not like mine. Your standards are not like ours. You are not a real university.* Both the innovations instituted and the obstacles faced by UNGS are always in relation to the absence of UBA in that space, given that the very reason for UNGS's existence is both territorial and demographic. UBA's failure to fulfill its promise of universality is what opens the door for an institution such as UNGS to attempt to include that which has been excluded. This implies that UBA has already defined the terms of inclusion and exclusion, of failure and success.

The model UNGS is trying to propose—a university with deep connections to the issues that concern the surrounding community; with creative engagements with knowledge and scholarship to respond to the new population; programmed to support nontraditional students; and flexible enough to adapt to the emerging challenges—is inescapably tied to the European idea of the university, so much so, that taking the new too far runs the risk of not being recognized (by students and the community, by other institutions, and by itself) as a university. This presents us with both a semantic and an institutional haunting. Semantically, the question becomes how far can a concept stretch in search of the new without losing itself? In other words, is the new ever possible? Institutionally, the fact that everyone involved in the creation and development of the new university was educated in universities that

followed the European model points to the limits in the imagination on the one hand and to the ideal model being ever present as a point of comparison on the other. Returning to Derrida’s mobilization of the specter, the European model, in this specific case embodied by UBA, haunts UNGS like a ghost, demanding a response: *After all I did for you, my child, how can you claim to be so different?*

The third specter is that of the **land** the university is occupying: a currently unproductive, contaminated, prod to flooding terrain with layers upon layers of history. The University is situated in the “Malvinas Argentinas” district [partido], created in 1994 on part of what was previously called “General Sarmiento” district (thus the name of the institution), established in 1889. Traditionally a rural territory, General Sarmiento experienced rapid industrialization in the 1950s through the early 1970s, growing its population ten-fold, from 46,000 in 1947 to half a million in 1980. However, this growth did not take place evenly throughout the territory, leading to what Alsina and Borello (2007) call “partial agglomeration” (p. 10), as the land presents vast areas without any buildings. In fact, the area was populated haphazardly, through the establishment beginning in the 1940s of slums [villas miserias] that housed low-income populations that had migrated to the city from more rural areas, and that generally lacked any infrastructure, such as running water, drainage systems, or paved roads. While infrastructure has definitely improved—especially since the 1990s—the area is still unequally developed. By 2004, 36% of the roads were paved, drainage covered 3.98% of the area, drinking water was available in 4.67% of the territory (in terms of surface), and only 0.2% had available waste drains (Alsina and Borello 2007). In 2000, Malvinas Argentinas had 290,691 inhabitants, with a density of 4.614 inhabitants per sq./km,⁴ and UNGS was the only university in the district.

The history of the urbanization of the area surrounding the city of Buenos Aires is complex and widely surpasses the goals of this chapter, so these data points are a mere framing of the juxtaposition between a modern set of buildings, including a state of the art auditorium unlike any I had seen outside commercial theater, and the *splash-splash* of my boots as they sank deeper into the mud after a heavy rain. As if the land itself were screaming for recognition, resisting and acting upon a university set on disrupting its unproductivity. UNGS is not only haunted by the idea that the university was not supposed to be there, but by the materiality of a vast territory ruined—in terms of its agricultural potential—by the progress promised precisely by the modern institution of higher education. The floods, the on-and-off stench, the mud one carries into the buildings, or the sound of car wheels spitting sludge as they try to gain traction function as constant reminders that one cannot merely pave over history with books, screens, and cement, without expecting resistance—a demand for a response—from the ground up.

The three specters highlighted here as haunting UNGS—the one of those excluded from its project, the one of the model European university as represented by UBA, and the one of the land it occupies—force the institution to pause and act

⁴www.malvinasargentinas.gov.ar.

upon different aspects of its daily existence. A hesitation in its curricular offerings, the implementation and backtracking on programs and policies, or the building and reworking of old and new infrastructure are only some of the ways in which UNGS tries to put these ghosts behind it, yet in that act, brings them back up, and confirms the impossibility of ridding itself from the forces and materialities spectering it.

5.2 On Specters and Policy

The university without condition is haunted, and there is no exorcism that will be able to remove the specters that call for it to do the impossible, while setting it up to fail. Derrida's invitation for the university to be the place where nothing is beyond question is, in this sense, limited by a focus on the presence of those questions, by the inclusion of everything that is perceived to be an interrogation. The Idea of the University must pay attention to the affects and the effects of the ghosts that haunt it: the specters of ways of being outside its universe, the shimmering materiality of the land in which it is emplaced, and the absent bodies that interrupt its efforts to include them by asking: *but weren't we part of you already?*

In terms of policy, a consideration of that which is spectering the project of the university has deep implications, once again both in terms of general planning and in ways that are specific to *this* university. Generally speaking, Derrida's defense of the university without condition still stands as one of the strongest arguments in favor of higher education as a site of possibility, with a political role that gives it an exceptional role that no other institution or space possesses. Even if, as he states, this university "does not, *in fact*, exist" (2002: 204), the horizon of unconditionality with regard to freedom to assert anything related to truth still seems to this day to be at the core of any solid liberal defense of the university. Yet, even this unconditionality has its limits, since the universe of the university is never fully correspondent to the universe of the possible. While policies that were created to defend the idea of the unconditional university (think, for instance, of tenure in the United States) are definitely necessary, especially in times of encroaching market rationality and attacks on the "value" of liberal arts, these policies should not forget that which, by design, they cannot consider. The specters of the knowledge, the knowers, and the ways of knowing that are not seen as such by the model of the European university haunt its universalist pretensions, and responding to them implies, on the one hand, an attempt to push against the boundaries of an institution that is content with counting what is present as the main marker of progress, and on the other, accepting that no amount of policies ad practice will rid the university of its specters. Learning to live with these ghosts may be the only respectful response to them, as uncomfortable as this may make us, the inhabitants of the university.

For Universidad Nacional General Sarmiento, learning to live with ghosts would entail a series of tensions. The first one emerges from the very act of opening the door to the excluded, and it comes with the realization that this act is an act of power and necessarily redraws the line of exclusion instead of eliminating it. The creation

of programs to address the needs of those traditionally excluded from higher education, such as family care, writing centers, and specific stipends—as necessary as they may be—constitute what Popkewitz (2008, 2009) terms “double gestures,” in that they simultaneously include and exclude. By demarcating the population they are targeting, these efforts draw a new line, with other subjects being left out of the count. As mentioned above, the specters of those excluded never fully leaves though, given the promise of universality embedded in the Idea of the University and in the project of a particular university designed to include. Listening and responding to these ghosts (as opposed to operating under the fantasy of their complete elimination) implies coming to terms with the power relations inherent in the ability to redraw those lines, failing, and yet not missing the horizon of inclusion.

The second tension relates to the question of how to create something new when the specter of the old is always already embedded in the creative act. Listening to this ghost implies resisting the urge to justify action by differentiating that which is called *new*. Instead, the new could be understood as the search for a different framing for the university, which for now does not include a vocabulary or a reference point and, thus, requires contingency to be constitutive of its project. *We are trying this for now since, under these specific conditions, it may bear positive results, yet neither drawing from past experiences nor opposing them can guarantee results.*

The third tension, responding to the third specter, is the one experienced between the desire to bring about progress as embodied in the educated subject as a product of the modern university and the materiality of a terrain that serves as evidence of the potential for ecological destruction of those same subjects coming from those same universities. The attempt to ignore the specters of the land has led to proposals to make “urban ecology” an interdisciplinary field of study that could eventually heal the environment and leave the past behind. Without dismissing this effort, it has become clear that the ghosts of unbridled industrialization continue not only to demand to be heard but they are felt as well. The university cannot but get literally dirty. Responding to these specters may imply learning to live with mud, incorporating the toxicity of the water into a curriculum that understands it as inherently related to the modernity that founds it. The ecological catastrophe left behind by rapid urbanization would be seen then not as a symptom to be cured but as a reminding companion of the structural conditions that make the university possible.

Evidently, these three tensions do not point to policy recommendations in the traditional sense, in that they are not easily applicable and their outcomes measurable. Instead, they propose the spectered university as an unsolvable problem, as an institution in need to learn the boundaries of its search for universal inclusion. These boundaries are not to be understood as paralyzing or accepting of an unjust status quo. Instead, they need to serve as a provocation: when considering the ghosts of the university as part of its constitutive project, the notion of inclusion itself shifts, and the question of inclusion/exclusion cannot be seen as a binary anymore. We are provoked by these specters to think of policies that accept the impossibility of doing one without the other and of exorcizing the ghosts of our own desires.

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Chapter 6

The Modernization of Higher Education



Yifan Sui

In 2015, *Education 2030: Incheon Declaration* stipulated a new comprehensive goal of ensuring quality education that is inclusive and equitable for all and life-long learning opportunity by 2030. The following Framework of Education 2030 reiterated this vision, suggesting ten specific goals and strategies for action (UNESCO 2015). In response, China's *Position Paper on the Implementation of the 2030 Agenda* issued by the Chinese government in 2016 proposed to "deepen the progress of modernizing education" (Pan and Li 2016).

The 18th National People's Congress (NPC) of the Communist Party of China (CPC) advanced socioeconomic change through the implementation of a national governance system and modernization of its national governing capacity. These changes have since emerged in China's higher education sector: under the jurisdiction of the CPC's State Council, the Ministry of Education implements policies and changes at all levels. However, as the base of China's prosperity, higher education is not simply an issue of initiatives to modernize governance. Rather, higher education requires modernization overall to better enable it to shoulder the responsibility of building a strong China. Accordingly, to develop higher education for a stronger China has been written into China's educational reform and development guidelines. However, this prompts the key question: what kind of higher education can best shoulder the responsibility of creating and maintaining a strong and prosperous China? The answer is the modernization of higher education (MHE). Indeed, MHE is the end, means, and foundation of the development of a Chinese higher education that will strengthen the country. As a key theoretical issue in urgent need of resolution during the process of higher educational reform in China, MHE is also a stringently practical issue in the creation of a strong higher education system. The modernization of China's higher education relies on the theoretical guidance,

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129

underscoring the significance of discussing MHE. This chapter addresses the following three questions: What is MHE? What are the characteristics and components of MHE? How can MHE be achieved?

6.1 What Is MHE?

By now, Chinese scholars defined MHE from its coverage (Research Project Group 2017), characteristics (Zhang 2010), and its process (Zhang 2000). In 2013, Professor Zhenyuan Qu, then-President of China Society of Higher Education, argued that MHE is a key objective of higher education reform and development in the new period of China. He further advanced that theorization is required before MHE can be realized (Qu 2014).

To define the concept of MHE, it is necessary to clarify the following questions: Is MHE a target-oriented or process-based concept? Is it a concept that focuses on the future or does it concern the *status quo*? Is it an internationally comparable concept or a local one? If it is a target-oriented concept, what is its target? If it is a concept focusing on the future, when is this future? If MHE is an internationally comparable concept, what is the reference nation? Since they pertain to MHE, these basic theoretical issues are inevitable. As such, in order to have a clearer understanding of MHE, this section briefly reviews the historical backgrounds of how definition of modernization in China was coming in shape in a few decades.

China has been an advocate and pursuer of modernization. It was at the first session of the third NPC, held in December 1964, that China's Premier, Enlai Zhou, first mentioned the concept of "Four Modernizations"—namely Industrial Modernization, Agricultural Modernization, National Defense Modernization, and Science and Technology Modernization—based on the suggestions of Zedong Mao. Zhou also set a target of achieving these "Four Modernizations" within a period of 30 years. In the first 15 years, China endeavored to establish an independent and complete industrial and national economic system in an effort to make China's industry globally advanced by world standards. In the remaining 15 years, China sought to play a leading role in industry and realize the modernization of its agriculture, industry, national defense, as well as science and technology by the end of the twentieth century.

In December 1979, however, Xiaoping Deng argued the aforementioned modernization was too vague, advancing the concept of modernization as the realization of moderate prosperity instead. In 1984, he defined "moderate prosperity" as achieving US\$ 800 GDP per capita by the end of the twentieth century, thereby facilitating a concrete and operational data reference for China's modernization. With the increase of China's GDP per capita, at its 17th NPC in October 2007, the CPC proposed a target of realizing all-round moderate prosperity in the first 20 years of the twenty-first century and achieving a jump from US\$ 1000 to US\$ 3000 GDP per capita. China's GDP per capita reached US\$ 6100 in 2012. Therefore, after the 18th NPC, the CPC revised and redefined its "Four Modernizations" to industrialization,

digitalization, urbanization, and agricultural modernization. As such, China's socio-economic modernization is both locally defined and internationally comparable that focuses on a certain period in the future, while having a quantitatively measurable target. That is to say, the concept of modernization has been continuously adjusted and improved with the development of society.

In 1983, Deng used the slogan "Education should be oriented toward modernization, to the world and to the future" to first propose the modernization of education in China. However, it appears to have been Boling Zhang, founder of Nankai University in Tianjin, who first linked education with modernization. Asked the purpose of education during a speech at Nankai High School, Zhang answered that "the purpose of education is to use education to modernize China and to make China properly position in the world, avoid of being eliminating from the world" (Cui 1997: 208). As such, Zhang realized that the purpose of education was to save and strengthen China. In contrast to both Zhang and the "Four Modernizations," Deng's time-free and data-free expression of "Three Orientations" of education delineated the future direction of China's education reform and development. "Three Orientations" education remains methodologically significant to our understanding of the modernization of education. As such, the modernization of education is hardly an independent concept; rather, its interpretation cannot be separated from the world and the future.

This prompts the following question: can we define MHE based on our understanding of "Three Orientations" education, while referring to the modernization of the economy and society? Based on my previous research (Sui 2009: 2014), MHE, as a relative and contextualized concept, can be defined as a target system and effort making with reference to the most advanced international higher education, reflecting the best status of current or future higher education development.

6.2 What Are the Characteristics and Components of MHE?

Based on the previous definition of MHE, we can argue that the characteristics of MHE are not a reflection of its internal independent components; rather, it is a collective presentation of many similar special relationships between the internal and external factors of higher education. These relationships can be summarized as follows. First, MHE is both an internationally comparable and international target, as well as a process focused on the local context. Second, MHE highlights both quantity and quality and is a combination of elite and universal education. Third, MHE is the target of future higher education and directs its development, thus both the process and status of higher education development. Fourth, MHE originates from the needs of national competition and modernization, leads the development of the nation's modernization, and constitutes the essential base of the nation's modernization. Fifth, MHE is a modernization of the macro governance system of higher education, as well as that of university leaders' capacity to govern the university.

Finally, MHE is a combination of the modernization of higher education ideologies, content, approaches, and methods.

As such, the concept of MHE is hardly an isolated and abstract concept. Rather, it is an umbrella concept comprising a set of higher education components or expressions showing some of the conditions of higher education, whether as a target or process. Since MHE is a complex status and process of higher education development in which many factors have been involved, it is *impossible to use one term to depict MHE and its process*. Some scholars identified four indicators, namely scale, input, quality, and effectiveness, to evaluate MHE (Ling and Yu 2015). Based on the definition given in the part 1, there are six components of MHE identified in the following:

1. *Universalization of higher education*. This refers to the aim of at least 50% of school-aged people having access to higher education (Martin 1973). It is the threshold target of realizing MHE on the initial stage.
2. *Quality higher education*. There are such two core missions of higher education as cultivating talents and contributing new knowledge. Without adequate quality and effectiveness, scale and quantity, for example, cannot justify a genuine MHE.
3. *Good governance structure*. An effective governing structure puts efficiency first, engages democratic management, embraces an overall design, and is guaranteed by laws and regulations. This constitutes the institutional premise and organizational environment for assuring MHE.
4. *Internationalization of higher education*. MHE itself is an internationally comparable concept, representing the most advanced and highest level of a nation's higher education. Therefore, the internationalization of higher education is the most important component of MHE and is discussed greater detail in the third section of this article.
5. *Digitalization of higher education*. In addition to changing people's lives and production, the prevailing modern ICT and its rapid progress have challenged traditional higher education in terms of its concepts, methods, and approaches—bringing higher education into the new era of education. With the expansive development of open online courses (MOOCs), higher education resources are no longer monopolized by a small number of universities and are not a privilege of certain knowledge elites. The modernization of ICT has challenged higher education greatly, changing the ways and approaches of traditional higher education, the concept of traditional higher education, and the significance of their existence. However, modern ICT has not challenged traditional higher education subversively. Rather, the all-round trend of digitalization of higher education (e.g., MOOCs) and the challenges it has brought have been recognized by societies around the world and are regarded as a developmental trend and the future direction of higher education.
6. *A learning society of higher education*. A learning society is fundamentally different from a qualification-based society. Instead of specifically targeting specific qualifications within a specified period, higher education learning will

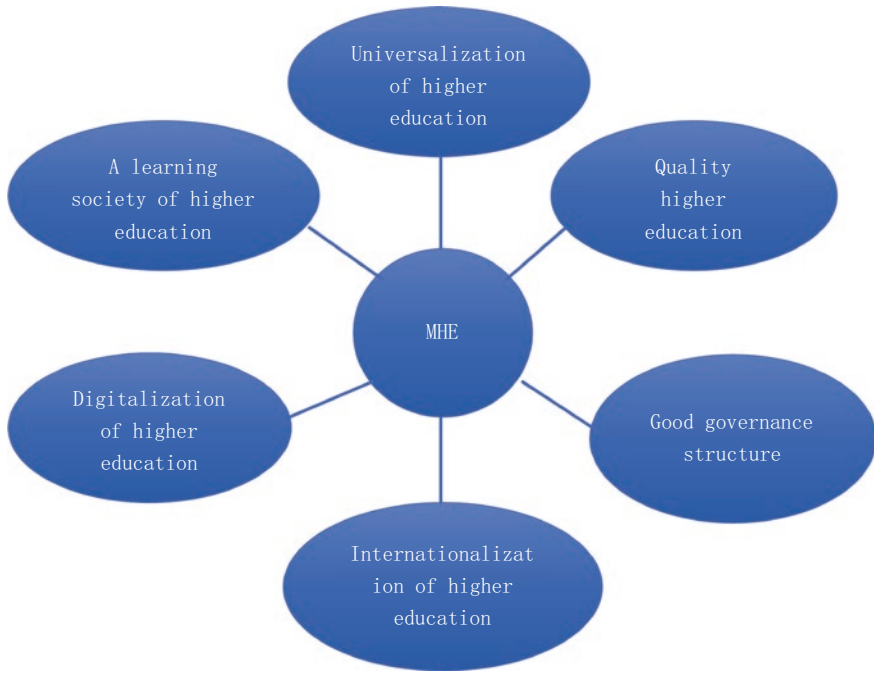


Fig. 6.1 The components of MHE

become a lifestyle, a leisure, and a lifelong education pursued to satisfy interests and update knowledge. As an ideal of higher education, a higher education learning society is actually a type of social status with open learning time and space, diverse learning content, equal learning opportunities, plenary learners, and subjective learning processes. Such a learning society not only reflects the social pursuit of lifelong higher education but also provides a foundation from which to achieve higher learning in one’s lifespan. Arguably, a learning society of higher education could be the final target of MHE.

While it may be possible to identify other indicators of MHE, these six components are indispensable (Fig. 6.1).

6.3 How Can MHE Be Achieved?

While higher education in China has witnessed remarkable progress in the past few decades, a significant gap remains between China and other countries with a strong higher education. China only gets ahead of scale of higher education, not to mention the efficiency and quality. As a result, there is an urgent to speed up the process of MHE in China. Of course, MHE characterized by the attainment of the highest level

and comprehensive strengthening of higher education takes time to achieve. Given the importance of MHE and the indispensability of higher education for strengthening the nation, the issue of how to speed up and achieve MHE is urgent. Successful experiences of China's tremendous socioeconomic changes since the third session of the 11th NPC can best be summarized by two keywords: "reform" and "opening-up."

Therefore, since the 18th NPC, the new leadership teams of the central government of China have persistently practiced deep reform and are opening-up to facilitate the realization of China's dream. As an important and complex system in China's national system, higher education is also experiencing significant revolution and revitalization. Therefore, the only way to realize MHE is through reform and opening-up.

6.3.1 MHE Achieved from Higher Education Reform

China recently released three development outlines for 2010–2020: namely, the "Outline of China's National Plan for Medium- and Long-Term Science and Technology Development," "Outline of China's National Plan for Medium- and Long-Term Talent Development," and the "Outline of China's National Plan for Medium- and Long-Term Education Reform and Development." "Reform to develop" has reiterated the three policy papers. In fact, there are two reasons why educational reform should come first in educational development. First, education is a complex social activity involving the largest number of social stakeholders with vested but diversified interests. Second, there are numerous problems that remain unresolved, while the sophisticated interlinkages between education and the government, society, the school system, and students have yet to be tidied-up. Moreover, the educational ideal intertwines with educational practice. These dynamics have constituted certain conflicts in and barriers to educational development, particularly to MHE. Reform is the undoubtedly the driving force and means of promoting MHE.

Higher education is a complex system with both uniformity and diversity, including many components and stakeholders. Moreover, the internal issues of higher education intertwine with its external factors. Therefore, higher education reform is a systematic project in which change to one aspect will affect the whole system. Thus, we must have a good understanding of the complexity of higher education. A one-sided, isolated, and static reform and solution could possibly solve temporary problems or part of the problems, achieving immediate outcomes; it, however, cannot resolve the problem fundamentally (Sui 2014a, b). One way to reduce the uncertainty and complexity during the systematic reform of higher education is to engage in a comprehensive and systematic top-level approach toward the process, thereby preventing fragmented reform.

6.3.2 *MHE Achieved via the Internalization of Higher Education*

Given the idiosyncratic national contexts and historical-institutional paths, national higher education systems still share fundamental missions as an open social system in pursuit of efficiency and quality. As an open system, the general feature of higher education requires that it constantly absorbs external resources and energy in order to improve its efficiency and quality; rather than a closed or an isolated system that does not engage in resource and energy exchange with the external world, which is actually quite compatible with the concept of higher education internationalization.

The internalization of higher education is an activity and process that aims to improve higher education development and quality; it also endeavors to promote the sharing and mobility successful experiences, scientific technology, facilities, talents, and information by opening the higher education system and communicating and cooperating with international higher education providers (Pu and Sui 2016). Internationalization, thus, constitutes an effective approach to reaching the most advanced level of higher education in the world in the shortest time by learning and borrowing from more advanced methods, experiences, and technology. Consequently, as indicated by the previous discussion of MHE, higher education internationalization is not only a means and a key point of MHE but also an indispensable component reflecting MHE. As Jane Knight among others has concluded: “It is doubtless that the integration of higher education into the outside world appears to be urgent” (Zhang 2012: 17).

In an era in which knowledge has played an increasingly decisive role, higher education has become a symbol of a nation’s strength. Without a modernized and strong system of higher education, we are left asking what else could be relied upon to advance the country and realize the dream of a strong China lies the significance and purpose of studying MHE, as well as the commitment to speeding up the process of MHE.

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Chapter 7

The Impact of the Expansion of Higher Education on the Rate of Return to Higher Education in Taiwan



Cheng-Ta Wu and Chia-Wei Tang

On April 10, 1994, 200 civic groups including over 30,000 people marched in the streets of Taipei, and in October of the same year, the “League for Educational Reform 4/10” was established. The protesters submitted petitions outlining four main demands: smaller schools and classes, the establishment of more high schools and universities, modernization of the education system, and the formulation of a new body of law pertaining to education. These efforts led to a dramatic increase in the number of higher education institutions, which grew in number from 60 in 1994 to 144 in 2017.¹ During the same period, however, the rate of unemployment among college graduates rose from 2.52% in 1994 to 5.19% in 2017.²

Afzal (2011) found evidence that education is the main factor determining an individual’s economic status and social achievements, and further confirmed that education is the key to the development of human capital. Education can improve the productivity and efficiency of workers and can cultivate the human resources required for continued societal development and growth. The rate of return to education is defined as the economic benefits resulting from a specific educational investment. Mincer’s wage equation based on the ordinary least squares (OLS) method is the most common technique used to calculate rates of return to education. The OLS method uses linear minimum mean-square error estimation to determine

¹Source: Department of Statistics, Taiwan Ministry of Education, http://stats.moe.gov.tw/files/important/OVERVIEW_U03.pdf.

²Source: Directorate General of Budget, Accounting and Statistics, Executive Yuan http://win.dgbas.gov.tw/dgbas04/bc4/manpower/year/year_t1-t24.asp?table=21&ym=1&yearb=82&yeare=106&out=1.

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the degree to which one additional year of education affects an individual's average wage. However, this means that OLS cannot be used to compare the rates of return to education at differing income levels. Quantile regression has also been used to estimate the rates of return to education in different quantiles pertaining to the conditional distribution of wages. This approach provides a more comprehensive picture of return-education dynamics.

Quantile regression has been applied in a variety of disciplines. In education, this method has been used to examine rates of return. Buchinsky (2001) used quantile regression to measure the rate of return to education among women in the United States. Martins and Pereira (2004) explored the relationship between education level and wage inequality, concluding that there is a positive correlation between the two. Ning (2010) examined whether the expansion of education has improved wage equality in mainland China, and argued that the effects of education are less pronounced in lower income groups. Quantile regression can be used to overcome the limitations of OLS, and may be able to shed light on the differences in the rates of return to education at various wage levels.

In this study, we used quantile regression to determine whether the expansion of higher education in Taiwan since 1994 has impacted the overall rate of return to undergraduate education. We also examined the different return rates in various fields of study such as science, engineering, and agriculture.

7.1 Quantile Regression Model

Quantile regression enables us to focus on the effects of explanatory variables on the conditional distribution of the dependent variable. The estimation is based on the principle of minimizing an asymmetrically weighted sum of absolute errors, which can be defined as follows:

$$y_i = x_i' \beta_\theta + \varepsilon_{i\theta} \quad i = 1, 2, \dots, n$$

where y_i is the dependent variable selected at random from sample Y_i ; x_i is the independent variable; θ is a vector of values between 0 and 1; β_θ is a parameter vector; and $\varepsilon_{i\theta}$ is a vector of residuals. Assuming a linear relationship, $\text{Quant}_\theta(y_i|x_i)$ given x_i , the θ th conditional quantile of y_i , can be defined as

$$\text{Quant}_\theta(y_i|x_i) = X_i' \beta_\theta, \quad i = 1, 2, \dots, n$$

where β_θ is the vector of parameters to be estimated ($0 < \theta < 1$). For a linear model, the estimator of the regression coefficient β_θ is

$$\hat{\beta}_\theta = \min \left\{ \sum_{i=y_i \geq x_i' \beta} \theta |y_i - x_i' \beta| + \sum_{i=y_i < x_i' \beta} (1-\theta) |y_i - x_i' \beta| \right\}$$

In this model, various weights can be assigned to absolute values of positive and negative residuals to derive the quantile regression estimator, where β_θ indicates that the θ quantile of y_i increases by β_θ for every unit increase in x_i . When $\theta = 0.5$, we obtain the estimator of the least absolute deviation by multiplying the above estimator by 2, as follows:

$$\widehat{\beta}_{0.5} = \sum_{i=1}^n |y_i - x_i' \beta|$$

In the case where $\theta = 0.5$, quantile regression can also be referred to as median regression (*i.e.*, a special case of quantile regression). The general form of the estimator is written as follows:

$$\hat{\beta}_\theta = \min \left[\frac{1}{n} \sum_{i=1}^n \rho_\theta (y_i - x_i' \beta) \right] = \min \left[\frac{1}{n} \sum_{i=1}^n \rho_\theta (\varepsilon_{i\theta}) \right]$$

ρ_θ serves as a check function, which assigns various weights to positive and negative residuals. It is defined as follows:

$$\begin{aligned} \rho_\theta(\varepsilon) &= \theta \varepsilon && \text{if } \varepsilon \geq 0 \\ \rho_\theta(\varepsilon) &= (\theta - 1)\varepsilon && \text{if } \varepsilon < 0 \end{aligned}$$

Therefore, $\hat{\beta}_\theta$ is the θ quantile of y_i .

7.2 Quantile Regression Results for the Rate of Return for Higher Education

Our data sources included educational statistics from the Taiwan Ministry of Education, the Human Resources Survey Database, and the Survey Research Data Archive (SRDA). The data covered the period between 1994 and 2016. The subjects were employees ranging in age from 22 (the average age of new college graduates in Taiwan) to 65.

Based on the human capital model proposed by Mincer (1974),³ quantile regression was used to derive the rates of return to higher education between 1994 and 2016 as well as the distribution, trends, and determinants during the period. The basic model used gender, city, marital status, education level, company size, work experience, and the square of work experience for preliminary analysis. The square of work experience served as a correction term.

³Mincer's human capital model: $\ln Y = a + b_1S + b_2E + b_3E^2 + \varepsilon$

Table 7.1 Quantile regression results for rate of return to higher education (1994–2016)

Vector θ	0.05		0.25		0.5		0.75		0.95	
Year	β	SD	β	SD	β	SD	β	SD	β	SD
1994	0.187	0.073	0.143	0.028	0.171	0.021	0.159	0.025	0.137	0.070
1995	0.309	0.027	0.208	0.026	0.168	0.021	0.180	0.024	0.233	0.014
1996	0.180	0.109	0.210	0.030	0.227	0.029	0.225	0.024	0.251	0.076
1997	0.081	0.099	0.168	0.028	0.203	0.026	0.241	0.017	0.216	0.071
1998	0.092	0.065	0.170	0.025	0.203	0.032	0.263	0.028	0.190	0.025
1999	0.160	0.016	0.185	0.018	0.200	0.016	0.237	0.039	0.285	0.035
2000	0.056	0.088	0.184	0.021	0.211	0.029	0.288	0.036	0.301	0.027
2001	0.027	0.024	0.165	0.018	0.233	0.033	0.260	0.037	0.275	0.044
2002	0.060	0.098	0.209	0.020	0.221	0.024	0.251	0.015	0.265	0.028
2003	0.153	0.050	0.193	0.024	0.215	0.022	0.209	0.022	0.162	0.022
2004	0.103	0.119	0.189	0.024	0.214	0.018	0.212	0.021	0.239	0.064
2005	0.153	0.041	0.165	0.019	0.191	0.017	0.188	0.024	0.234	0.087
2006	0.023	0.140	0.140	0.020	0.155	0.015	0.218	0.021	0.181	0.020
2007	0.008	0.131	0.163	0.020	0.202	0.018	0.218	0.020	0.212	0.024
2008	0.024	0.060	0.114	0.020	0.189	0.018	0.215	0.020	0.267	0.042
2009	0.166	0.017	0.189	0.007	0.202	0.006	0.224	0.007	0.231	0.017
2010	0.153	0.036	0.199	0.022	0.222	0.036	0.197	0.037	0.126	0.091
2011	-0.030	0.195	0.093	0.038	0.110	0.031	0.136	0.019	0.166	0.060
2012	0.053	0.053	0.105	0.017	0.129	0.017	0.139	0.019	0.235	0.032
2013	0.048	0.103	0.100	0.037	0.108	0.043	0.158	0.040	0.139	0.023
2014	0.153	0.086	0.076	0.034	0.135	0.042	0.185	0.040	0.227	0.039
2015	-0.240	0.438	0.036	0.040	0.144	0.049	0.219	0.055	0.216	0.115
2016	-0.655	0.172	0.003	0.034	0.099	0.029	0.149	0.028	0.118	0.082

Note: β refers to quantile regression coefficients, SD refers to standard deviation

Table 7.1 presents a summary of the quantile regression results for the rate of return for higher education from 1994 to 2016. The quantile regression coefficients were estimated at five θ levels: the 5th, 25th, 50th, 75th, and 95th quantiles.

The results in Table 7.1 can be used to visualize the distribution of the rate of return to higher education (Fig. 7.1), where the X-axis indicates the year and the Y-axis indicates the coefficient of the rate of return to higher education. Based on the estimates for the 0.5 quantile, the rate of return to higher education indicated a gradual decline during this timeframe.

Table 7.2 summarizes the quantile regression results for 2016. Taking education level as an example, the positive coefficient indicates that employees with an undergraduate degree received higher wages than those without one. There were also significant relationships between work experience/wages and gender/wages, suggesting that male employees and those with more work experience earn more. The coefficient for marital status is negative but not significant, which indicates that there is no significant difference in wages between married and unmarried individuals. The coefficient of the square of work experience was negative, suggesting a

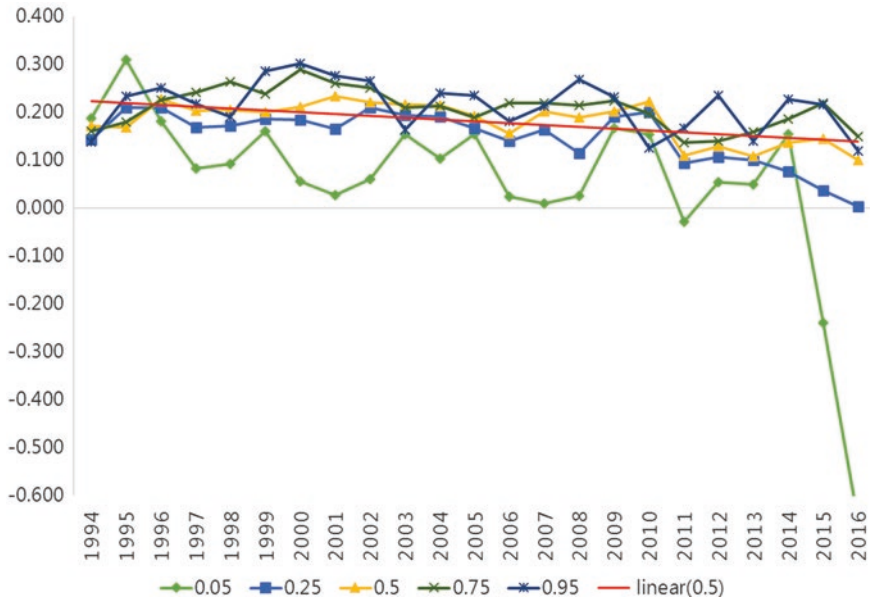


Fig. 7.1 The rate of return to higher education from 1994 to 2016

negative correlation with wages. This is consistent with the assumption of Mincer’s human capital model that age and wages present an inverted U-shaped correlation.

7.3 Quantile Regression Results for the Rates of Return to Higher Education in Various Fields of Study

Based on the SRDA⁴ database, various fields of study were divided into the following ten categories: humanities, law, business, science, engineering, agriculture, health care, military/law enforcement, education, and others. In this study, we used agriculture (with the lowest average wage in 2016) as a reference point by which to compare the rates of return to higher education in different fields of study.

Table 7.3 and Fig. 7.2 list the estimated rates of return to higher education in the 0.5 quantile from 1994 to 2016. These results show that—over the 20-year period of educational reform—employees who obtained education enjoyed the highest average rate of return at 23.8%. Looking back at 1994, health care, education, and humanities had the highest rates of return; whereas engineering, business, and military/law enforcement had the lowest return rates. Over the last 5 years, all fields have seen significant decreases in their rate of return to higher education (except for

⁴SRDA, Survey Research Data Archive. <https://srda.sinica.edu.tw/>.

Table 7.2 Rate of return to investment in higher education in 2016 (partial)

	Quantile	Coefficient	SD	<i>T</i> value	Significance
Constant	0.05	9.5260	0.0225	424.3870	***
	0.25	9.8644	0.0062	1586.2826	***
	0.50	9.9742	0.0067	1498.8952	***
	0.75	10.0760	0.0079	1277.9861	***
	0.95	10.3403	0.0224	461.3845	***
Gender	0.05	0.1128	0.0135	8.3315	***
	0.25	0.1501	0.0050	30.0284	***
	0.50	0.1787	0.0052	34.0827	***
	0.75	0.2179	0.0062	35.3842	***
	0.95	0.2315	0.0169	13.7277	***
Marital status	0.05	0.0336	0.0124	2.7136	**
	0.25	0.0597	0.0049	12.1474	***
	0.50	0.0827	0.0052	16.0393	***
	0.75	0.1204	0.0063	19.0684	***
	0.95	0.2279	0.0161	14.1184	***
Education	0.05	-0.6551	0.1723	-3.8016	***
	0.25	0.0028	0.0338	0.0840	
	0.50	0.0995	0.0287	3.4690	***
	0.75	0.1491	0.0284	5.2523	***
	0.95	0.1183	0.0821	1.4408	
Work experience	0.05	0.0351	0.0030	11.8659	***
	0.25	0.0249	0.0010	25.1862	***
	0.50	0.0265	0.0010	25.9320	***
	0.75	0.0294	0.0011	26.0869	***
	0.95	0.0335	0.0030	11.3414	***
Square of work experience	0.05	-0.0009	0.0001	-8.4458	***
	0.25	-0.0005	0.0000	-12.6077	***
	0.50	-0.0004	0.0000	-10.2838	***
	0.75	-0.0004	0.0000	-9.9491	***
	0.95	-0.0005	0.0001	-4.6398	***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

military/law enforcement where the decline has been far less pronounced). For 2016, law, military/law enforcement, and education enjoyed the highest rates of return, whereas business and engineering saw the lowest rates.

Overall, the rates of return to higher education in most fields of study were unstable or declined during the period from 1994 to 2016. However, the return rates for military/law enforcement grew steadily, whereas the rates for health care remained largely unchanged.

Tables 7.4 and 7.5 compare the quantile regression coefficients in various fields of study using estimates for five quantiles for the years from 1994 to 2016.

In 1994, among lower-income workers, those in the fields of education, humanities, law, and health care enjoyed higher rates of return to higher education. Among higher-income workers, those in the fields of law, science, and health care enjoyed

higher return rates. In the field of health care, we observed a significant difference between higher- and lower-income workers in terms of the rates of return to higher education.

In 2016, among lower-income workers, those in the fields of education, military/law enforcement, and health care enjoyed higher rates of return to higher education. Among higher-income workers, those in the fields of law, military/law enforcement, and health care enjoyed higher return rates.

Table 7.6 summarizes the regression results for the 0.5 quantile in the various fields of study in 2016. Overall, these results indicate a positive correlation between education level and income. Work experience, region, gender, and marital status also demonstrated significant relationships with income. Specifically, employees earning higher wages were those with more work experience, those located in six specific municipalities (the largest cities in Taiwan), males, and married individuals. The square of job experience was negatively correlated with wages, which is in line with the assumption of Mincer's human capital model.

In summary, our results indicate that education, work experience, location in urban areas, being male, and marital status are all significantly correlated with income level, whereas the square of work experience is negatively correlated with income level. During the last 20 years of educational reform, the overall rate of return to higher education has gradually declined, regardless of the field of study. On average, the fields of law, humanities, and military/law enforcement enjoyed higher relative return rates. It is also worth noting that the field of health care had high rates of return among higher-income workers. Military/law enforcement was the only field that demonstrated steady increases during this period, perhaps due to the government's decision to provide financial support for students enrolled in police academies beginning in 1993.

7.4 Conclusions

This study used quantile regression to analyze the rates of return to higher education in Taiwan during the period of educational reform between 1994 and 2016. We focused on the variations in the rates of return to education in different wage quantiles and their distribution over the last 20 years. The results indicate a declining trend in the overall rate of return to education, particularly in the 0.05 quantile. This may be due to the expansion of higher education since 1997, which has resulted in there being 126 institutions of higher education in Taiwan and more than 300,000 graduates in 2016. The expansion of higher education has limited the importance of university diplomas in the search for employment. The consequences of over-education should be explored further and managed carefully.

In this study, we used agriculture (the sector with the lowest average wage) as a reference point by which to compare the rates of return among various fields of study. The results indicate that the field of education has enjoyed the highest rate of return over the last 20 years. The rates of return in all fields, except for military/law

Table 7.3 Rates of return to higher education in the 0.5 quantile for various fields of study

Year	Humanities	Law	Business	Science	Engineering	Health care	Military/law enforcement	Education
1994	0.1490	0.1360	0.0366	0.0846	-0.0055	0.1603	0.0378	0.1547
1995	0.1627	0.1659	0.0627	0.1099	-0.0042	0.2219	0.0713	0.1671
1996	0.1122	0.0767	0.0272	0.0917	-0.0645	0.1513	-0.0040	0.1610
1997	0.1573	0.1204	0.0361	0.1049	-0.0526	0.1830	0.0267	0.2004
1998	0.1393	0.1273	0.0217	0.1279	-0.0162	0.1796	0.0664	0.2117
1999	0.1585	0.1870	0.0234	0.1696	-0.0325	0.1958	0.0847	0.2199
2000	0.1504	0.1316	0.0239	0.1422	-0.0445	0.1846	0.0945	0.1851
2001	0.1743	0.1868	-0.0010	0.1346	-0.0537	0.1910	0.1066	0.2151
2002	0.1517	0.2354	0.0191	0.1360	-0.0294	0.1800	0.1405	0.2437
2003	0.1393	0.2079	0.0325	0.0807	-0.0140	0.2075	0.1727	0.2659
2004	0.1566	0.2110	0.0278	0.1183	-0.0053	0.2126	0.1547	0.2509
2005	0.1201	0.2252	0.0264	0.1515	-0.0156	0.1925	0.2165	0.2491
2006	0.1587	0.2526	0.0498	0.1065	0.0127	0.2177	0.2462	0.2511
2007	0.1098	0.2144	0.0186	0.0646	-0.0202	0.1879	0.2131	0.2247
2008	0.1524	0.1780	0.0184	0.0595	-0.0063	0.1951	0.2195	0.2794
2009	0.1220	0.2316	0.0041	0.0596	0.0111	0.1799	0.2457	0.2542
2010	0.0706	0.2565	-0.0145	0.0594	-0.0361	0.1355	0.2066	0.2078
2011	0.2138	0.3644	0.0946	0.1660	0.0887	0.2713	0.3167	0.3435
2012	0.1552	0.3372	0.0680	0.1525	0.0598	0.2639	0.3230	0.3437
2013	0.1185	0.2949	0.0853	0.1628	0.0739	0.2771	0.3207	0.2987
2014	0.0995	0.3771	0.0634	0.0883	0.0398	0.3133	0.2863	0.2700
2015	0.0786	0.2831	0.0303	0.0948	0.0084	0.2350	0.3248	0.2090
2016	0.1158	0.3489	0.0552	0.0922	0.0560	0.2154	0.3405	0.2745
Mean	0.138	0.224	0.035	0.111	-0.002	0.236	0.183	0.238
Rank	5	3	7	5	8	2	4	1

enforcement, have been declining gradually. This is a clear indication that educational reform should consider the divergent needs of the labor market and reconsider whether the continued expansion of higher education is the best approach to improve human resources.

Finally, we would like to provide suggestions for future work in this area. We recommend that future studies consider using more up-to-date data (this study used data from 1994 to 2016), especially the salary adjustment statistics, which might contribute to a more accurate estimation of the relationship among employees' demographics, work environments, and the rates of return to education in different fields of study as well as the effects of education on the development of human resources. Furthermore, this study was based on secondary data that was limited by the fixed structure of the official database. If we can integrate information collected at different stages of schooling, we can gain a more comprehensive understanding of how each educational stage affects the development of students, which—in turn—will enable us to better understand the contribution of higher education to human capital.

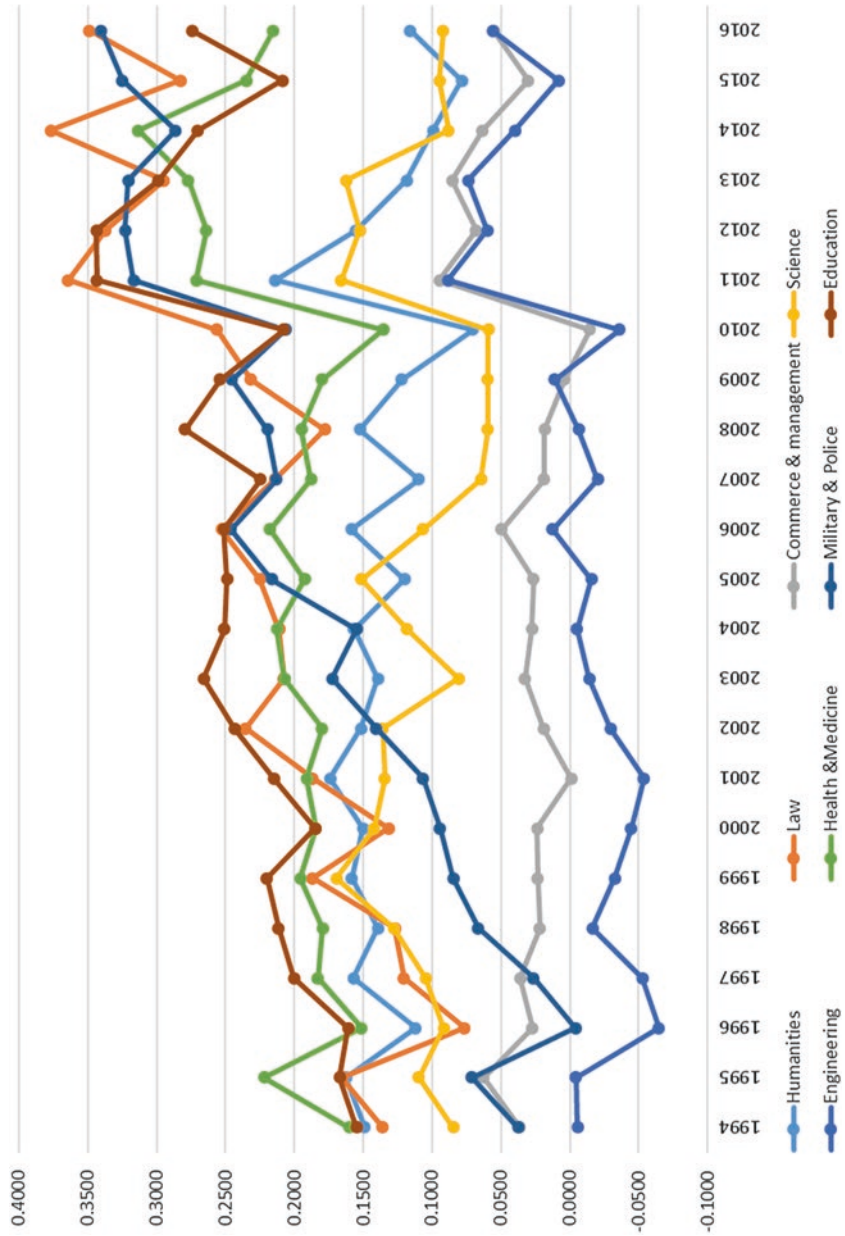


Fig. 7.2 The rates of return to higher education from 1994 to 2016 in various fields of study

Table 7.4 Quantile regression coefficients in various fields of study for five quantiles in 1994

PR (0.05– 0.95)	Humanities	Law	Business	Science	Engineering	Health care	Military/law enforcement	Education
0.05	0.1238	0.1094	0.0458	0.0480	0.0419	0.1082	-0.0946	0.1352
0.25	0.1624	0.1409	0.0770	0.0666	0.0363	0.1786	0.0320	0.1755
0.50	0.1490	0.1360	0.0366	0.0846	-0.0055	0.1603	0.0378	0.1547
0.75	0.1402	0.1571	0.0472	0.1380	-0.0213	0.1865	-0.0027	0.1451
0.95	0.0992	0.4014	0.1118	0.0958	0.0245	0.4749	0.0226	0.1138

Table 7.5 Quantile regression coefficients in various fields of study for five quantiles in 2016

PR (0.05– 0.95)	Humanities	Law	Business	Science	Engineering	Health care	Military/law enforcement	Education
0.05	0.8300	0.7669	0.8435	0.7747	0.8318	0.8867	0.8794	0.9064
0.25	0.1633	0.3277	0.1388	0.1288	0.1401	0.2408	0.4250	0.3028
0.50	0.1158	0.3489	0.0552	0.0922	0.0560	0.2154	0.3405	0.2745
0.75	0.1298	0.4062	0.0464	0.1074	0.0284	0.2696	0.3032	0.2439
0.95	0.1996	0.4719	0.1476	0.1138	0.0824	0.6853	0.2404	0.2144

Table 7.6 Regression results of rates of return to education in various fields of study in 2016

	Coefficient	SD	T value	P-value	Significance
Constant	9.9742	0.0067	1498.8952	0.0000	***
Humanities	0.1158	0.0335	3.4616	0.0005	***
Law	0.3489	0.0704	4.9585	0.0000	***
Business	0.0552	0.0289	1.9119	0.0559	
Science	0.0922	0.0368	2.5070	0.0122	*
Engineering	0.0560	0.0290	1.9319	0.0534	
Health care	0.2154	0.0317	6.7888	0.0000	***
Military/law enforcement	0.3405	0.0338	10.0885	0.0000	***
Education	0.2745	0.0334	8.2078	0.0000	***
Located in six municipalities	0.0378	0.0048	7.8489	0.0000	***
Male	0.1787	0.0052	34.0827	0.0000	***
Married	0.0827	0.0052	16.0393	0.0000	***
Smaller companies	0.0283	0.0096	2.9448	0.0032	**
Medium-sized companies	0.0350	0.0111	3.1552	0.0016	**
Larger companies	0.0769	0.0070	10.9949	0.0000	***
Undergraduate degree	0.0995	0.0287	3.4690	0.0005	***
Postgraduate	0.4111	0.0301	13.6504	0.0000	***
Years of work experience	0.0265	0.0010	25.9320	0.0000	***
Square of work experience	-0.0004	0.0000	-10.2838	0.0000	***

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

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Part III
Curriculum and Instruction Reform

Chapter 8

Japanese Educational Policy and the Curriculum of Holistic Development



Ryoko Tsuneyoshi

8.1 Introduction

Japanese primary and secondary education, alongside their counterparts in other East Asian societies, is often cited as high-achieving (OECD 2010). It has continued to show strong results in international tests such as IEA's Third International Mathematics and Science Study (TIMSS) and the Organisation for Economic Co-operation and Development's (OECD's) Programme for International Student Assessment (PISA) in strategic areas, and Japan-originated educational models have been emulated abroad, the most famous being the Japanese model of "lesson study" (*jyugyo kenkyu*). Lesson study is seen as a bottom-up method of teacher learning in which teachers open up their lessons to others, and teacher discussion is held on how to understand and improve the learning of students. Lesson study now has its worldwide organization and is practiced in various forms in many countries.¹

In short, much has been said about the high cognitive achievement of Japanese students in education. There has been up to now, however, relatively little discussion on how noncognitive education is built into Japanese education. Indeed, some foreign scholars have pointed to the holistic nature of Japanese education (Lewis 1995). Such analyses, however, have mostly been on the cultural aspects of holistic education, not the structural (e.g., curriculum) and policy aspects of it—the focus of this chapter.

Now, the Japanese national curriculum standards have a period of time for non-subject (largely noncognitive) education, which includes activities such as school

¹World Association of Lesson Studies homepage, <http://www.walsnet.org/>, retrieved, August, 2017.

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events, classroom discussion, and student councils. Since noncognitive education is part of the national curriculum standards, this means that any consideration of educational reform inevitably brings in discussions of how to instruct noncognitive learning in Japan. Thus, it is necessary to understand the noncognitive part of the curriculum, in order to understand even the cognitive aspect of Japanese education, which has attracted international attention.

In addition, developing the social and emotional aspects of the child in education is now an international concern (OECD 2015; Goleman 2005). With a long history of combining noncognitive and cognitive learning in the curriculum, Japanese education displays a case in which one can observe a form of how this is done, including the benefits and challenges, and how it enters into the discussion of educational reform policy.

8.2 Reform for Balanced Growth

Figure 8.1 illustrates the system of education in Japanese education today (Fig. 8.1). Elementary school and junior high school are compulsory; however, since the 1970s, over 90% have continued education after this level. Therefore, it is the norm for most junior high school students to attend high school or an equivalent after graduation.

Being a very education-oriented society, teachers have traditionally enjoyed much respect in Japan, and it has been known abroad for its intense examination preparation for the top universities. Especially in the eras following the high economic development of the Japanese economy in the 1950s to the 70s, mass enthusiasm for exam-taking gave birth to terms such as “education mamas” (*kyoiku mama*), “exam hell,” “children who can’t keep up with class” (*ochikobore*), and “*juku*” (cram schools) (Rohlen, 1983; Cummings, 1980; Tsuneyoshi, 2001). Mass media sensationalized the excesses of the exam pressure (e.g., teaching to the test, suicide by those who failed the exam), and for decades, educational policy documents from key governmental committees such as those from the Central Council for Education (Chuokyoiku Shingikai) upheld the rhetoric that Japanese students needed less, not more studying.

Indeed, throughout much of the postwar era, the problem for Japanese policymakers was not low achievement, since Japanese students performed well on international tests and were seen to study hard, but that Japanese students were studying too much for the exams. The goal, therefore, was to loosen the pressure for the notorious Japanese entrance examinations into college (and high school) so that children could grow.

This effort culminated in what was later remembered as the promotion of “relaxed education” (*yutori kyoiku*) in Japan. Contents of the curriculum were selectively dropped, with the intention of leaving more time. At the same time, the principle of holistic development, the balancing of the mind, heart, and the body (*chi, toku, tai*) continued to be reaffirmed.

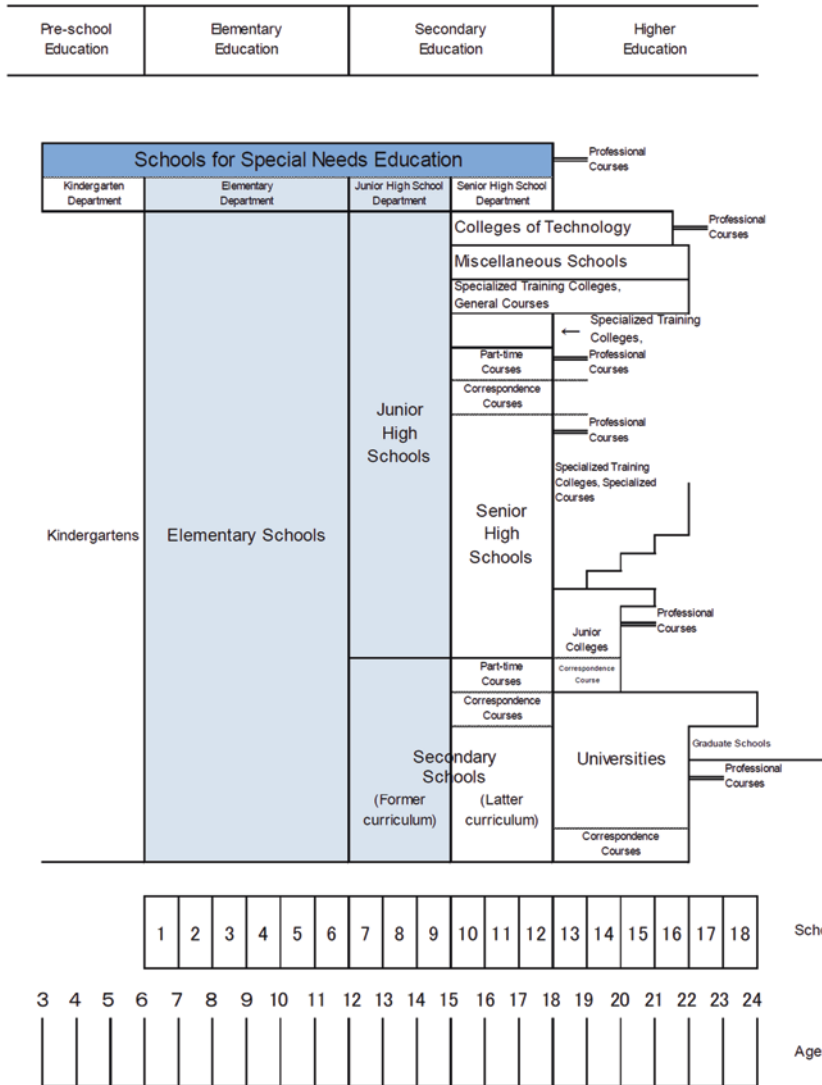


Fig. 8.1 The Japanese Educational System. (Source: Ministry of Education, Culture, Sports, Science and Technology (MEXT) (2015). Guidebook for Starting School: Procedures for Entering Japanese Schools. http://www.mext.go.jp/component/english/_icsFiles/afield-file/2016/06/24/1303764_008.pdf. Retrieved August, 2017)

The 1977 revisions to the national curriculum standards selectively dropped hours from subjects. In the 1989 revisions (implemented in 1992 for elementary school) to the curriculum, the “new scholastic view of education” was promoted. The ability to act independently in the face of a rapidly changing society, the ability to think and judge, the joy of learning, were all emphasized here. A hands-on

subject, life science (*seikatsuka*), was established for the first and second grades, replacing social studies and science.

Such tendencies reached a peak in the 1998 (implemented in 2002 for elementary school) revisions. This reform called for the ability to live well (*ikiru chikara*, translated as the “zest for life”). Children were seen to need to develop the ability to flourish in the fast-changing era of internationalization and scientific progress, facing issues shared with the world as well as issues that particularly affected Japan, such as aging. In the words of the Central Council for Education (1996), regardless of how the society changes, the children of the future need “the ability and capacity to identify problems for oneself, learn for oneself, think for oneself, make independent judgments and actions and to solve problems well” as well as “a rich character” (*yutakana ningensei*), which would allow him/her to collaborate with self-control, while being considerate of others. Physical health was also noted as important. In other words, the balanced development of the mind, heart, and the physique were affirmed. Such capabilities and abilities were “the ability to live” well in the changing society that the children would live, and “it was important to develop these in a well-balanced manner.” It was noted that the so-called “zest for life” was a “holistic ability” (Chuo Kyoiku Shingikai 1996). This ability is not just “rational” (intellectual quality). It also includes the “flexible emotions (*kansei*)” the “heart that can be moved by beauty and nature,” a sense of justice, respect for life and human rights, consideration, etc. as well as “health and physical strength” (Chu Kyoiku Shingikai 1996). Excessive competition for the entrance examinations was once again villainized.

Such revisions in the key concepts of educational reform were backed by shifts in the view of ability. Rote memorization, teacher-centered teaching, whole class instruction, and learning for the exam were all villainized. What was necessary for the twenty-first century was the ability to think independently, to collaborate, and to create. Hands-on learning, problem-solving, child-initiated learning, learning in the real-world, reflection, etc. were all emphasized with much passion (Tsuneyoshi 2004: 369).

Such changes in the view of ability were accompanied by changes in the curriculum. For example, the period for integrated studies (*sogoteki na gakushu no jikan*), which encouraged integration and independent learning, was erected in the 1998 reforms (Monbukagausho 1998). According to the Ministry of Education, Culture, Sports, Science and Technology (MEXT), schools were to design this period to “enable pupils to think in their own way about life through cross-synthetic studies and inquiry studies, while fostering the qualities and abilities needed to find their own tasks, to learn and think on their own, to make proactive decisions, and to solve problems better” (Monbukagakusho 2011b). The period was to include, for example, international understanding, information, environment, health and welfare, and other areas, which were interdisciplinary and which the existing curriculum could not handle sufficiently.

It is at the height of the relaxed education, in the late 1990s, that a sensationalized debate arose about the lowering of achievement in Japanese education. Cram schools, scholars, and Ministry of Education representatives all got involved in this

debate (Ichikawa 2002). Critics went on to argue that the conventional media image of Japanese students as studying too much was a myth. The middle- to lower-achieving students, it was argued, studied less than their counterparts in other major countries (Kariya 2002).

The curriculum that followed was a response to the decades of reform that came before it. The curriculum that is in place from 2017 to the present started from April 2011 for elementary school (2012 for junior high and 2013 for high school, though math and science started earlier). The goal of this reform was that education was “neither ‘relaxed’ (*yutori*) nor ‘cramming’ (*tsumekomi*)”.² The reform reaffirmed the “zest for life” (*ikiru chikara*) as a balanced ability, which combined the education of the mind, heart, and physical strength. Solid intellectual ability, “the richness of the heart” (*yutakana kokoro*), and physical health were what were necessary for “the society of tomorrow which changes dramatically.”³

8.3 A Holistic Curriculum

The first clause of the Fundamental Education Law calls for educating “the character,” “the constructors of a peaceful and democratic nation and society.” The section that follows on “the goal of education” calls for the development of knowledge as well as emotional qualities and values/attitudes, and one’s physical health.⁴ The need to balance the mind, the heart (emotions/values), and the physique are reflected in the proposals.

Now, Japan has a semi-centralized system in which the national curriculum standards lay out the general direction of the curriculum. As was discussed, the curriculum standards are revised every decade or so, in response to the changes in the needs of the times.

Though much attention has been paid to the subjects or periods added, or to changes made in the teaching of certain subjects such as English, relatively less noted in the literature in English has been the basic structure of the Japanese national curriculum standards that aims to realize the holistic framework mentioned above. It can be easily seen that despite the differences in emphasis, the ideal of balancing the mind, heart, and the physical health remains constant.

Table 8.1 is the yearly unit of subjects in elementary school. Life science is a hands-on subject erected to reflect the increasing emphasis on experiential learning, inner motivation, real life, and hands-on learning. The period for integrated studies crosses over subjects, and is again a reflection of the changes in the curriculum toward independent thinking, etc. There are two other periods which are not usual

²From the homepage of the Ministry of Education, http://www.mext.go.jp/a_menu/shotou/new-cs/idea/, retrieved August, 2017.

³Same as above.

⁴From the Fundamental Education Law, <http://law.e-gov.go.jp>.

Table 8.1 The yearly unit hours of subjects in elementary school (school education law)

Grades		1st	2nd	3rd	4th	5th	6th
Hours for each subject	Reading	306	315	245	245	175	175
	Social studies			70	90	100	105
	Math	136	175	175	175	175	175
	Science			90	105	105	105
	Life science	102	105				
	Music	68	70	60	60	50	50
	Art	68	70	60	60	50	50
	Home Economics					60	55
	Phy.Ed	102	105	105	105	90	90
Moral education period		34	35	35	35	35	35
Foreign languages activities						35	35
Period for integrated studies				70	70	70	70
Tokubetsu katsudo (Tokkatsu)		34	35	35	35	35	35
Total		850	910	945	980	980	980

Source: http://www.mext.go.jp/a_menu/shotou/new-cs/youryou/syo/(translation)

subjects, moral education and *tokubetsu katsudo* (*tokkatsu* for short, special activities) (Table 8.1). *Tokkatsu* best represents the holistic nature of Japan's national curriculum standards and has thus been the focus of this chapter.

Table 8.2 (as of 2017) is taken from the national curriculum standards of the “general goal” in the *tokkatsu* goal section. *Tokkatsu* is broken up into several activities, which are at present: classroom activities, student councils, club activities, and school events for elementary school. The specific contents of *tokkatsu* have shifted depending on the time period.

The fact that such activities (e.g., school events) are placed under a specific period, which has educational goals, means that noncognitive elements of education are treated together with the cognitive. The emphasis on social relationships in the goals of *tokkatsu* means that small groups are used extensively in the activities. An example of classroom activities will be given below.

Though some elements of *tokkatsu*, like sports day, can be seen in schools in other countries, the Japanese case provides an example of how the concept of the holistic child operates when built into the curriculum, as part of the official role of education.

8.4 An Example of Content: Classroom Activities (as of August 2017)

As noted above, “Classroom activities” is one component of *tokkatsu* together with school events, club activities, and student councils. Each component has its own goal, which complies with the general goals of *tokkatsu* in Table 8.2. For example, the specific goal for classroom activities is:

To develop, through classroom activities, desirable human relationships, and a self-motivated and practice-oriented attitude to solve various problems, as well as to maintain a healthy attitude toward life in participating as part of the group in the bettering of (every-one's) life in the classroom and school. (Monbukagakusho 2011a)

Though the goals of activities under classroom activities are similar, there are some variations as can be seen in the goal of “school events” below:

To develop desirable human relationships through school events, to strengthen the feeling of being part of a group or to form links, to develop a sense of public responsibility, and to cooperate to encourage the self-motivated and practice-oriented attitude to cooperate to improve school life. (Monbukagakusho 2011a)

Going back to school events, specific events include rituals, cultural events like art exhibition, sports events, excursions and stayovers, and volunteering.

Under each component are more specific contents. For example, under “classroom activities” are its contents as listed below. The contents are broken down by developmental level (grades), followed by common contents across the grades. The common contents listed for classroom activities are as follows (Table 8.3):

8.5 The Structuring of Noncognitive Education

The structure of the Japanese national curriculum standards cuts across subjects and nonsubjects. What is the consequence of placing noncognitive education inside the regular curriculum?

One obvious result is that it becomes institutionalized. All schools nationwide and every single teacher engage in it since it is part of the national curriculum standards. “Standard practices” emerge. The contents tend not to be as clear-cut as math; however, there are signs of noncognitive education in every classroom. For example, in primary school classrooms around the nation, observers would find postings related to what are called “*toban*,” which are those (small groups) in charge of tasks such as cleaning (Fig. 8.2). Classroom discussions and school events are the norm everywhere in Japan. Such structuring of noncognitive teaching will be discussed in the next section. Unlike math, however, which is influenced by academic societies, and the textbooks are set, *tokkatsu* is much more a creation of teachers, though based on the various governmental guidelines. Teachers research groups,

Table 8.2 *Tokkatsu* course of study (elementary school)

Goal
Effective group activities aim at the well-balanced development of mind and body and the encouragement of individuality. Participation in the group helps build an active, positive attitude toward improving life and personal relations. At the same time, it should deepen each child's attitude toward life and the ability to do his/her very best

Source: Translation from Tsuneyoshi ed. 2012, *The World of Tokkatsu*, translated by Mary Louise Tamaru, <http://www.p.u-tokyo.ac.jp/~tsunelab/tokkatsu/>

curriculum specialists, etc. play a large role in structuring the fuzzy area of the noncognitive.

The placing of noncognitive education inside the curriculum also means that there are various research groups by and run by educators as in the case with the subjects. Such research groups hold annual meetings, displaying their lessons, publishing journals, etc.

Other than the institutionalization of the structures supporting *tokkatsu* (or the other extracurricular periods in the curriculum), the existence of such noncognitive education in the curriculum means that every decade or so when the discussions to revise the national curriculum standards take place, there will be reform subcommittees not just for the subjects, but for noncognitive instruction such as *tokkatsu*.

8.6 Development of Characteristic Activities

The situating of particular activities within the national curriculum standards in Japan means that it is the object of lesson study. Teachers around Japan have researched the best methods, not always agreeing, but displaying various practices to each other. There are guidelines from governmental bodies, but they are general enough that teachers can leave their imprint.

I will give here some standard tendencies as examples.

Table 8.3 Common contents of classroom activities in *tokkatsu*, elementary school

(1) Constructing life (<i>seikatsu</i>) in the classroom and school
* Solving various issues that arise in life in the classroom and school
* Organizing the class and dividing and executing the tasks
* Improving the life of diverse groups in the school
(2) Adaptation to everyday life and learning & health and safety
* The development of the attitude to live one's life with a sense of hope and purpose
* The development of basic living habits
* The development of desirable human relationships
* Understanding the meaning of labor and the role of <i>toban</i> activities such as cleaning
* Utilizing the school library
* The development of attitudes toward life which are both healthy and safe for the mind and body
* School lunch, which includes a perspective of lunch education, as well as the development of desirable eating habits

Source: Ministry of Education (2011a)

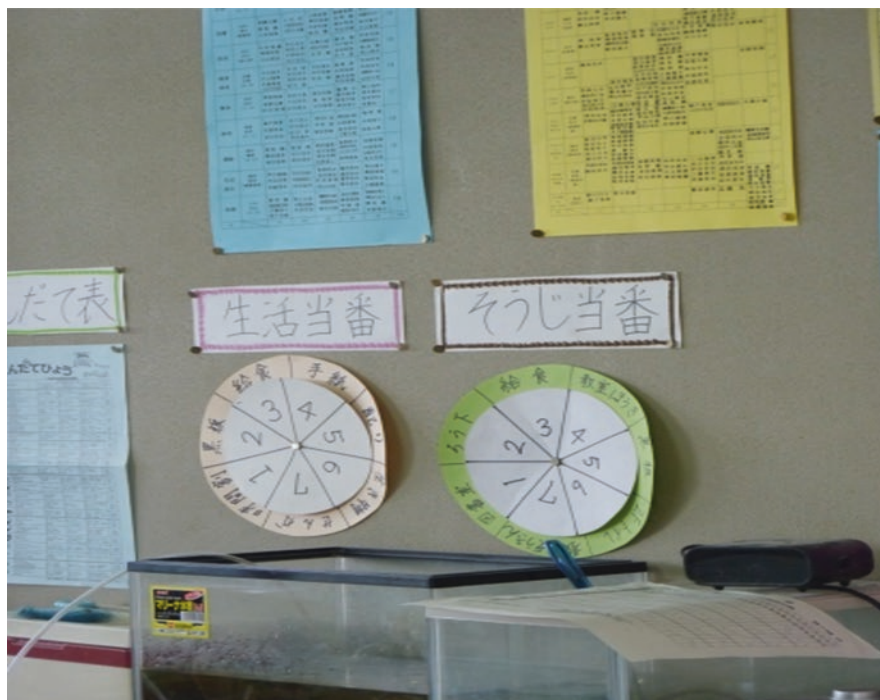


Fig. 8.2 Picture of *Toban* (small groups in charge of tasks) Roulette. (Source: My picture. Left, “*Toban* for Living Matters” and Right, “*Toban* for Cleaning”)

8.6.1 Use of Monitors and Small Groups (*Han*)

Because *tokkatsu* tries to delegate authority to students, and encourage cooperation, certain tasks contributing to the welfare of the class and school are rotated among students. The most famous in the literature in English are the daily monitors (*nichoku*) and the tasks using small groups (*toban*). The class is usually broken up into small groups (*han*), which stay together for a certain period of time and cooperate on various cognitive and noncognitive activities. After a while, the small groups are reorganized, so that children can have the experience of learning how to work together with different people. The groups are usually designed to be heterogeneous (e.g., gender). Though cleaning task groups are famous abroad, there are also small groups in which children can chose the type of activity they want to do, such as taking care of the classroom pet or being in charge of the classroom library (*kakari*).

Figure 8.2 shows one common example of displaying the small group tasks at that time. It is a roulette, with the number of one’s small group in the smaller circle, and the cleaning location of that small group in the larger section (e.g., library). If one looks up cleaning *toban* on the Internet, there are numerous information exchanged by teachers, advising how they motivated children to clean for themselves, and one can download free roulette templates. Alongside more traditional

information routes such as publications/guidebooks from public entities or private companies, the Internet provides a source of information for teachers.

8.6.2 *Role of Teachers*

Since noncognitive activities are in the curriculum, this has led to teacher discussion on what kind of components (e.g., forming and using small groups, use of reflection time, motivation techniques using classroom discussion) and techniques most contribute to the given goal of self-directed, self-motivated, and practice-oriented collaborative behavior.

In elementary school classrooms, this has been closely linked to classroom management--building a classroom community, and the teacher stepping back to become a facilitator. The construction of small groups such as above, as well as various common activities that are initiated by these groups, is an example of institutionalization of noncognitive education. Classroom discussion is a central means by which teachers try to build their classroom communities. If the example of cleaning is taken, children might discuss in class the meaning of cleaning, which might help children realize that a cleaner environment is easier to study in, which might motivate children to clean spontaneously. The process is what is regarded as important, rather than the result of the task. Guests such as the janitor might be invited; the teacher might encourage reflection on the meaning of what the children are doing, whether it is keeping their school and community clean, or whether it is the opposite.⁵

8.6.3 *Learning by Doing Together*

Learning by actually engaging in the activity collaboratively is a major characteristic of these extracurricular activities as outlined in the national curriculum standards. As was noted in the section above, "learning and doing it together" is linked with discussion and reflection, with the teacher trying to act as facilitator, and utilizing various standard ways of organizing children so as to delegate authority. In other words, there is a structuring of daily activities, a system of action toward the *tokkatsu* goal, which structures child-initiated activities and tries to encourage inner-motivated action by "learning by doing" in a collaborative learning setting.

Tokkatsu is not the only extracurricular area which is brought into the curriculum. The period for integrated studies, for example, brings in integration across subjects, discovery, and inquiry.

⁵"Japanese Whole Child Education: Learning from Cleaning and Lunch." *Tokkatsu* Series1, 2015. The Center for Advanced School Education and Evidenced-Based Research, The University of Tokyo, DVD, not for sale.

Tokkatsu is more “doing together” and has more diversity within, since it is a structuring of different extracurricular activities which are as diverse as music events to classroom discussion, though this chapter will not go into the details of other components of the period here. Since learning by doing is a major characteristic of *tokkatsu*, why one is doing something and how one is doing it are most crucial. Cleaning, for example, can be done from a democratic viewpoint or an authoritarian perspective. It is not the act of cleaning itself that distinguishes the two.

It suffices to note here that what fall inside extracurricular activities, and which activities are seen as most important, would differ by society and historical age. Ideally, components within noncognitive education would be interrelated. If we take the example of Japanese *tokkatsu*, sports events, acts of cleaning, etc. should be linked with classroom discussion in which the children discuss the goals, the meanings of such activities, and practice self-motivated autonomous decision-making, as outlined in the *Course of Study*. This also means that noncognitive areas would ideally be linked with subjects. For example, cleaning might be linked with health and physical education.

In this chapter, I have noted that one of the characteristics of the Japanese curriculum today is that it has brought together activities other than the subjects into the official curriculum. What extracurricular activities have been brought in as *tokkatsu* differ depending on the period. Today, it brings together diverse activities of classroom discussion, sports day, art exhibitions, and club activities under one banner. It may be meaningful to note that moral education is the values education portion of the Japanese curriculum, and *tokkatsu* is “learning by doing,” hands-on, and experiential activities; both take charge of different but overlapping areas.⁶

8.7 Ending Remarks

The actual contents of the extracurricular portion of the curriculum changes with the times, even more so than subjects. New subjects have also been erected to reflect what are seen as the needs of the times (e.g., the establishment of the period for integrated studies), but since extracurricular activities include a wide range of activities, bringing them under a common goal in a structured way is a great challenge.

It may be noted, however, that though *tokkatsu* emphasizes group situations, the goal in the national curriculum standards dictating self-initiated student behavior encourages the teacher to step back. The emphasis of learning by doing helps it to distance itself from the ideological swings of the government. By comparison, values education (in Japan, moral education) is more directly related to the educating of values, and its positioning in the curriculum has been a highly controversial one in the postwar era, as has been the contents of history textbooks.

⁶Moral education, whose content and place in the curriculum has been very controversial in the postwar era, is scheduled to become a “special subject moral education” in the 2018 implemented (elementary) national curriculum standards.

That being said, any educational activity which extends to the area of social, cultural, emotional, and behavioral has to be very conscious of its guiding principles. If the principles are democratic, engaging, and child-initiated, the extracurricular activities in the curriculum can complement and strengthen the academic side of the child in a democratic society. History has shown, however, that group activities or holistic education can be utilized for totalitarian, nationalistic, and undemocratic purposes.

Holistic education, the need to widen the sphere of education into the social and emotional, values, etc. seems to be increasingly supported by educational reform proposals in various countries. All the more important is that educators and policy-makers alike remember the guiding principles on which the value of their education depends.

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Chapter 9

Whom Is the National Curriculum for? Politics in the National Curriculum System of South Korea



Kyunghee So

9.1 Introduction

Many countries around the world have implemented education policies in which the central government prescribes a curriculum for schools and teachers to follow. Such policies are rooted in the growing recognition that curricula should play a stronger role in influencing and improving teachers' practice. Policymakers understand that students' educational achievements are related more directly to teaching than to any other factor; as a result, the policymakers have increasingly focused on developing curricula to influence teaching (Sinnema and Aitken 2013). The pace of introduction of state-led curriculum policies has increased since 2000, when the OECD initiated international comparisons of student educational achievements through the Programme for International Student Assessment (PISA). Global competition triggered by PISA, has highlighted the need for quality management of school education at the national level; this has led many countries to introduce a national curriculum system based on which schools, teachers, and classes are controlled. Therefore, in various countries, the national curriculum is now becoming a key leverage point in improving education; policymakers seek to improve education by controlling the curriculum at the national level.

The top-down curriculum policies implemented in many countries aim to provide a better, more equitable education for all students. This hope has been strengthened by the PISA-recorded outstanding educational achievements of East Asian countries, such as Korea, Hong Kong, and Singapore, which have long had national curricula. Following the United Kingdom, which introduced the national curriculum system in 1988, English-speaking countries, such as Australia and New Zealand, have also adopted this system. The United States has also developed the Common Core Standards at the federal level; schools and teachers in all 50 states are required

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165

to follow these guidelines. However, the national curriculum model in which the central government prescribes curricular content and teaching methods in detail has been strongly criticized for forcing teachers to become technicians, carrying out a predefined process (Masuda 2010; Priestley and Biesta 2013; Taylor 2013).

Recent discourses affecting world education policy have emphasized the role of teachers (OECD 2005; Barber and Mourshed 2007). Countries with national curriculum systems have kept pace with this trend, reducing the amount of content prescribed at the national level and developing policies that increase school-level autonomy, which allows educators to make decisions about the curriculum (Sinnema and Aitken 2013). This is a crucial change, which deviates from the policy direction of the past that de-professionalized teachers through prescriptive curricula and strict control (Priestley and Biesta 2013). This new form of national curriculum policy reduces detailed government instructions on educational content and methods, allowing teachers to become active developers of the curriculum (Priestley 2011). This change is evident from the frequent use of rhetoric that emphasizes the autonomy of teachers and projects them as agents of change in the national curriculum policies. However, as these new policies also include gradually expanding systems of accountability, there is controversy over whether the new approach really guarantees teachers any more autonomy than the previous prescriptive approach. While detailed government-led curricular prescriptions are disappearing in many countries, efforts to replace them by control over educational output have increased (Priestley et al. 2015).

South Korea has witnessed several revisions to its national curriculum system since its introduction in the 1950s; thus, a rich discourse on the national curriculum system exists. South Korea faced difficulties in designing and developing modern education owing to Japanese colonial rule for 35 years in the early twentieth century, 3 years of US military administration after liberation in 1945, and the Korean War from 1950 to 1953. Since the Korean War, however, South Korea has achieved rapid educational growth in a short period of time; it has been consistently ranked at the top in all areas monitored by PISA since 2000 (So and Kang 2014a). The national curriculum has played a crucial role in enabling South Korea to achieve such remarkable educational results in a short period of time. Introduced after the Korean War, the national curriculum stipulates guidelines on every subject that is taught during the 12 years of elementary, middle, and high school, setting the content and class hours for each subject. As the national curriculum has powerful legal authority, public and private schools and teachers in all regions have to follow the government guidelines. The long-established national curriculum system has provided a common set of standards for school education, guaranteeing equal educational conditions for all students across South Korea and helping to improve their educational achievements.

In the early days, the national curriculum documents contained highly detailed prescriptions for educational content, leaving schools and teachers with little flexibility or autonomy to make decisions about the curriculum. The education policy first began to change in the early 1990s, when the government implemented an autonomy policy that gradually gave regions and schools the discretion to make

decisions about the curriculum. There have recently been efforts to reform the curriculum to overcome a school culture focused on college entrance examinations (associated with the chronic ills of Korean education) in order to increase student happiness and well-being. This proposed change highlights a policy discourse that calls on teachers to be agents of change. However, despite several revisions of the national curriculum to improve school performance, there has actually been little change in schools. The issue of reform without change (Cuban 1988; Spillane 1999; Tyack and Cuban 1995) is becoming a point of controversy in South Korean society as in other countries.

Education policy reflects the values and intentions of policymakers, not only providing the means to govern the actual actors of education, but also influencing their thoughts and behaviors (Grimaldi 2012; Popkewitz 1991). In particular, the national curriculum exerts diverse and subtle forms of influence over school settings because the framework itself is seen as constraining teachers (Ball 2006). South Korea has had a national curriculum system for many years; the national curriculum has been constantly revised in various historical and social contexts, maintaining a powerful influence over schools and teachers. A review of South Korea's national curriculum system can help us understand how tension and controversy work around the national curriculum and how the system can influence schools.

This study aims to provide insight into the complicated and sometimes contradictory role of the national curriculum and its impact on actual school settings by reviewing South Korea's national curriculum reform process over the last 60 years. To this end, the present study focuses on the following two topics. First, it reveals the politics of national curriculum reform by providing historical–sociological explanations of South Korea's national curriculum reform. Second, it explores how the national curriculum system influences school education.

9.2 The Changing National Curriculum Policy

As curricular reform is highly contextual and often political, it is always tailored to the society, culture, and education system of the country in which it occurs. The South Korean national curriculum was established in a unique historical and social context; it has been revised every time there has been a change in political power. Korea had a ruling dynasty until the early twentieth century and was ruled by Japan from 1910 to 1945. After liberation, South Korea officially formed the government of the Republic of Korea in 1948 and established a national curriculum system. Initially, the South Korean national curriculum focused on forming a nation with a unique South Korean identity, using a curriculum strictly laid out by the central government. However, since the establishment of a civilian government in the 1990s, the national curriculum has promoted a more autonomous and diversified style of education. The recently revised national curriculum argues that the happiness of students is the nation's top educational priority. The following section provides historical–sociological explanations of these changes to the Korean national curriculum.

9.2.1 Forming an Intrinsic Identity as Koreans: Building the Nation as a Homogeneous Group

With its liberation from Japanese rule in 1945, Korea was divided into South and North, under the military administrations of the US and the Soviet Union, respectively. During its 3 years of military administration, the US aimed to imprint its own democratic ideology and system on South Korean society. The US military authorities led educational reforms, with the cooperation of the Korean education authorities. As a result, the foundation for the current school system (six years of elementary school, three years of middle school, three years of high school, and four years of university) and the compulsory education system was established. The period of US military administration also served as a momentum for South Korean education to proactively introduce and accept US educational ideas. Some scholars developed the so-called “New Education Movement” under the influence of US progressivism, which helped to introduce a child- and life-centered curriculum to the school setting. In particular, during this period, the “syllabus,” a set of guidelines to be followed by South Korean schools, was provided, and it became the foundation upon which South Korea could later establish its own national curriculum system (So et al. 2012).

The rule of the US military administration was terminated with the official establishment of the South Korean government in 1948. The Education Act, enacted in 1949, gave the new government the authority to implement an independent and democratic system of education. However, the Korean War broke out in 1950 and lasted until 1953, when South and North Korea reached an armistice agreement. South Korea’s most important postwar education policy was to make elementary school compulsory. This policy was based on the ideological conviction that education was a major driving force of national development. It quickly had an effect. By the 1960s and 1970s, South Korea had achieved complete school attendance, not only in elementary school but also in middle school (Park 2015). Another meaningful postwar event was the establishment of a national curriculum to regulate all schools in South Korea. As a result, South Korea came to have a single standardized curriculum, based on the standards by which all schools and students nationwide were efficiently controlled.

The national curriculum initially emphasized nation-building. The 1948 constitution stated that the nation was the source of political agency in South Korea. However, actual nation-building was achieved through the national curriculum. As a nation consists of members of a specific country, it is very important for those members to form a shared national identity. A nation’s most critical requirement is to have active subjects who perceive themselves to be members of the country and who voluntarily participate in various activities of the country (Hwang 2015). Since development of nationhood was a very complicated, long-term process, it was inevitable that the government would apply some legal force. The national curriculum was a key mechanism for shaping the national identity of children and adolescents. The national curriculum was designed to have two types of agency: political and

economic. Politically, the curriculum aimed to develop obedient citizens who were voluntarily and actively devoted to the country; economically, its goal was to produce efficient, productive citizens to vitalize the national economy (Hwang 2015).

The policy most extensively implemented through the 1950s' national curriculum aimed to develop political agents through moral education. Resistance to American-style liberal values from the US military administration period as well as the cold war between South and North Korea generated a desperate need for a system of education that promoted national identity and collective ethics. For this reason, the first national curriculum, established in 1954, emphasized moral education; since that time, this aspect of the curriculum has been strengthened, evolving into an independent subject called "ethics" that remains part of the curriculum today. Moral education included democracy as well as nationalist ethics and anticommunist education. However, democracy was presented as an ideology opposed to communism in the confrontation with North Korea as well as a fundamental political ideology of the state; it was thus quite different from American democracy. Moral education used the ethics of nationalism and collectivism to redefine democracy by attempting to deny individuals their own agency as individuals and forcing them into a group. Moral education was an educational plan designed to form a collective nation.

The attempt to make the nation an obedient political subject through the national curriculum was accelerated when a military government was established, following the military revolution of 1961. This government tried to emphasize the distinct identity of Koreans by incorporating national ideological training into the school curriculum. National ideological training included anticommunist education, which emphasized the hostile relationship with North Korea, and "Korean-style democracy," an interpretation of Western democracy that was adapted to the South Korean context (So et al. 2012). In particular, a Charter of National Education, incorporated into the school system in 1968, served as the basic text for forming the nation and shaping Korean identity. Korean history education, which was a mandatory subject from elementary to high school in the 1970s, also contributed to the nation-building through the organization of contents identifying the state with the nation.

The national curriculum was also used to turn the South Korean population into efficient economic agents. After the Korean War, vocational education and technical education were strengthened in order to revitalize the national economy, which was impoverished after years of war. During the 1960s, South Korea was in the midst of industrialization, and the principal role of education in this period was to provide the massive workforce needed to industrialize the country. However, despite this policy, Korea's leaders still felt that it was more important for the national curriculum to create a disciplined population motivated by nationalism than the rational economic agents required by modern capitalism (Hwang 2015). The government implemented its curriculum policy to let school education help citizens acquire modern knowledge as well as develop disciplines needed to secure a workforce with a modern work ethic. While the national curriculum of that era was designed to nurture an efficient economic workforce, it emphasized disciplines and ethics used to tame citizens, so as to mobilize them to enact national policies.

In short, South Korea's early national curriculum fostered obedient political agents, using nationalist education on the one hand, and tried to create efficient economic agents to drive modernization and industrialization, on the other. The national curriculum has played a role in nation-building, with an intricate emphasis on these two goals. The policy lasted until the 1980s, alongside the military government.

9.2.2 Toward Autonomy and Democratization: Increased Autonomy for Schools and Teachers

The technical form of the national curriculum can either improve the quality of all students' performance by determining the conditions in schools and classrooms or lower the quality of educational achievement by disrupting professionalism in schools and classrooms (So and Kang 2014a). In Korea, the guidelines set forth in national curriculum documents have violated the autonomy of schools and classrooms by strictly controlling the curriculum of all primary and secondary schools nationwide. The government has prescribed in detail the subjects to be taught during each year of school, the hours required for each subject, and all educational content. In the 1990s, the Korean national curriculum policy underwent a remarkable change. Korean society faced a huge turning point, following the democratization movement of June 1987. This democratization trend questioned the standardization of school curricula created by excessive government control of education. The revised national curriculum in 1992 attempted to provide each region and school with opportunities to make decisions about the curriculum. The establishment of "optional activities," creative educational activities that schools could organize on their own to meet unique educational needs or student demands, was a typical provision under this policy (Ministry of Education 1992).

The direction of Korea's national curriculum policy faced a qualitative change when a civilian government was established in 1993. The civilian government changed the direction of national education, focusing more on nurturing democratic citizens and breaking away from the nationalist, anticommunist ideology emphasized by the previous military governments. Given the rapid development of globalization since the 1990s, Korea's national curriculum has focused on fostering democratic citizens who are able to cope with globalization.

The Kim Young-sam government (1993–1998), Korea's first civilian government, established an education reform plan that was qualitatively different from those in the past. Specifically, it aimed to help Korea be part of globalization and informatization that characterize the twenty-first century (Commission for Education Reform 1995). In its "May 31 Educational Reform," carried out in 1995, the government established that the main direction for educational reforms would be liberalization and democratization. The government shifted its direction away from supplier-based one-way education toward a consumer-focused autonomous and

open form of education. These educational reforms fully introduced neoliberalism to the field of education, indicating that an emphasis on regional- and school-level autonomy and competition would replace the state-led standardized education of the past. The direction of these reforms provided a foundation for the revisions of national curriculum of the time and later. The revised national curriculum in 1997 promoted a “student-centered curriculum” that would replace uniformity with diversity in education. This curriculum focused on enabling schools to organize and adapt the curriculum to accommodate various aptitudes and levels of students (So 2017).

The subsequent Kim Dae-jung government (1998–2003) and Roh Moo-hyun government (2003–2008) also aimed to reform the national curriculum, based on the educational reform plan presented by the first civilian government. By making more changes to the national curriculum, these governments implemented policies that further empowered the regions and schools to make decisions about the curriculum. However, the curriculum autonomy policy took a new turn when the national curriculum was revised again in 2009, during the Lee Myung-bak government (2008–2013). This revised 2009 national curriculum included various guidelines that allowed schools to make decisions about many aspects of the curriculum. One example was the reduced number of prescribed actions, which previously imposed strict boundaries between each grade and subject. Instead, the new national curriculum enabled schools to autonomously determine how to organize their curricula by using a cluster system that combines several subjects or grades. In addition, under this new system, schools had the authority to increase or decrease 20% of the class hours required by the national curriculum. For high schools, the adoption of this new system of autonomy at the school level left many parts of the school curriculum to the professional judgment of teachers (Ministry of Education, Science, and Technology 2009). Through this series of curricular reforms, an institutional framework was established, enabling schools to exercise autonomy when making curricular decisions.

As discussed above, a series of national curricular reforms since the 1990s have focused on increasing the freedom of regions, schools, and teachers to make decisions about the curriculum. However, nation-building, which was the traditional role of the national curriculum, has not been completely discarded. The traditional aims of the curriculum have remained the same, but the definition of “a good citizen” has changed over time. Civilian governments wanted their citizens to be autonomous, competitive, and able to engage proactively in globalization, rather than strongly nationalist or anticommunist. Such citizens could not be created through one-way government control as in the past, but had to be developed within an autonomous atmosphere. The national curriculum of civilian governments, therefore, emphasized competitive, competent economic agency, rather than political agency within a nationalist group (Hwang 2015). The political agency emphasized by the military-government curriculum were undermined by the democratization process; civilian governments aimed to foster citizens with economic capacity to thrive in the so-called age of limitless competition. Thus, the national curriculum changed direction, from building the nation that would obey its

leaders to developing competent individuals contributing to an increase in national competitiveness. Curriculum policies from the civilian governments, which gradually increased the autonomy of regions and schools in curricular decision-making, provided an essential foundation for educating people who would thrive in a market economy.

9.2.3 Putting Students' Happiness at the Center of School Education: Emphasizing Student Agency

Once PISA began to carry out comparative international research to assess student achievement, many countries began to focus on increasing their own students' academic excellence. The USA, which was ranked lower than East Asian countries such as Korea, Singapore, and Hong Kong in terms of academic achievement, has recently sought to implement a national standard for several subject matters (Zhao 2009). However, despite these efforts by the US federal government, American culture remains less obsessed with easily measured results, such as test scores (McCluskey 2010). As a result, despite a relatively low PISA ranking, Americans show higher happiness levels than citizens from the countries ranked higher than the USA (OECD 2011).

In Korea, the opposite is the case. Despite an enviably high PISA ranking, the student happiness level is always at the bottom of the OECD countries (Park et al. 2010). This shocking result has forced Korean education policy to focus more on student happiness than academic achievement. The Park Geun-hye government (2013–2017) launched a new education vision with a policy that aimed to provide “happy education” helping students find their dreams and talents. Thus, the revised national curriculum in 2015 shifted the paradigm of education from “knowledge-based education” to “happy education” where students enjoy learning. The government adopted two approaches to helping students build happy lives: finding and eliminating the causes of student unhappiness, and actively providing students with opportunities to be happy (So and Kang 2014a). This policy stance has remained in place during the current government (2017–present).

Since 1998, Korea has used a standardized test to diagnose students' academic achievement at the national level. The test is carried out by sampling 1–5% of students in sixth grade (the sixth year in elementary school), ninth grade (the third year of middle school), and tenth grade (the first year of high school) across the nation. Five subjects are assessed: Korean, English, mathematics, social studies, and science. In 2008, the government expanded its sample to include all students in these grades to reduce the number of students who were ranked lower than the basic level of achievement. As a result, the ratio of students below the basic level has consistently decreased; the gap between cities and rural areas has also been reduced. Despite these positive effects, however, overheated competition among regions and schools over the results has resulted in students' increased stress and heavy workload.

After this problem became a social issue, the Korean government made an effort to lessen the burden on students. In 2010, the standardized test started to be taken by second-year high school students instead of first-year students; the number of subjects was reduced from five to three (Korean, English, and mathematics). Elementary schools have been excluded from the standardized test since 2013 (Ministry of Education 2013a). In 2017, the current government drastically change the policy of the standardized test, leaving it up to each city and province to decide whether to carry out the test in middle and high schools. Accordingly, the local education office of each city or province can autonomously decide whether or not to carry out the test. The government samples only 3% of students, analyzes their results, and uses them to establish national education policies. This reform has been carried out despite some concerns that it could cause a decline in academic performance; it clearly demonstrates that the focus of Korea's education policy is directed toward student happiness.

To further relieve student stress, efforts are constantly being made to reduce the amount of learning content and workload required by the national curriculum. Students in Korea continue to be ranked high in every subject in international student assessments, including Trends in International Mathematics, Science Study (TIMSS), and PISA. However, behind such achievements lies the chronic issue of students suffering from extreme mental pressure due to the excessive burden of studying (So and Kang 2014a). This issue has been raised since the 1980s. Student stress is clearly caused by the excessive amount of academic content included in the national curriculum and high level of difficulty of many subjects (Shin et al. 1981). Therefore, efforts have been made to reduce the number of subjects that students are required to complete during the compulsory education period, as well as the number of hours required for each subject.

Despite all these changes, the heavy workload has continued to be cited as the main challenge to overcome throughout several revisions of the national curriculum. A wide range of policies have been implemented to resolve this issue. Every time the curriculum was revised, new policies were introduced, which include reducing the number of subjects that students take, empowering students to choose their own subjects in accordance with their own needs and abilities, reducing academic content in each subject, and carrying forward overly difficult content to the next year's program. The most recently revised national curriculum of 2015 is intended to reduce academic pressure on students by carefully selecting and reducing learning content while focusing on the key concepts that must be learned in each subject.

In addition, the Park Geun-hye government implemented a new policy called the "exam-free semester" to help students pursue a happy life. According to this policy, during one semester of middle school, teachers are given the flexibility to make their classes more student-centered by organizing debates or practical training but not organizing traditional exams. Students are also given a better chance to discover their dreams and talents by participating in various events, including career exploration activities (Ministry of Education 2013b). The exam-free semester was designed to change Korean education into a system that could develop student dreams and

talents. It grew from an awareness that students had low levels of interest, confidence, and happiness because they faced extremely fierce competition in an education system focused on college entrance exams. The exam-free semester was implemented to address these chronic issues in Korean education and to achieve a breakthrough in public education. Some middle schools introduced the exam-free semester on an experimental basis in 2013; all middle schools have offered it since 2016.

The most distinctive feature of the exam-free semester is that students have no regular written exams. Instead, they can participate in and experience various activities during this semester. It is a remarkable change that schools have been willing to give up exams in an education system focused on college entrance. In the past, schools focused exclusively on preparing their students for the college entrance exams. As a result, the students had no chance to explore things they liked or wanted to do; teachers also found it difficult to provide autonomous and creative classes. The 2015 national curriculum reorganized middle-school education, enabling schools to operate flexibly enough to guarantee an exam-free semester. During this semester, teachers can autonomously replace some class hours with experience-based activities that introduce students to different career paths, new academic topics, arts and sports, and club activities.

Previously, school education in Korea had forced students to learn “what was given” without considering their own aptitudes, interests, or needs. Teachers had to follow the national curriculum without their own judgments or interpretations. The exam-free semester is intended to fundamentally change the constitution of Korean school education. During this semester, teachers are expected to identify what their students want to do and to design and operate the curriculum based on their findings. The exam-free semester is a full-scale attempt to focus on developing student dreams and talents, which was previously overlooked in Korean education.

9.3 Effects of the National Curriculum System on Actual School Education

The Korean national curriculum has helped to provide equal educational conditions for students and to increase the educational achievements of all students by providing common standards for school education in Korea. The national curriculum has been frequently revised to provide better education. However, the massive reform of the national curriculum in Korea has not significantly changed actual school practice. Although Korea has established the basis for many changes by reforming the curriculum to ensure a more flexible, autonomous system of education that prioritizes student happiness, these reforms in reality have not been followed by actual changes. Despite reforms in the school education system, there has been little change in actual school practice. Analyzing the impact of the Korean national curriculum system on actual school practice can help to explain why.

9.3.1 *Curriculum Reform for Government: Unchanged School Practice*

Curricular reforms are often political and policy-driven (Fernandez et al. 2008). Uniquely, the Korean national curriculum is revised whenever a new government comes to power. The revision is triggered by the political demands of new governments rather than by the educational demands from schools (Gim 2002). Since national curriculum revisions are accompanied by a 5-year-cycle of regime change, ironic situations—for example, a new curriculum being developed even before the previous one has been fully implemented in all schools—often ensue.

Korean national curriculum documents include both general guidelines and subject-specific curriculum. The general guidelines lay out the ideal human characteristics that the national curriculum should cultivate, goals for each school level, the subject organization for each grade, and the hours allocated to each subject. Each subject-matter curriculum includes specific content for each subject organized in the general guidelines. When a new national curriculum is developed, the general guidelines are developed first, followed by each subject-specific curriculum. Scholars who major in general education studies participate in developing the general guidelines, and subject specialists who major in specialized subjects develop each subject-specific curriculum. The new government always talks about reforming the field of education, and tries to put this rhetoric into practice in the form of education policy during its term in office. Thus, the national curriculum serves as a means of implementing political rhetoric. As a consequence, national curriculum revisions are always led by policymakers in a new government. These policymakers—for example, officials at Cheongwadae (the Blue House) or the Ministry of Education—determine the basic direction of and timing for the revision to actualize the new government’s reform message. Scholars are then invited to develop the general guidelines in accordance with the policymakers’ reform direction. The guidelines they develop are finalized through reviews and revisions by policymakers. Once this is done, each subject-matter curriculum is developed according to said guidelines. During this process, the creators of the general guidelines largely reflect the views of policymakers, forming a sort of hierarchical relationship with the subject specialists.

This “top-down” development process has generated conflicts between the general guidelines and subject-specific curriculum. This is one reason that national curricular reforms rarely lead to actual change in school settings. After a general framework is developed for the subject curriculum, subject specialists are then required to revise each curriculum according to the guidelines. However, although subject specialists seem to appropriately reflect the guidelines, they rarely make actual changes to their curriculum. For example, despite the fact that several governments have implemented a workload reduction policy for students, there has been little actual progress made in reducing learning content or adjusting levels of difficulty (So and Kang 2014b). The lack of change in actual school settings has created repetitive rhetoric: every new government comes up with a

new way of reducing student workloads and reforming the curriculum. In other words, reforms have been constantly carried forward without any actual changes being made.

In fact, subject-specific curriculum have more impact on school practice in Korea than the general guidelines. Teachers of each subject depend almost entirely on the textbooks published by external specialists. The textbooks are based on subject-specific curriculum developed by the government. Therefore, unless changes are made to such curriculum, there is almost no change in the quantity or quality of textbook content or any aspect of school education that depends solely on textbooks. Policymakers assume that, by reforming general guidelines, they will be able to influence the classes taught by teachers. (Cuban 2013). However, reforms that require teachers to change their classes are less likely to succeed than those affecting the structure of the school system only (Tyack 1991). Thus, revised general guidelines results in external changes to the school system but barely generate any real changes in actual classes.

The teachers themselves may be exhausted by the constant revisions to the national curriculum that are made by every new government. In Korea, promises to reform the national curriculum serve as political platforms for political leaders trying to win elections. The government's reform message typically disappears before being properly delivered to schools as the new government takes control. Sometimes a new message contradicts the old one. Given this pattern of political change, teachers stick to their own ways of teaching and wait for the government to be replaced, rather than enthusiastically responding to the reforms. Many teachers regard Korea's frequent reforms of the national curriculum as mere political plans implemented by the government for its own benefit (So 2013). In such a political maelstrom, teachers tend to stick to familiar approaches.

9.3.2 Policy Attention Focused More on New Prescriptions Than on Enactment: Schools That Are Indifferent to Prescribed Duties

The national curriculum is an “input-oriented” policy because it imposes a standard curriculum that all schools must adhere to. However, many Western countries that have adopted the national curriculum system have recently changed into controlling output rather than providing more detailed curricular measures (Priestley et al. 2015). Under the new policy, schools and teachers have the autonomy to make curriculum-related decisions but are responsible for their students' academic achievement that is measured through test-based accountability systems.

Through multiple revisions of the national curriculum, Korea has implemented a policy to reduce the government's curricular prescriptions. Regions and schools have been empowered to autonomously determine certain aspects of the curriculum. However, there are still many prescriptions from the national curriculum that are expected to be followed (Baek 2010; Hong 2011; Jeong and Lee 2011; Gim 2011).

The 2015 national curriculum also details all required subjects for each year of primary and secondary school as well as class hours and educational content. Unlike trends in Western countries, in Korea, the test-based accountability system seems to be weakening; the national academic achievement test does not have much power to assess schools or teachers; and the results do not really control teaching practice. In recent years, individual cities and provinces have been able to decide on whether to take this test or not, further reducing influence of the test on actual classroom teaching.

In Korea, the national curriculum still has considerable power. The curriculum has legal authority to determine the status and content of subjects (Goodson 1994). Many stakeholders, therefore, focus on deciding what should be included in the national curriculum. Subject specialists fight to secure more hours and more academic content for their subjects. Various government departments and stakeholders struggle to incorporate their own interests into the national curriculum (So 2013). As a result, developing the national curriculum takes a great deal of time, effort, and funding, both to convey the government's reform rhetoric and to coordinate the demands of various stakeholders.

Recently, Korean curriculum policy has been heading in the direction of giving schools and regions more freedom to shape the curriculum. The national curriculum is expected to serve as the standard for regions and schools, enabling regional education offices and schoolteachers to develop more detailed versions. Hence, the government's ability to facilitate aligned yet context-sensitive local implementation is a crucial aspect of successful curriculum reform (Pietarinen et al. 2017). However, the Korean government has scant interest in how the new curriculum is enacted. Even though revised national curricula are expected to change and improve schools, the government does not really try to understand what is actually happening in schools. Policymakers and stakeholders are not interested in discussing or taking responsibility for implementing the changes described in national curriculum documents; their lack of interest stands in sharp contrast to the efforts that go into creating those documents.

Moreover, there are many cases in Korea in which national curriculum reforms failed to change the evaluation system. Students in Korea often begin to prepare for the college entrance examination from their early school years. Since high performance in the college entrance examination provides a condition for entering and graduating from top universities, which in turn helps to get a privileged job, students often study for getting into top universities from when they are young. Naturally, most schools provide classes geared toward the college entrance examination. This type of education explains why Korean students have such low levels of confidence, enjoyment, and happiness while learning, despite their high academic achievements (So and Kang 2014a). The national curriculum has been constantly revised to remove the evils of a college-entrance-exam-focused school education system; in fact, the 2015 national curriculum even claims to prioritize student "happiness." However, the college entrance examination still dominates school education. The system itself has not really changed in the direction suggested by national curriculum reforms.

This may be why there is so little interest in implementing a new curriculum within the Korean system, in contrast to high interest in developing new prescriptions for the curriculum. This input-oriented system requires accountability through prescriptions rather than output. Both approaches, whether prescription- or output-oriented, deny teachers' adequate autonomy to make decisions about the curriculum. However, the Korean example shows that the prescription-oriented approach has more room for teacher autonomy than the output-oriented approach (Priestley et al. 2012). In a new-prescription-focused national curriculum system, few policy-makers care how the prescribed curriculum is enacted by teachers or experienced by students. For this reason, Korean teachers do not react strongly to new reforms prescribed by the national curriculum. Instead, the college entrance examination actually controls both teachers' classes and students' lives, which is not intended by the government.

9.3.3 Teachers Disciplined by the National Curriculum: The Absence of Teacher Agency

Recent curriculum policies attempted in various countries around the world have referred to teachers as “agents of change.” This policy trend aims to overcome the criticism that countless national curricular reforms have failed to introduce fundamental changes to actual school settings (Cuban 1988; Spillane 1999; Tyack and Cuban 1995). The repeated emptiness caused by “reform without change” has raised awareness of the importance of teachers' roles and capabilities in changing schools. Accordingly, many countries are working to reduce legal prescriptions and requirements in their national curricula, while simultaneously empowering school-level authorities to make decisions about the curriculum. Scotland has even made its national curriculum legally nonbinding, despite being a national framework, in order to emphasize school-level autonomy. The Scottish national curriculum provides much of its content in the form of guidelines; schoolteachers refer to these guidelines to develop their own curricula, reflecting the interests and learning needs of their students (Sinnema and Aitken 2013).

Since the 1990s, Korea has worked to minimize national control and to increase the power of regions and schools to make autonomous decisions about the curriculum. Korea currently allows regions and schools to autonomously adapt the curriculum to suit their own context, drawing on the guidelines developed by the central government (So 2017). By gradually increasing the teachers' authority to decide the content of the curriculum, the Korean government is presenting teachers as agents of change in educational reform. Teachers in Korea now have a certain power to change and adapt the curriculum.

However, although Korean teachers have the right to adapt the curriculum, they tend not to use this right. In Korea, the teaching profession guarantees a relatively high initial salary and a stable social status, which is why many outstanding academic candidates choose to teach (Barber and Mourshed 2007). However, these

teachers, who were so competent when they were first appointed, become oddly passive in schools, rarely making full use of their expertise. The passivity of Korean teachers is closely related to the fact that Korea has maintained its national curriculum for such a long time (So and Kang 2014a). For teachers who were themselves educated within the national curriculum system, it seems natural to adhere to the prescribed national curriculum. Moreover, the subjects they teach are fully covered in assigned textbooks. For most Korean teachers, implementing the curriculum means teaching “by the textbook,” which is often seen, not just as a learning aid, but as a “standard” or “Bible” to be strictly followed (Jeong 2006; Park 2007). In other words, the national curriculum has become a “closed text” that forces teachers to read in certain ways, rather than enabling them to interpret material or make autonomous decisions (Kim 2007). Within this national curriculum system, teachers have little room to display their expertise or design a creative curriculum.

In sum, Korea’s long-standing national curriculum system has caused the professional lives of teachers to be disciplined by the national curriculum. The old school grammar that required teachers to follow the national curriculum to the letter forced them to constantly reflect on their teaching based on the national curriculum. Moreover, the unchanging textbook system, college entrance exam, and government-imposed academic content all limit teachers’ agency. Although their autonomy has increased in relation to the national curriculum, teachers disciplined by the national curriculum cannot easily discard conventional school rules or customs.

9.4 Conclusion: The Remaining Challenge

In the past few decades, Korea, like other Asian societies, has been through many social, economic, and political changes. Korea was democratized when its military regime was replaced by a civilian government. In response to the global pressure of neoliberalism, Korea has shown interest in nurturing autonomous and competent economic agents, rather than nationalist and collective political agents. The national curriculum has played a leading role in bringing these great changes to Korean society.

The Korean national curriculum, maintained for the past 60 years, has played a positive role in Korean education in some ways. Above all, the system has contributed to providing fair and equal educational opportunities to all students by being implemented in all schools nationwide. The national curriculum has recently been revised to meet the needs of different types of learners, showing that curricular reform can be used to improve equity in education (Sinnema and Aitken 2013). In addition, Korea’s national curriculum has considerably helped teachers who feel uncertain or anxious about teaching by explicitly providing detailed content. Particularly for teachers grappling with large classes, a tough work environment, a lack of experience, or insufficient time to prepare for class, the national curriculum has served as an essential guide rather than a tool of pressure or control. In the long run, it has helped teachers to become skilled and well-informed (Apple 1988; Sloan 2006).

Through multiple revisions of the national curriculum, Korea has established the foundations for a more flexible, teacher-driven approach to the curriculum, as well as forms of education that prioritize student happiness. However, massive reforms of the national curriculum have resulted in little actual change within schools. Although the system of school education has been reformed, actual school teaching has remained the same. This review challenges a few aspects of the national curriculum system in order to bring actual changes into schools.

First, it is necessary to adopt a strategy that interactively and dynamically uses both a top-down and bottom-up approach to school reform. School reform can be carried out in either way (Fullan 2007). In the top-down approach, schools and teachers are viewed as practitioners and consumers of the new curriculum developed by policymakers. By contrast, the bottom-up approach relies on school capabilities and the teaching community to create an innovative learning environment (Leana 2011; Lieberman and Pointer Mace 2008). Like Korea, many countries seek to change their education systems using the top-down approach. However, given that curricular reforms will not succeed unless teachers in school settings change themselves, this approach will not bring actual change to schools. Therefore, it is necessary to consider a strategy that integrates and draws on the strengths of both approaches (Fullan 1994; Hargreaves and Fullan 2012; Ramberg 2014). The new approach will need to provide the basic direction of and framework for school reform in the national curriculum while respecting and supporting the innovative efforts of school teachers.

Second, a shared sense-making process by stakeholders involved in school reform is required. Many school reform studies have shown that success of a reform is related to the way in which the reform is implemented (Priestley et al. 2015; Ramberg 2014). Korea tends to focus on prescribing new reforms rather than implementing them. However, no reform is likely to succeed without a clear understanding of how it will be carried out. Implementing curricular reform entails the translation of the new ideas into new educational practices. The process must involve all stakeholders working to implement the reform in shared sense-making (Hargreaves et al. 2009; Weick et al. 2005). The perceived meaning and significance of the curriculum reform will further guide the actions of the stakeholders involved in the process (Hargreaves et al. 2009). In other words, whether teachers accept or reject the reform is likely to be determined by its perceived meaning and significance. A massive reform of the curriculum cannot succeed in actual schools unless a collective effort is made to clarify and communicate the meaning and significance of the reform among stakeholders including school teachers.

Finally, we should focus on how best to create a structure that promotes teacher agency. Teacher agency refers to the power of teachers to actively and purposefully direct their own professional lives within structurally determined limits (Hilferty 2008). In other words, teacher agency is a pattern of practice or behavior actively adopted by teachers in response to a reform or policy imposed on them from the outside. In recent national curriculum policies, it is often suggested that teachers be

given decision-making autonomy pertaining to the curriculum as a means to change school performance. However, autonomy is not the same as agency. Even if teachers have autonomy, they may fail to achieve agency if they reproduce past behavioral patterns out of habit. Korea has given teachers more autonomy to make decisions about the curriculum, but the teachers have not been proactive in making use of it. Teacher agency cannot be achieved merely by providing autonomy through reduced prescriptions or regulations. The surrounding structure or contextual conditions influence teacher agency (So and Choi 2018). In order to project teachers as real agents of change in schools, it is necessary that national curriculum policies focus on improving the structure and context in which teacher agency can be achieved.

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Chapter 10

History Education in Japan: An Account of Domestic Policy Controversies Over the Past War



Masako Shibata

10.1 Introduction

This chapter deals with a number of important themes of history education, including perceptions of the nation, the notions of collective memory, state policy for education and the interrelationships of these themes. Within this thematic framework, it looks at controversies over the policies of the Ministry of Education for history education in Japan regarding the Battle of Okinawa (March–June 1945)¹ in World War II (WWII), in which the war-time Japanese are remembered as both aggressors and victims. It also explores the geneses of the controversies, trailing the political and social positioning of Okinawa in the process of Japan becoming a modern state from the late nineteenth century.

In Japan and around the world, the war has been interpreted in a variety of perspectives. More often than not, they raised cases in academic and political discussions, which have brought about many ‘histories’ of the war. At the same time, reconciliation among countries and peoples involved in the war became a popular scene. Particularly from the turn of the century, a number of governments and the state leadership began to review the conventional aloof posture on war-time wrongdoings by their country, and try to amend the past injustices by offering official apologies to victims.

Notwithstanding this unparalleled trend of the so-called ‘age of apology’ in the history of modern state, the government and the Ministry of Education in Japan

¹While some textbooks note that the Battle started on 1 April when the US troops landed in the Okinawa Island (main island), while others adopt the starting date of 26 March when the first US troops landed in part of Okinawa Prefecture, the Kerama Islands, where 55% of the ‘group suicides’ took place (Ryukyu Shimpo 2014, p. 38).

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have been having difficulties in accommodating longstanding mistrust and criticisms raised from within towards their policies for history education. The main point of the controversies over the Battle of Okinawa is its treatment in the textbooks of Japanese history, in particular how to describe massive suicides committed by civilian residents in reference to the involvement of the Imperial Japanese Army (IJA) during the Battle.

The arguments of this chapter are threefold. Firstly, the domestic history textbook controversies over the Battle of Okinawa have deep roots of the history within which Okinawa has been absorbed in the Japanese state. Secondly, the controversies must be understood in line with the positioning of Okinawa within the notion of nationhood in the modern Japanese state. Lastly, a lack of policies for critical reviews of war-time events resulted in the tardy development of reconciliation about the Battle and the war in Japan.

10.2 Collective Memory and Policy for Reconciliation

Collective memory has trends. It is socially constructed, reflecting the dominant discourses of society (Halbwachs 1989). Therefore, in principle, collective memory is differentiated from ‘objective’ history. In reality, the history construed by the elites in society largely shares the elements of collective remembering, and often becomes compatible with it (Wertsch 2002: 20). Official interpretations of historical events are inseparable from, or often the direct reflection of, collective memory. Thus, national history is transmitted over the next generations differently along with the metamorphosis of the society.

Unquestionably, collective memory is not the collection of individuals’ memories. In the cases of historical incidents of injustices, the memories of individual victims are sometimes alienated from collective memory, affected by the ‘public’ interest of concerning society. This discrepancy often results in the exposure of victimhood to political whims or the trivialisation of it. Such cases can be found in East Asia where the settlement of WWII was left more ambiguous than in Europe. For example, the Nanjing Massacre had barely been taught in Chinese schools until the death of Mao Zedong and the subsequent rise of Deng Xiaoping, because the history of ‘national humiliation’ was regarded as improper in the midst of nation-building (Mitter 2003). Agonies of A-bomb victims in Hiroshima and Nagasaki had not been discussed eagerly in Japan while the country was striving for national reconstruction, and have become part of collective memory for post-war Japanese along with the growth of anti-nuclear movement around the world.

Official interpretations about the dark side of national history or past injustices are largely affected by public memory. Over the past few decades, depressing histories have drawn intensive political and academic attention. As mentioned earlier, it has been a remarkable phenomenon that a number of governments and the state leadership try to correct past injustices in the form of formal apologies by reviewing the traditionally and broadly accepted perceptions of those incidents. The apologies

were offered to victims who had been treated inequitably and often inhumanely by state authority because of their political creeds, religious faiths or racial origins. Regardless of the time of the wrongdoings—some were done in the remote past and others quite recently—offering such apologies has become a common phenomenon around the world from the turn of the century. Apologies resulted in reconciliation with the victims in some cases, and in others did not. Different results notwithstanding, policy makers in educational arena followed suit. Corrections of depiction and interpretation about those past incidents are reflected on the ideas and practices of public education, notably in history education.

Examples of such ‘amendment of history’, especially on WWII, are many. Apology by the French President in 1995 for the deportation of Jewish residents to Nazi ‘death camps’ was a symbolic one. Another apology to Holocaust victims was followed suit by the Swiss government in 1997. The Japanese Prime Minister stated his ‘deep remorse’ and ‘heartfelt apology’ to the victims of Japan’s aggression during the war and its colonial rule in 1995, although the Japanese case did not bring about lasting reconciliation with the victims, revealing ‘the difficulty of translating the western rhetoric of apology into terms of consistent with non-Western culture’ (Barkan and Karn 2006: 7). As seen above, a growing number of countries have been trying to amend their wrongdoings by offering official apologies to the victims. Barkan and Karn (2006) view such acts as a propensity in recent political discourse, in particular after the end of the Cold War, and argue that this new political vigour is driven by the long-term tactics of the individual governments for constructing more mutually prosperous political and economic relationships in the region and the world. It is true that effective processes of those reconciliations between the victims and the perpetrators largely rest upon the political leadership on both sides, and moral courage especially of the latter. Moreover, there has been a globally growing public awareness of crime against humanity, which enables the legitimacy of the claims of victims to serve as effective political and educational means (Barkan 2000; Bekerman and Zembylad 2012).

Given the new trend in the history of modern states, this chapter explores the case of the Battle of Okinawa, whose treatment in history textbooks by the Ministry of Education has not brought about even a domestic reconciliation of interpretations about the war incident. The next section will demonstrate the points in question about the history textbook controversies on the Okinawan case, before discussing its historical background.

10.3 Policy for History Textbook in Confrontation with Memories About the Battle of Okinawa

The textbook authorisation system was introduced as part of post-war drastic democratisation of Japanese education under the US Military Occupation in Japan (1945–1952). Prior to the reform, school textbooks had been written by the state for

primary schools (1903–1945) and secondary schools (1943–1945). Under the immediate post-war system, the right for authorising textbooks was in the hand of the local education boards. However, in the course of so-called ‘right turn’ with the intensification of the Cold War in East Asia, the right has been in the hand of the Minister of Education from 1955 until now. In the present system, textbook examination is conducted by the Textbook Authorization Research Council (TARC, *Kyokayo-tosho Kentei Chosa Shingikai*), mainly consisting of university professors and schoolteachers along with the Ministry’s examination officers who have teaching experience in higher education.² In general, the TARC announces the results of their examination of textbooks about 2 years before their actual use in schools in April. Unless the publishers get a simple ‘Approval’ or a simple ‘Disapproval’, they revise their textbook(s) based on TARC’s ‘opinions’. After the textbooks are authorised, each local education board selects a textbook of each subject for schools under its jurisdiction. Since 1963, the Ministry of Education has adopted the system of free supply of textbooks for compulsory education, that is, primary and lower secondary education. As of 2016, the Ministry spent 41.1 billion yen (0.8% of its budget) for the free distribution of 100 million textbooks throughout the country (Fig. 10.1).³

Despite its various controversial aspects, the Battle of Okinawa had not been in major disputes in history textbook issues until the 1980s. As will be mentioned later, stories related to the Battle received rather popular attention in the theatre or the literature in the 1950s and the 1960s. In the Battle, over 200,000 people died: 122,228 Okinawans (94,000 civilians and 28,228 soldiers), 65,908 Japanese soldiers from other prefectures and 12,520 US soldiers).⁴ The Okinawa Islands became the only ground battle theatre that involved civilian residents. Consequently, the military operations by both parties took a heavy toll on civilians, about one fourth of the population of Okinawa Prefecture. Among the tragedies that have befallen the war-time Okinawans, the most catastrophic one was a large number of suicides—about 1000 altogether⁵—committed collectively by the civilians during the Battle.

²http://www.mext.go.jp/a_menu/shotou/kyoukasho/gaiyou/04060901/1235089.htm. Accessed 3 August 2017.

³http://www.mext.go.jp/en/about/pablication/_icsFiles/afiedfile/2017/02/15/1374478_001.pdf. Accessed 15 August 2017.

⁴<http://www.peace-museum.pref.okinawa.jp/heiwigakusyuu/kyozai/qa/q2.html>. Accessed 10 August 2017.

⁵The figure in various literatures ranges from 700 to over 1000. In the case of the history textbook controversies over the suicide incident, the number of suicides is generally not a prime concern of dispute. Because of its relative precision, the author adopts the recently disclosed figure of 1143 suicides in 30 cases (Ryukyu Shimpo 2014, pp. 38–39). cf. According to Fujioka (2008) and Watanabe (2008), the number of suicide victims rose in the post-war period, influenced by the government’s policy for extending the coverage of *Senshobyō-sha Senbotsu-sha Izoku-tou Engo-ho*, Act on Relief of War Victims and Survivors brought in 1952, to civilians who cooperated with the military or were involved in military actions. Fujioka argues that an increasing number of survivors and their relatives in the suicides began to claim that the suicides offered their lives to serve the state in the form of group suicides for the purpose of receiving the relief. Regarding the

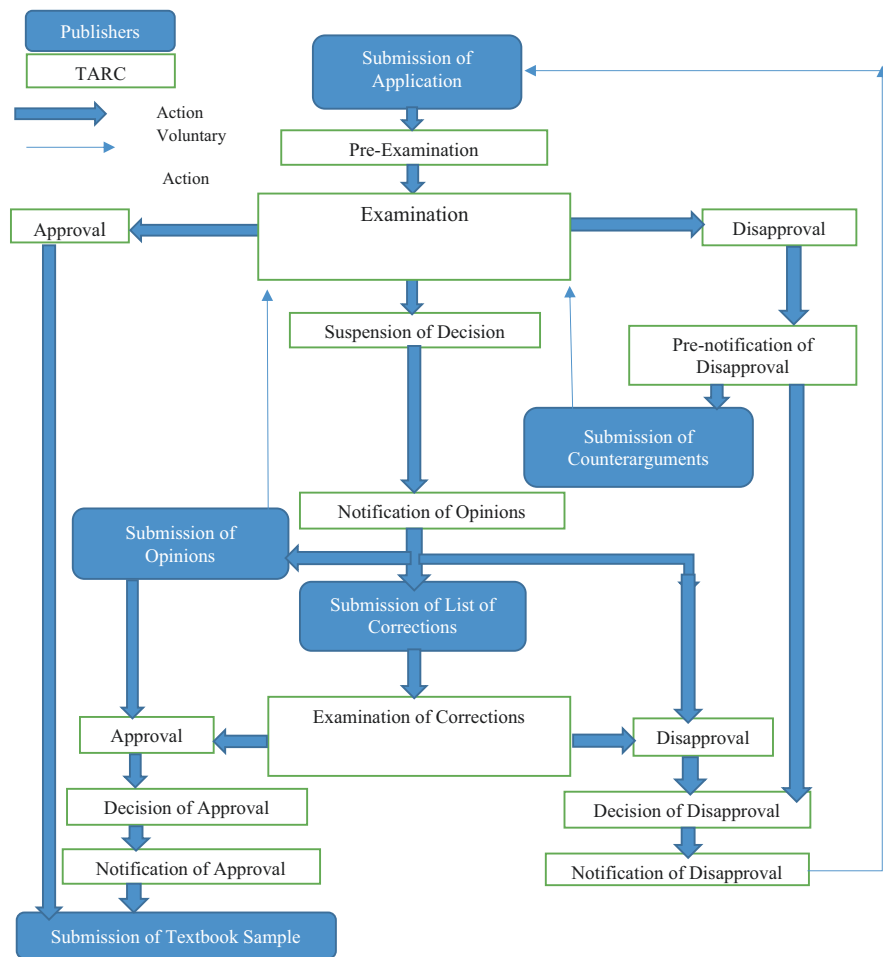


Fig. 10.1 Flow of textbook authorisation process (http://www.mext.go.jp/a_menu/shotou/kyoukasho/gaiyou/04060901/1235090.htm. Accessed 1 August 2017)

In many cases, the self-killings were carried out between family members, friends and neighbours. Why on earth were such tragic mass suicides committed by non-combatants in the war theatre?

A major dispute over the so-called ‘group suicides’—*shudan jiketsu*—arose in the 1980s. It was started after the request made by the examination officers for

application of the Act in Okinawa, the Okinawa local government submitted its petition to the Ministry of Welfare for the coverage of non-combatants, such as student soldiers and student nurses (Ryukyu Shimpō 1953). Okinawa Times (1958) reported a possible rise in the number of ‘war co-operators’, including the group suicides, as the Ministry answered positively to the petition of the Alliance of the War Bereaved in Okinawa to extend the coverage of the Act to those who were 13 years old and younger during the Battle.

adding the suicide incident to a textbook for upper secondary school. The pre-authorisation version initially submitted to the TARC in 1983 stated in a footnote that:

Okinawa Prefecture became a battle field, and about 160,000 Okinawan men and women of all ages died cruelly. Among them, not a small number of people were killed by the Japanese military. (Ienaga 1993: 229)

According to the request, this description would not illustrate the whole picture of the Battle, because the largest number of civilian victims was caused by the ‘group suicides’, which should therefore be included in the footnote. The author of this textbook was Saburo Ienaga who had pursued legal fights against the Japanese government between 1965 and 1997 for his right of freedom of expression in textbook writing and for the claim of the unconstitutionality of the textbook authorisation system as such.⁶ In this case, Ienaga assumed that the intention of the Ministry’s examination officers was to alleviate the horrible image of the massacre committed by the Japanese military by emphasising the ‘group suicides’, *shudan jiketsu*, as the term of ‘*jiketsu*’ would generally connote a voluntary and strong-minded act of self-killing (Ienaga 1993: 232).⁷ Indeed, the ‘group suicides’ were broadly viewed—at least on the governmental side—as the virtuous acts of imperial subjects, who bravely avoided humiliation by the enemy as its prisoners of war (POWs) (Japan Defense Agency 1968: 252). While this textbook was in dispute in his third lawsuit that Ienaga partly won, he rewrote the text. The authorised version appeared as follows:

About 160,000 Okinawan men and women of all ages died cruelly by being killed in bombardment or driven into group suicides. Among them, not a small number of people were killed by the Japanese military. (Ienaga 1993: 232)

A larger controversy ensued in the late 2000s, which provoked massive protests by Okinawans. Based on TARC’s ‘opinions’ given to Japanese history textbooks for upper secondary schools in April 2006, sentences and phrases which indicated the military’s orders to civilians to commit the ‘group suicides’ were rewritten or rephrased. Consequently, all textbooks were approved in March 2007. Many Okinawans regarded this case as a distortion of history about the Battle. In September, about 110,000 local residents gathered a rally to protest the TARC’s opinions for the revisions. After the civic movement, six publishers of eight textbooks submitted their applications to the Minister of Education for his permission to revise the rewritten texts again in November. The Minister asked the TARC’s committee in charge of Japanese history to re-examine the textbooks.

⁶He was also one of the authors of the first post-war history textbook that was issued in 1946 under the supervision of the General Headquarters of Supreme Commander for the Allied Powers (GHQ SCAP).

⁷In its exhibitions and publications, the Okinawa Prefectural Peace Memorial Museum—founded and run by the Okinawa Prefecture—uses the term ‘forced group deaths’, *kyosei shudan shi*, instead of the ‘group suicides’, *shudan jiketsu*.

In its report, a TARC's committee in charge of Japanese history explained its initial decision by arguing that 'recent research and publications on the group suicides show that the existence of such orders is not necessarily evident' (TARC 2007: 6). The report also stated that 'it is not possible to confirm with all Okinawan residents who committed the suicides whether or not there were such military orders to the suicides. ... Thus, it would be proper to avoid definitive sentences about the existence of the military orders' (TARC 2007: 6). The Committee demonstrates their basic understanding as follows:

The group suicides occurred in the extraordinary situations within which civilian residents were dragged into the military battle at the end of the Pacific War. There were intricate backgrounds for this occurrence, such as education, instruction, and the inculcation of certain feelings during the period. In addition, there were various factors which created the situation the group suicides occurred. ... Therefore, oversimplified expressions in textbooks about the backgrounds and the factors which led to the group suicides might not enable students to understand the incident adequately. (TARC 2007: 8)

In short, although the TARC did not deny a certain involvement of the Japanese Imperial Army in the group suicides, it did not accept that there were direct orders to the suicides by the Imperial Japanese Army to that effect.

Unlike the case of the 1980s, this case drew media and public attention outside Okinawa. After the re-examination of the once-rewritten textbooks, the Minister approved the publishers' request for restating the army's 'involvement' in the suicides in their textbooks on 26 December 2007, just in time for their actual use in April 2008. However, the restatement was possible on condition that the publishers should make sufficient reference to contextual information about the Battle and the suicides. In addition, the TARC maintained that the initial expressions about the 'suicides forced by the military' in definitive tones would still be 'misleading'. Okinawa Times (2007) issued a special edition on this case and underscored the voice of disappointment at the rejection of clear expressions about the military's compulsion, while major newspapers, like *Asahi Shinbun* (2007), showed more mixed views, including some appreciation of the reinstatement. The voice of Okinawans was powerful enough to have such political impact. On the day of his approval, the Minister, Kisaburo Tokai, announced his comment by mentioning 'our mission to take the thought of the people of Okinawa' and 'our intension to make efforts to further enhance learning about the Battle of Okinawa' in public education.⁸

The treatment of the Battle of Okinawa is complex, because a simple dichotomy between 'aggressors' and 'victims' does not fully work in this domestic case, considering the recent development of a variety of more complex perceptions about the history of WWII around the world.⁹ It is even more complex in the Okinawan case,

⁸ <http://kohoken.chobi.net/cgi-bin/folio.cgi?index=lb2&query=/lib2/20071226.txt>. Accessed 10 August 2017.

⁹ Shift in historiography from narratives around the theme of nation-state to broader attention to 'everyday life' or 'ordinary people' modified the earlier simplistic dichotomy of victim versus perpetrator in understanding the war history. For example, narratives about war-time Germans as an aspect of victims are seen more than before in the literature and public culture.

because it could be seen not as a completely ‘domestic’ matter in historical viewpoints. To tackle the intricacy of the case, the next section tries to trace how Okinawa and Okinawans were perceived within the notion of the Japanese nationhood by the central government and by themselves.

10.4 A Slow and Complex Genesis of the Textbook Issue About the Battle of Okinawa

10.4.1 *Assimilation and Differentiation of Okinawa in the Process of State Formation*

The modern history of Okinawa has been constantly exposed to policies for assimilation and differentiation both by the central and local governments. Military invasion of the Ryukyu Kingdom was started by a Japanese feudal fief in the early seventeenth century, and it was officially absorbed as Okinawa Prefecture into the Japanese state in 1879 during the Meiji Restoration. However, the political treatment of Okinawa by the central government was not equal to those of other prefectures in ‘mainland’ Japan, for example, delayed introduction of land reforms and conscription. All pre-WWII governors of Okinawa were despatched from the mainland, and few of the local authority officials, such as the Okinawan Bureau of Education, had been Okinawans. Because of its long distance from the metropolitan area and its different climate environment, Okinawa suffered from tardier industrial modernisation than other prefectures. Economic difficulties of Okinawans prompted their emigrations to Hawaii and South America. Between 1899 and 1937, about 10.5% of all Japanese emigrants (641,677) were from Okinawa, the second largest emigration after Hiroshima Prefecture, and the retention ratio of Okinawan emigrants was the highest among all Japanese (Ishikawa 2005: 11–13). In sociocultural perspectives as well, Okinawans had been regarded as an inferior ethnic minority as opposed to the Yamato race, that is, the ‘genuine Japanese’ (Bhowmik 2012). There were social stigmas about Okinawans, which were associated with their Ryukyuan language and some lifestyles nurtured in a semi-tropical climate, unfamiliar to most Japanese people. The idea of ‘Japanese progression’ in terms of industriousness, hygiene and education was also highlighted by that of ‘Okinawan backwardness’, similar to those of Japanese colonies such as Taiwan (1895–1945) and Korea (1910–1945) (Christy 1997).

Nonetheless, Okinawa was not under the jurisdiction of the Bureau of Colonial Affairs unlike the colonies and was definitely positioned in *naichi* (inland) as opposed to *gaichi* (outer territories). In the context of pre-WWII Japan, the policy of *Kominka*—cultivating ‘imperial subjects’ for the state and the Emperor—was imposed upon all children and schools within the Empire. For example, the recitation of the Imperial Rescript on Education and rituals like bowing towards the Imperial Palace in Tokyo were forced to all children, regardless of the location of

schools. However, the cultural assimilation policy of the Imperial Japanese Government functioned in Okinawa with more complexity than in the colonies. Along with efforts to maintain the sense of Okinawan cultural identity among the local people, the Okinawan local government deliberately maintained its policy for making Okinawa and Okinawans genuinely ‘Japanese’ and tried to be recognised as such by the central government.

The policy was reflected in education and other aspects of people’s life. Initially in Okinawa, 14 primary schools were built in 1880, but the attendance of children in the schools was very limited. This was mainly due to economic difficulties and the rejection of ‘Japanese culture’ by the people (Miyagi 1997). Because the Ryukyu Kingdom had long maintained a tributary relationship with the Chinese dynasties, Okinawans felt more familiar with Chinese culture rather than Japanese one. However, coinciding with Japan’s victory over China in 1895, their attitude to the mainland had changed. After the introduction of conscription in Okinawa, 25 years later than in other prefectures, Okinawan males gave up their traditional style of long hair. Women also began to stop their custom of drawing tattoos on the back of their hands. The conventional Okinawan names were gradually displaced by names that sound phonetically more ‘Japanese’. With the rise of Japan as a modern state in international politics and economy, Okinawans began to abandon the culture and lifestyle of their native style and to be inclined to those of ‘real Japanese’ one (Miyagi 1997).

The most illuminating example was seen in the educational policy for language. In 1880, the institution called *Kaiwa Denshusho* was founded to train teachers who could function in the standard Japanese language. As in the major local authorities in Okinawa, the head of the institution came from the mainland. For the overall standardisation of the Japanese language, the Ministry of Education installed the subject of ‘communication’ in the nationwide school curriculum, but eventually abolished the subject except in Okinawa. There, a special textbook, *Okinawa Taiwa*, was issued for the subject. The Ministry of Education also had a special policy for Hokkaido, where there was an ethnic minority called *Ainu*. But the policy for emphasising standard Japanese in Okinawa was apparent in a comparative analysis of the special versions of Japanese language textbooks issued for the two prefectures respectively around the 1990s (Kai 2004: 50–55). Thanks to the ministerial policies and the absorption of them by the public, the attendance ratio of primary schools in Okinawa reached over 90% in the 1910s. The effort for cultural assimilation was made by the Okinawan educational authorities. Pupils were not permitted to use the Ryukyuan dialect after the third week of their entry into the primary school. They were watched with particular care by teachers in extra-curricular activities, for example, excursions, as children would tend to be less tense than in classroom studies (Kajimura 2006). A punishment for the use of the dialect, ‘Dialect Placard’, was introduced (Fig. 10.2).

Once a pupil spoke the dialect, he or she had to keep the placard hanging from the neck until the pupil found another violator. Within the system of mutual surveillance, the use of the local dialect among children was strictly forbidden in public schooling.

Fig. 10.2 Dialect placard, *Hogen-fuda* (©Okinawa Prefectural Peace Memorial Museum)



10.4.2 *Okinawan People in WWII*

As seen in the modern history of Okinawa, policies of assimilation and differentiation had clearly affected the life of Okinawan people. The treatment of Okinawa and Okinawans by the central government and, to a greater extent, by the Imperial Japanese Army had far distressing effects upon their life and history. The Okinawa Islands became the battle ground by the USA landing in Japan's homeland, along with the Ogasawara Islands, including Iwo Jima. However, as noted by the Governor of Okinawa, Okinawans feel that they were the only Japanese who had been forced to experience hardships on the ground battle, as the about 6000 residents of Ogasawara had been evacuated months before the battles began (Ryukyu Shimpo 2014: xvi).¹⁰

Special policy for Okinawa could be seen in the mobilisation of students too. Without an approval in the National Diet, the Ministry of the Army lowered the state-regulated draft age of 17 to 14 for students in Okinawa, Ogasawara and other island territories which were strategically detached from mainland Japan. In Okinawa, male students between 14 and 16 years old were drafted into *Tekketsu Kinno-tai*, Iron and Blood Corps for the Emperor. For females, nine units of student nurse were formed. Among them, the Himeyuri Student Nurse Corps took the heaviest death tolls. A survivor of Himeyuri recalled their experience that (Fig. 10.3):

We grew up during wartime and received an education whose goal was to nurture people willing to die for the country and for the Emperor. And we believed that Japan was fighting a holy war that was to bring happiness to all Asian people, ... But there is no such thing as a noble war. What we experienced in Okinawa was madness, and it was miserable beyond description. (Japan Times 2007)

¹⁰The Japanese government had attempted to evacuate Okinawans to the southern prefectures in Japan's mainland, but both the size of the population and the distance to the mainland hindered many successful evacuations, like the case of a passenger ship, *Tsushima-maru*, which was sunk by a US submarine in August 1944, on its way to Kagoshima Prefecture having 784 schoolchildren aboard.

Fig. 10.3 Two boys of *Tekketsu Kinno-tai* taken prisoner by the US army on 17 June 1945 (©Okinawa Prefectural Peace Memorial Museum). (The original photo data of Okinawa Prefectural Peace Memorial Museum will be attached in the final version)



In history textbooks, those services of Okinawan boys and girls in the Battle were introduced but in a more heroic tone rather than a tragic one. In particular, the stories of the Himeyuri Corps were popularly read in novels and were watched on TV dramas and films in the 1950s and the 1960s.

As noted in history textbooks, Okinawan civilians were killed not only by US bombings from the air and the sea, but also by the soldiers of the Imperial Japanese Army. Some people were killed on suspicion of espionage, because they spoke their dialect which the soldiers did not understand. Others were forced to yield their shelters to the soldiers and were exposed to bombs. In the Yaeyama area, the Army compelled the civilians to be evacuated to malaria-infected mountainous zones, by ordering them to abandon their food and livestock in their residence. According to Yaeyama Peace Memorial Museum, 16,884 islanders in four villages were infected by malaria (53% infection ratio), and 3647 died in total.¹¹

The massive group suicides in question brought about over 1000 death tolls in 30 cases (Ryukyu Shimpo 2014: 38–39). They were committed between the middle of late March and early June 1945. The deaths were caused by hand grenades,

¹¹ The victims and their relatives of so-called ‘Wartime Malaria’ claimed official indemnity by the Japanese government for their suffering based on the Act on Relief of War Victims and Survivors. The government dismissed this claim and setup a special compensation fund for those sufferers instead. The Museum was established by this fund in 1999, as a branch institution of the Okinawa Prefectural Peace Memorial Museum. http://www.pref.okinawa.jp/yaeyama-peace-museum/toukannituite/leaflet_eng.pdf. Accessed 14 August 2017.

improvised explosive devices, dynamites, poison injection, burning, drowning and stabbing. In Zamami village in the Kerama Island, 83% of the group suicides were committed by women, primary school pupils and younger children (Tobe 2016: 55).¹² In other cases too, most victims were women and children. Japan's organised resistance in Okinawa ended on 22 June 1945, when Lt. Gen. Ushijima, Commanding General of the 32nd Army, killed himself to atone for the loss of the Battle. By its end, about 30% of schoolteachers and most students of normal schools lost their lives (Iijima 1972: 3–4).

10.4.3 Okinawa as a 'Foreign Land' in Post-War Japan (1945–1972)

At the onset of US landing in the Okinawa Main Island in April 1945, the establishment of the US Navy Military Government in Okinawa was proclaimed by C. W. Nimitz, US Navy Commander-in-Chief. By the proclamation, he as the 'Military Governor of the Islands of Nansei Shoto and Adjacent Waters' declared that all powers were in him in this area, and suspended the jurisdiction of the Japanese government over this area, including the Okinawa Islands (GRI 1957: 1). The GHQ detached Okinawa Prefecture from Japanese territories in February 1946 and established the US Civil Administration for the Ryukyu Islands (USCAR). Prior to the ratification of San Francisco Treaty in April 1952 whose Article 3 defined the US rule of Okinawa, USCAR formed the Government of the Ryukyu Islands (GRI), the Okinawan's civic authority under the control of the US military government. Okinawa Prefecture had been under the rule of a US trusteeship until its reversion to Japan on 14 May 1972.

Education was resumed informally in the POW camps by US support and control in the situations of extreme shortage of manpower and facilities. By pitching tents, 'schools' were founded, and one of the first schools was started as early as 7 May 1945, with 790 pupils under the 4th grade (395 males and 395 females) and 20 teachers (9 males and 11 females) (Okinawa Education Board 1977: 5–8). The US authorities provided the school with blackboards, music instrument, and other learning and playing equipment. Before textbooks were 'imported' from Japan in 1948, the Department of Education of GRI made textbooks of mimeographed copies. Measures for educational democratisation by the US authorities were taken as in the mainland, such as the suspension of Japanese history, geography and *Shushin* (moral education) and the prohibition of all ultra-nationalistic and militaristic activities. The so-called 6-3-3 school system was introduced in Okinawa in 1948, 1 year later than in mainland Japan. In the case of the mainland, the system functioned relatively well by legal endorsement of the newly established Fundamental Law of

¹²Tobe (2016) argues that this resulted from the 'line of command' which was strictly maintained by the headmen of individual communities in the traditionally patriarchal society of Okinawa.

Education in 1947, but it did not in Okinawa as the enactment of the Law had to wait for 11 years after that (GRI-Education 1972: 54; Kaminuma 1962).

What was particularly unique about US education reforms in Okinawa was emphasis on local culture, including the language, arts and history (Hagiwara 2015). As demonstrated in *Shurei no Hikari*, a monthly magazine published by the US Military Government for Okinawans during the occupation, the US authority clearly intended to value the ideas of American democracy, Christianity and the unique culture of ‘Ryukyu’ and to separate Okinawa from Japan politically and culturally. The Basic Principles in Education were announced in 1953, and an Education Law was enacted in 1957. The US government noted the following principles:

1. The Education Department of Okinawa must not be under the auspices of the Japanese Ministry of Education, because it is against the principle of the establishment of the Ryukyu government.
2. Until the proper education law is enacted, the US government legislates the Ryukyu education laws.
3. The head of the Education Department of Okinawa can define criteria for teacher licences with the cooperation of the Ryukyu University.
4. The US government will support Okinawa to build and reform school buildings as long as the GARIOA¹³ fund continues (GRI-Education 1972: 55–56).

In US-ruled Okinawa, educational democratisation progressed in American ways. Political activities of schoolteachers or gathering were banned by the vetoes exercised by the US Military Government against the bills passed by the Legislature of GRI. The directors of the Ryukyu University were unable to exercise their legal rights without the permission of the US authority (Hayashi 1963). The imported textbooks from Japan had to go through another check by the USA. As in the case of a US ban on a TARC-authorized textbook—*Japanese History: The New Version*—written by Ienaga et al. in 1959, emphasis on US military presence in post-war Japan was not tolerated by the US authority for the use in Okinawan schools (Taminato 2014: 89). During the entire period of the US rule, Okinawa suffered from disadvantage in education not only in terms of financial conditions or infrastructures but also students’ opportunities for proceeding to upper educational institutions and their overall career development.

10.5 Concluding Remarks

Narratives about the victimhood in the Battle of Okinawa in history textbooks have shown distinct political sensitivity in the disputes of textbook controversies over Japan’s war-time wrongdoings. In the case of Okinawa, the war-time Japanese were

¹³ Government Appropriation for Relief in Occupied Area, emergency relief programmes provided for US-occupied areas, such as Austria, Germany and Japan.

remembered as both aggressors and victims. However, the political sensitivity is not only based on the fact that Japanese civilians were killed by the army of their own country. The strategic significance notwithstanding, military and educational policies imposed upon war-time Okinawa reflected how it was positioned in the Japanese Empire and post-war Japan. Okinawans have been exposed to policies of assimilation and differentiation since its absorption into the Japanese state in the late nineteenth century. The policies were imposed upon the people along with the rhetoric of the purity of the ‘homogenous Yamato (Japanese) race’, which was an ideological driving force of Japanese colonialism. Since the onset of Okinawa Prefecture until the end of WWII, or arguably until today, Okinawa has been treated politically, socially and educationally as the ‘others’—if not the ‘stranger’—and recognised as such within Japanese society.

The gap between the public memory of the Okinawans about the Battle and the official views of it by the Japanese government and the Ministry of Education is considerable. On the other hand, the overturn of TARC’s initial decision was unusual in itself, but what was extraordinary in the history of post-war textbook authorisation was the fact that the public voices of war victims made the Ministry reconsider its longstanding conventional views about the history of WWII. In this sense, the case of Okinawa illuminated the extraordinary processes and outcome of history textbook disputes which the Japanese government and the Ministry of Education have been coping with.

Certainly, reconciliation between the victims of the Battle of Okinawa and the state of Japan seems to be far from achievement. It is true that the timing and intensity of policies for reconciliation about past injustices are essentially influenced by contextual changes in international and domestic politics, as shown in Section 1. From the 1980s, the Japanese government and the Ministry of Education too have attempted to set their policies for reconciliation on their political agenda, yet not in its centre. There has been a lack of critical reviews about the wrongdoings committed in the name of the *raison d’État* of Japan as a modern state. In the case of Okinawa, however, a new trend opened by the Okinawan local government is notable. Okinawa Prefecture built the monument of *Hiewa no Ishiji* (Cornerstone of Peace) in 1995 in the Peace Memorial Park on Mabuni Hill, the southern lands’ end of the Okinawa Main Island. It was the place where the Imperial Japanese Army founded its final headquarters in their last and the fiercest organised fight. In the monument, the names of all fallen individuals in the Battle are inscribed, regardless of their nationality or their positions in the Battle.¹⁴ The Okinawan local government has certainly lit a light of hope for a step forward to history education in Japan.

¹⁴According to Okinawa Prefecture, the monument bears the names of 241,414 people: 149,425 Okinawans; 77,417 Japanese from other prefectures; 14,009 Americans; 82 British; 34 Taiwanese; 82 North Koreans; and 365 South Koreans. <http://www.pref.okinawa.jp/site/kodomo/heiwananjo/heiwa/7623.html>. Accessed 15 August 2017. Translations of Japanese texts are by the author of this chapter, if noted otherwise.

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Chapter 11

Education as Design for Learning: A Model for Integrating Education Inquiry Across Research Traditions



Richard Halverson and Erica Rosenfeld Halverson

Education research has an astounding diversity of methods for inquiry and ways of knowing. Education researchers have eagerly adapted methods and ideas from across the social sciences and humanities to understand and improve the complex conditions for teaching and learning within and outside of schools. The abundance of epistemologies, methods, and fields of investigation employed indicates a vibrant culture of professional inquiry. The promise of education as a pathway to opportunity and social justice continues to spark widespread investment, policy development, and advances in practice from around the world. This growing interest in the leading engine of social improvement has resulted in a corresponding increase in the number of scholars drawn to study education. In the USA alone, there has been a 65% increase in the number of education PhDs awarded between 2000 and 2015.¹ This burgeoning growth in education research indicates the robust interest in the field.

Yet, even as education departments continue to flourish and expand, many are troubled by the perceived lack of agreement on what counts as high-quality research. Critics deride “educationists” who work in “diploma mills” for the lack of rigor in their inquiry and for the quality of their professional preparation programs (Feuer

¹U.S. Dept of Education, Degrees in education conferred by degree-granting institutions, by level of degree and sex of student: Selected years, 1949–1950 through 2006–2007 (Table 303). http://www.nces.ed.gov/programs/digest/d08/tables/dt08_303.asp; and Table 318.30 Bachelor’s, master’s, and doctor’s degrees conferred by postsecondary institutions, by sex of student and discipline division: 2014–2015. https://nces.ed.gov/programs/digest/d16/tables/dt16_318.30.asp?current=yes.

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et al. 2002; Levine 2005). Some researchers have situated the “problem” of educational research in the institutional and political culture of education schools (Clifford and Guthrie 1988; Powell 1980). Schools of education are characterized as the “butt of jokes in the university” and portrayed as “intellectual wastelands” (Labaree 2006: 3).

Lagemann (2000) locates the origins of the fractured identity of educational research in the early history of the field. She argues that efforts to achieve respect for this novel field of study led early educational researchers to “emulate their brethren in the ‘hard’ sciences (or at least the more developed social sciences)” (p. xii). Educational researchers latched onto prevailing standards of academic quality in other fields in order to legitimize their own work. The search for respect was compounded, according to Lagemann, by the perceived lower status of people attracted to the field of educational research, which fueled the field’s quest for legitimacy both in higher education and with the public. Labaree (2006) notes that schools of education historically addressed the needs of academically stigmatized populations such as women, children, teachers, and the working class. The work of these groups, who were often excluded from traditional higher education pathways, reinforced a diminished status for education research compared to other fields of inquiry. The need to apply theory to real, complex practices of teaching and learning made education research too applied to be accepted as legitimate theory; the need to belong to a community of higher education made the work too abstract for many practitioners to readily use. The low status attributed to education research, from both inside and outside the profession, has led public leaders to bypass education research in the resolution of legal disputes, in policymaking discussions, or local school governance issues in favor of experts in disciplines outside of education.

The status of education research and schools of education has led to much soul-searching. Some writers have attempted to draw out the defining characteristics of the field in terms of research that is truly educational (Ball and Forzani 2007); others have pushed the discourse toward defining research in terms of what counts as scientific in other fields (Feuer et al. 2002; Slavin 2002). Still others draw on a critical tradition that seeks to cast the effects of education into appropriate social, political, and economic contexts (e.g., Apple 2010; Giroux 2009; Popkewitz 2007). The multivocal expression of education research has led to an uneasy state of affairs in which advocates of disciplinary fidelity within education zealously enforce perceived standards of methodological rigor while at the same time questioning the legitimacy of rivals dedicated to alternative approaches. The quest for legitimacy has distracted educational researchers from “pondering what distinctive characteristics might compromise rigor and relevance in this particular domain of scholarship” (Lagemann 2000: xii). The rhetoric of failure, compromise, critique, and lack of quality and prestige pervades arguments for legitimacy.

Diversity, however, should not be seen as a symptom of discord, dysfunction, and dismissal. Instead, the abundance of interests and methodological variation are the signs of an exciting new area for systemic inquiry. How can we, as researchers and educators, build on this organic diversity of approaches and methods to develop a shared research enterprise? This is the situation we consider in this chapter. We

propose that these various methods, questions and interpretive frameworks share a common commitment to the idea that *education is the design for learning*. The three key concepts in our formula are education, design, and learning. “Education” and “learning” are related terms; they are not, however, synonymous. *Learning* is a natural human process that happens as people interact with the world and one another. We are always learning, whether or not we are learning what others want us to. Education is a process of creating social, institutional, or linguistic arrangements to guide learning toward certain outcomes. Schooling is the most recognizable form of education. Schools are formed when a social group seeks to orchestrate the natural process of learning toward the mastery of certain content and skills. However, education can also unfold in informal contexts. Jean Lave’s classic studies of how Gola and Vai apprentice tailors (Lave and Wenger 1991) or how learning is structured in video game and Internet cultures (Jenkins et al. 2007) show how noninstitutional, informal social arrangements guide learners to develop skills and, in turn, to become teachers of others. Education uses social and knowledge resources to focus learners toward valued outcomes.

The new aspect of our formula is the concept of design. We think of education’s intentional directing of learning toward certain skills and disposition as the activity of *design*. Design typically involves a plan to create something as well as the action taken to bring something new into the world. Education happens when people design learning opportunities for others. In the early days of education, community elders designed environments to teach important cultural knowledge and skills to the next generation. Gradually, a professional class of educators took on this role and designed school learning environments that included teachers, material resources, curricula, assessments, and spaces to guide learning toward valued social outcomes. Formal and informal learning communities similarly orchestrate people, knowledge, social interaction, and assessment to direct learning. These environments are *designed* in an effort to ensure that certain outcomes—personal or communal—are achieved. Education is the process of designing formal structures and informal norms and routines to transform learning “in the wild” toward desired learning outcomes or dispositions.

Following this logic, if education is the design for learning, then education research can be seen as the *study* of the design for learning. Instead of treating the efforts of education researchers as wildly divergent and incompatible quests, a design for learning perspective corrals the diverse methods of inquiry in education into the study of how people build, test, assess, and critique processes intended to guide learning. In the sections that follow, we argue that by using the organizing metaphor of education as design for learning, we can categorize most approaches to education research efforts into three types:

- *Scientific* inquiry measures the effects of education designs on schools, communities, teachers and, most importantly, learners;
- *Practical* inquiry studies how new designs fit into and shape everyday work, and leads to the design of new interventions, practices, and policies to guide education;

- *Critical inquiry creates critical knowledge* about the gap between design and reality through historical, social, economic, or political frameworks in order to reveal hidden, and often unintended, features of new designs.

In an ideal world, each of these types of research would reinforce the work of the others. Practical knowledge would study the current context of practice, and give rise to new designs for learning. Scientific inquiry would measure the results of new designs, and would generate data to inform implementation and redesign. Critique would study the fit between education designs and valued moral and practical principles. Together, these components research could create a powerful practical, theoretical, and scientific discipline of education inquiry. However, the reality of our fragmented world of education research is that each type of inquiry positions itself as at odds with the other two, resulting in a discordant world in which researchers have great difficulty communicating the validity of their methods and results outside their own communities.

This chapter provides a brief overview of each type of education research. We begin with a discussion of how recent efforts at the global and national policy levels have sought to position scientific inquiry as the premiere version of education research based on the model of social sciences. We then discuss the role of practical inquiry as a necessary complement to both receive and generate positivist knowledge. The iteration between scientific and practical inquiry describes a path for how scientific and practical work can be naturally linked in an iterative inquiry for improving education processes and outcomes. However, without a critical perspective, this iterative process can become detached from valued social concerns and become an exercise in optimization, rather than improvement. We propose that critical inquiry should be systemically integrated into the design process for researchers and educators to reflect on both the intentions and consequences of the scientific–practical cycle. We will describe how integrating these approaches concepts of can show the way toward a pathway for systemic innovation in the design of learning environments.

The challenge we consider is how education research can be committed to a shared metaphor of design for learning. We suggest that the seemingly mutually exclusive approaches to education inquiry often presented in the literature might in fact serve as countervailing movements in an iterative design discourse of education research.² The scope of this paper is too modest, though, to attempt a representative overview of all topical domains of education research. Many of the examples are chosen from recent debates on the relation of standards, high-stakes testing, and school accountability policies. We realize that this choice limits the range of examples we will use to illustrate our points, but we hope that the resulting discussion provides a sketch of how the streams of education research might work together as a unified approach to education inquiry.

11.1 Scientific Inquiry

Scientific inquiry aims to improve the quality of education research by developing methods and practices modeled on quantitative social sciences. Scientific researchers create research designs to measure the causal relation between factors that lead to outcomes. Once causality is determined, scientific researchers try to capture the conditions that lead to the implementation of interventions that produce desired outcomes at scale. It also seeks to document how the environmental context influences the implementation of interventions (Duncan and Murnane 2011). Policymakers have made remarkable progress with defining this form of research as the gold standard for educational inquiry by supporting graduate training in and by privileging this form of inquiry as the legitimate voice of education research.

The role of scientific research is to conduct rigorous studies that produce and disseminate evidence of programs and practices that work across variations in context (Feuer et al. 2002). Scientific research focuses on producing predictable, reliable knowledge to guide the work of educators and policymakers. From the scientific research perspective, education is a process designed to produce specified learning and behavioral outcomes. A typical approach to scientific research is to implement an intervention in multiple contexts, and then to compare the results of the intervention with a control group to determine intervention effects (Mosteller and Boruch 2002). The role of this kind of research is to document the degree to which established (and novel) processes actually produce outcomes. These kinds of studies can nominate certain programs for inclusion in sites such as the What Works Clearing House (<https://ies.ed.gov/ncee/wwc/>) as a way for educators to identify high-quality designs for learning.

Scientific research can also examine the inability of education designs to produce desired outcomes. Scientific research in education is typically paired with a moral imperative to create systems that provide opportunities to learn for all students and families. Studying the disparities of outcomes across education systems, specifically in areas of race and income, provides a compelling moral context for this form of education research. Researchers can discover that local actors lack high-quality knowledge to guide the selection and implementation of programs to improve outcomes. In other cases, education systems lack valuable resources, such as curriculum materials, assessments, or learning spaces necessary for improved learning outcomes. Sometimes, local actors themselves are perceived as lacking the skills or resources to appropriately implement programs to improve learning. A high-quality study will document how a given system fails to produce desired outcomes, and will seek to identify the specific factors that prevent the promise of the system to be realized.

Scientific research typically requires large datasets to generate sufficient statistical power to justify inferences about program effects. This approach often creates a considerable distance between the researcher and the local context of practice. Researchers work under experimental conditions to create the best, most reliable knowledge on how interventions can result in desired outcomes. Policymakers use

this knowledge to develop incentives and consequences to motivate compliance with research-based practices. Local actors establish conditions that ensure appropriate implementation of research-proven programs. Researchers re-enter the picture to measure the *fidelity* of program implementation (i.e., the degree to which leaders established the specified conditions for action). Scientifically guided policy work relies on maximizing the fidelity of implementation by reducing unpredictable variation of local actors to undermine intervention effects (Howe 2004; Olson and Katz 2001). Schools and local actors are seen as the site for research, and are valued when they recreate, and do not disrupt, the necessary conditions for appropriate implementation.

In many national education systems, the fidelity imperative is an important guideline for all education practice. Unified education systems select the best curricula, provide appropriate training for educators, create learning environments to optimize implementation, and use complex assessment systems to capture outcomes. While decisions about school management and classroom learning practices are made by local actors, the role of the governmental agency is to guide educators to comply with recommended practices. This approach requires local educators to select the means (programs, assessments, and practices) deemed necessary to produce mandated ends (educational outcomes). It also seeks to establish a public climate that makes it difficult for local actors to resist recommended practices (Slavin 2002).

This emphasis on local compliance devalues the discretionary role that local actors can play in the uncertain process of improving teaching and learning. As Richard Elmore (2000) framed the “conundrum” of systemic reform,

Schools are being asked by elected officials—policy leaders, if you will—to do things they are largely unequipped to do. School leaders are being asked to assume responsibilities they are largely unequipped to assume, and the risks and consequences of failure are high for everyone, but especially high for children. (2)

From a scientific perspective, local compliance is considered as a *theoretical* necessity to produce desired outcomes, but is difficult to rely upon as a *practical* capacity. When scientific policy interventions urge local actors to abandon established practices in favor of research-proven approaches, a variety of incentives or punishments must be provided to encourage compliance (Schneider and Ingram 1997; Stone 2002). From the scientific research perspective, local actors are a troubling source of uncertainty in the effort to produce reliable outcomes for all learners.

Evidence for the pervasiveness of the scientific model is reflected in the contemporary transformation of the “best practices” discourse first into “what works” and, more recently into “evidence-based practice (EBP)”. *Best practices* models emerged in the 1980s to describe techniques that produced good results for educators. Researchers collected and wrote about best practices; professional networks and conferences buzzed with the latest, most interesting “best practices” that emerged from local contexts to address complex problems. The word *practices* was pluralized to reflect a diversity of options. The best practices perspective assumed that practitioners could select from among appealing practices in a particular domain,

and after experimenting, could then contribute a “better” variation on the practice. The advent of the *what works* discourse changed the terms of the relation between interventions and local autonomy. An intervention is only included in the What Works Clearinghouse (<http://ies.ed.gov/ncee/wwc/>) when it meets the standards of (scientific) evaluation:

Currently, only well-designed and well-implemented randomized controlled trials are considered strong evidence, while quasi-experimental designs with equating may only meet standards with reservations; evidence standards for regression discontinuity and single-case designs are under development.²

Scientific research is guided by a priori decisions about which kinds of knowledge are relevant to guide practice. The stamp of “what works” or “EBP” provides a quality assurance for the optimal strategies to achieve teaching and learning outcomes. A best practices approach gathers interventions from local practitioners, and relies on professional communities to continuously test the practices in local contexts. The shift to “what works” and then to “evidence-based practice” uses scientific research to test interventions across contexts to determine which interventions can qualify and how these approaches should be used to obtain predictable results.

The hope for scientific research in education is to bring some measure of predictable quality into the ever-changing context of education practice. Just as medical practitioners are expected to prescribe treatment based on their understanding of the latest academic research, education practitioners are asked to employ field-tested curricula with fidelity. The public expectations for social uplift via education have created a scientific research community focused on finding scalable solutions for improving outcomes for all learners. Both the public and policymakers seek reliable criteria to determine what constitutes high-quality teaching and learning in and out of schools. This struggle to improve schooling in measurable ways is embedded in volatile political struggles over how (and whether) schools can address chronic social and racial inequalities and continue to serve as an engine of economic growth. The scientific perspective frames education research as a technical matter that draws on the rich tradition of social scientific methods to determine the most effective means to achieve agreed-upon learning goals. Scientific research aims to cut through the murky, contested sociocultural issues that cloud discussions of quality in education in order to determine what works for all learners at scale. By defining education as a technical matter of optimizing interventions across contexts, scientific inquiry seeks to define education research as a field that produces the knowledge necessary to guide policy and practice.

²<http://ies.ed.gov/ncee/wwc/references/idocviewer/Doc.aspx?docId=19&tocId=4>.

11.2 Practical Inquiry

One of the key goals of education research is to describe the kinds of knowledge and supports educators use in their practices. Educators design education contexts to improve teaching and learning. Practical inquiry seeks to understand these efforts by describing how educators design environments to meet the needs of teaching and learning. Practical research focuses on how local actors orchestrate education interactions for learning. Practical researchers attend to the ideas and tools that *radiate from* the local context of action. The scientific focus on providing evidence for the quality of interventions does not provide sufficient knowledge or skill to competently establish quality contexts for education (Erickson 2005; Gee 2005). The “what works” model fostered by scientific research does not provide sufficient guidance to shape a practical “best practice” world. Since only a small part of education work involves measurement and intervention implementation, practical research must document and support a much wider range of design practices (Erickson and Gutierrez 2002).

The idea that practitioners, and learners, mainly serve as threats to the fidelity of implementation has led to the observation that the scientific model adopts a “deficit model” of learners and learning. A deficit model assumes that learners contribute little aside from compliance to their learning process, and that the goal of teaching is to cultivate knowledge and skills that are absent in the cultures of learners (cf. Moll 1990; Valencia 1997). A practical research perspective considers deficit thinking as an inappropriate frame for student learning (Harry and Klingner 2006; Tejada et al. 2003). Scientific inquiry adopts a deficit perspective toward the practices of teachers and school leaders as well (Stein 2004). It considers the local skills and abilities of educators as noise that needs to be filtered out in order to study the true effects of an intervention. Practical research thus seeks out noise as a signal to trace how teachers and learners navigate the contexts in which the interventions are carried out. When existing practices are treated as noise to be reduced or eliminated so that what works can be properly implemented, we lose the opportunity to track the “funds of knowledge” critical for understanding how learners draw on prior experiences to make sense of new knowledge and skills (González et al. 2005).

The goal of practical research is to study how teachers and learners create and navigate learning environments. Practical education research adopts a constructivist perspective on research and design. Constructivist theories of learning suggest that people build new understanding on prior knowledge and experience (Kafai 2014). From a teaching perspective, if we know what and how learners know, new processes can be shaped to accommodate prior understanding. This constant, iterative interaction between learners, teachers, and the context is difficult to capture in the design of an intervention. Implementation, from a practical perspective, is the opportunity to observe how educators and learners select from the different features of an intervention to create a learning connection. Practical researchers begin their work by studying how local teaching and learning practices unfold. A practical perspective suggests that we need better approaches to studying practice *as a necessary*

condition for improvement. Practical research is needed to understand why a certain practice is considered as a possibility in a certain context, and why it is not considered on other occasions; why some communities of practitioners rely on a well-established set of organizational routines that another group considers anathema; and how accounts of expert practice can be reframed as possibilities for new approaches. Practical researchers must be able to understand how myriad aspects of discourse and environment “hang together” for local actors, and, more importantly, are able to trace how learners make their way through complex spaces.

Our category of practical research brings together epistemological and methodological traditions that may not recognize their kinship. Practical research includes many varieties of qualitative research, such as case study (Stake 1995) and ethnography (Van Maanen 2011). It includes phenomenological studies that document how events and actions actually unfold as well as grounded theory approaches that build theories to describe why actions occur (Denzin and Lincoln 2011). It also includes quantitative methods, such as latent class analysis (Collins and Lanza 2010) and machine learning (Bishop 2006), that document patterns in large datasets. Practical research also includes traditions that build on insights about existing practices to build new approaches to the design of learning environments. For example, design-based research builds artifacts and learning environments to test hypotheses about practice (Design Based Research Collective 2003), while social design experiments draw on local actors’ expertise for the development of new learning environments (Gutiérrez and Jurow 2016), and methods such as improvement science (Bryk et al. 2015) and usability testing (Nielsen and Mack 1994) use data generated by design processes to optimize innovations. Each of these approaches shares a commitment to draw on insights about current practices as a pathway to knowledge and design.

Practical research seeks to disclose how actors navigate and alter the specific environments of their practice. A challenge for practical research is to identify the *significant* structures, actors, and strategy that matter for improving teaching and learning. Significance, in scientific research, is considered an aspect of the relationship between factors and outcomes—a finding is significant when analysis shows a legitimate connection between the predictor and the outcome. In practical research, significance is a measure of the degree to which actors make sense of their situation. Practical research attempts to capture the contexts, structures, and practices that make local action significant. When researchers enter a vibrant learning environment, they can quickly become overwhelmed with the sheer variety of tools and interactions. Determining which features of the environment are regarded as significant for local actors is an important step in describing relevant practice. Documenting the significant practices/contexts of typical practitioners reveals occasions for authentic pedagogical opportunities to expand local horizons of investigation. Studying what expert practitioners perceive as significant provides insight into which features of local contexts can be highlighted, enhanced, or eliminated, and how best practices mitigate obstacles and find opportunities in contexts that thwart similarly situated colleagues. The challenge for practical research is to identify the

significant structures, actors, and strategy that matter for improving teaching and learning.

Albert Borgmann's (1984) concept of "focal practices" is useful to illustrate the goal of practical research. Borgmann suggests that we are surrounded by taken-for-granted tools that shape the contexts of our lives. Focal practices are formed of tool and interaction networks that direct our activities toward significant concerns. Borgmann uses examples of everyday focal practices such as running and dining to show how we organize networks of tools and actions to achieve our ends. Focal practices fit practical research because they address how we arrange our tools and the routines and social networks through which we engage in teaching and learning. Because focal practices illustrate how we organize the world to achieve our ends, we can compare how actors organize their worlds around focal practices to highlight the variations in how similarly situated practitioners perceive significance.

Researchers in education have long engaged in methods that seek to capture these kinds of focal practices. Deborah Ball and her colleagues (Ball et al. 2005; Lampert and Ball 1999), for example, study how teaching math problems acts as a focal practice to unpack and make public the strategies and prior knowledge teachers bring to bear in their teaching. Julian Orr (1996) takes a similar approach to investigating how Xerox technicians repair machines. Orr uses the "war story" as focal practice to explore how technicians determine and resolve significant aspects of repair problems. Investigations of focal practice phenomena can also be seen in cognitive ethnographies that investigate how local actors use tools and social interaction to create networks of meaning. Hutchins' (1995, 1996) seminal work in distributed cognition, for example, examines how understanding individual cognition alone is insufficient to explain complex technological tasks.

Research on computer-based cognitive tutors and user testing illustrates another path toward studying focal practices. Design-based educational research generates rich models of existing understanding as a consequence of developing efforts to improve learning. Cognitive tutoring (for an overview, see Koedinger and Corbett 2006) develops a model of student understanding in order to appropriately customize lessons. While the aim of building tutors is to improve math learning, an important consequence of tutor design is deeper insight into how students organize knowledge and experience prior to intervention. Testing cognitive tutors typically involves some form of *usability testing*, an iterative process that generates data on design quality from the user perspective. Usability testing provides important data to refine intervention design, while at the same time allowing designers to construct powerful cognitive and behaviorist models of how users encounter new tools. In other words, design and usability testing can be used to reveal existing focal practices. Insights generated by usability testing are often regarded as a kind of residuum generated on the way toward the genuine research end (i.e., improvement), and thus rarely reported as research findings. Practical inquiry explores these residual insights of design to uncover the significant characteristics of focal practice.

Borgmann's analysis suggests that identifying focal practices can reveal focal tools, or artifacts, as significant objects that connect us with our world. In education, artifacts serve as mediational means (Wertsch 1993) designed to influence teaching

and learning. In education, local actors use artifacts such as programs, policies, and procedures to create learning environments to improve teaching and learning in schools (Spillane et al. 2004). Artifacts such as curriculum packages, daily schedules, faculty professional development programs, literacy assessments, data warehouse systems, and union agreements can be found in any school context. Artifacts can be received (or inherited) from outside the school context, or can be designed by local actors (Halverson 2004); they are used to begin, accelerate, and assess change processes (Halverson 2007).

All artifacts are the result of design. Designers build *intentions* into artifacts in the form of *features* that will hopefully guide use. Education artifacts, such as assessments, textbooks, and curricula, include features such as prescriptions for practice, resources to support intended use, consequences for appropriate implementation, and suggestions for how to organize practices. For example, educators design master schedules that include features such as assignments for teachers and students, plans to organize space and instructional time, and provisions to allow teachers to engage in collaborative planning. Users, on the other hand, perceive artifact features as *affordances*. Affordances reflect how users make sense of artifact features. In the example above, the master schedule affords teachers knowing where and when to teach, and guidelines for students on how the instructional day is organized. The gap between features as designed and affordances as perceived is where much of implementation research occurs. Users typically read artifact affordances in terms of prior knowledge, experience, and desires. Designed features intended to promote collaboration, such as common planning time to design solutions for shared problems of practice, invite educators to take care of new idea development in the course of demanding teaching schedules.

Practical research considers how educators and learners navigate learning spaces as the primary unit of analysis. Education, from a practical perspective, is an endlessly iterative interaction between teaching, learning, and content orchestrated through diverse and complex learning environments. These environments include material aspects, such as artifacts, and are also irreducibly social interactions of people with varying interests and practices. If scientific research considers education as a delivery mechanism for valued content, practical research considers education as a social process where actors build relationships to support complex communicative action. The goal of practical research is to identify the significant focal practices and artifacts that shape how learning unfolds, and to understand how teachers and learners make sense of their experiences in designed opportunities for learning.

A practical research agenda assumes that, in our continuing search for solutions to the problems of teaching and learning, we have rushed past careful consideration of the actual practices we wish to change. This ignorance is apparent in our knowledge of the everyday practices of educators. In the policy research community, for example, we have many models for how education practices *should* unfold, and equally many detailed accounts of how education practices are hopelessly broken, corrupted, or misguided, but we lack adequate knowledge of how teachers actually do their work. A practical research agenda seeks to marshal appropriate qualitative

and quantitative research methods to fill in these gaps in our knowledge of leadership practices. Practical models do not seek to supplant scientific work. Instead, practical models seek to provide more detailed descriptions of the world that scientific theories of action seek to change.

An early benefit of greater access to practical knowledge may result in more “educative” policies that better anticipate and facilitate the conditions for implementation (Cohen and Barnes 1993). The real potential for practical research, though, is to generate new approaches to addressing the problems of education that are grounded in the practice of expert educators. Practical narratives of expertise can situate best practices in recognizable contexts so that novices can draw on and extend local knowledge and expertise in change efforts. Generating viable opportunities for change, by exploring how focal practices are situated in expert practices of teaching and learning, can show how education is itself capable of generating models to solve its own problems.

11.3 Critical Inquiry

The rich traditions of critical and historical inquiry have long constituted much of the research landscape in education. These traditions resist a totalizing definition of education as design. A critical perspective, for example, casts doubt on the scope and legitimacy of scientific and practical analysis models as the defining characteristics of education research. A design model might merely be the latest in a long list of efforts to technologize education research in order to obscure the underlying social forces at work in contemporary education discourse (cf. Apple 1996; Giroux 2009). The scientific–practical reduction of education research to the “objective” selection of proven means and the neutral “description” of existing practice make it increasingly easy to marginalize those who continue to investigate the interests such policies serve. Critical race theory, for example, argues that policies typically underplay the role of race in policy artifacts designed to promote economic opportunity, and that the role of the researcher is not to show how the policies can be optimized, but to bring the tacit assumptions and implications of race and equity to light for public consideration (Ladson-Billings and Tate 1995).

Historical research in education also calls the scientific and practical models of education research into question. Historical inquiry shows how contemporary design efforts can fail in familiar ways. For example, Nelson’s (2005) description of how efforts to address issues of equity and learning in the Boston public schools struggled in the 1950s and 1960s serves as a cautionary tale for current federal efforts to influence education in local contexts. Historical inquiry also brings to light the contrast between the assumptions of prior eras to ours. Rudolph (2002), for example, shows how 1960s’ educators assumed that the power of science (and scientists) to transform our lives could also transform classroom practices. These cultural assumptions seem far away from the contemporary reduction of science learning to literacy development in elementary schools driven by accountability

requirements. The rich, evocative contextualization of historical research calls into question the rather mundane proposed reduction of education to a quasi-technical matter of describing how local actors choose means and how researchers measure ends.

These critical and historical perspectives reintroduce a social, political, and economic depth missing from the scientific–practical design perspective. Scientific research focuses on the outcome of education interventions; and practical work focuses on describing the context of practice. Critical research helps us to frame the larger social and historical contexts in which education designs are situated. Critical inquiry introduces a *hermeneutic* dimension that situates design and use in a life-world. Research uses theoretical frameworks to interpret the assumptions made by designers and to contextualize findings about the effects of interventions. Here, we (briefly) highlight three areas where critical hermeneutics deepen our understanding of the “education as design for learning” metaphor: problematizing *intentions*, highlighting the distinction between *features* and *affordances*, and problematizing *outcomes*.

11.3.1 Problematizing Intentions

Critical research problematizes the concept of intentions. Intended uses are inscribed into interventions in the form of directions or incentives to guide proper use. In most cases, though, artifacts are shaped as much by the social context of development as by the designer’s intentions. Critical theorists document how common beliefs about the nature and purpose of education, or the desired goals for school systems, are developed through public discourse or through economic and social conditions. Every education design includes unstated intentions shaped by economic and racial epistemologies that are not typically brought to light through scientific and practical research. Nichols and Berliner (2007), for example, develop a counter-narrative that casts doubt on the stated theory of action at work in national high-stakes accountability policies. The traditional design of accountability policies claims that content standards and shared, high-stakes assessments are developed to guide schools toward improving learning for all students and families. Nichols and Berliner analyze how the tacit linkage of assessment with political and social consequences in the design of accountability policies leads schools toward cheating, narrowing the curriculum, and engaging in test preparation rather than instruction. Their critical perspective demonstrates how the contrary assumptions built into accountability policies undermine their possible success. Critical research excels at exposing the tacit strands of intentionality at work in the education designs.

Textbooks provide another example of how artifacts carry mixed messages about how to shape education. Textbooks explicitly address what needs to be taught and learned and also convey a raft of tacit content about social and cultural expectations of what it means to be a learner (Bernstein 1990). Critical theorists have long studied the tacit features of curriculum dissemination via textbook publishing and

distribution, and have documented a hidden curriculum that enables the reproduction of social and economic status (e.g., Anyon 1981; Apple 1988). Further, the traditional characteristics of artifact types can override innovative features intended to shape practice in new ways. While a new series of textbooks might promise to organize disciplinary knowledge in novel ways, its traditional features, such as pagination, static imagery, and mass production, constitute a tacit feature-set of textbooks as status quo knowledge artifacts. New media researchers take a different approach to considering the formal feature-sets of established media by studying how access to learning can be organized in entirely new ways, such as affinity groups (Gee and Hayes 2010) or participatory cultures (Jenkins et al. 2007). Uncovering the underdeveloped and tacit characteristics of curriculum has proven to be fertile ground for critical inquiry.

11.3.2 Problematizing Outcomes

Critical research also challenges what counts as an outcome. As described above, the measurement of causal inferences from artifacts to effects is defining characteristic of scientific research. Much debate in scientific research is focused on the methodological issues of ensuring the conditions under which inferences can be drawn from test scores; much of the practical discussion is focused on creating the conditions for appropriate implementation. Critical researchers investigate what test scores actually measure, and whether these measures capture what we mean by education success. Researchers from a variety of traditions have critiqued how state-wide standardized tests are used to measure student learning (e.g., Koretz 2008; Nichols and Berliner 2007; Noddings 2007; Ravitch 2010). Critical researchers critique the relation between the practices of standardized testing and the needs of learners. Nieto (2009), for example, describes how the needs of English language learners can be corrupted by pressures to meet accountability outcomes. Popkewitz (2011) is engaged in a related inquiry about the mismatch between the items used to measure skills in the PISA exam and the actual disciplinary practices in which these skills are rooted. Critical inquiry creates room for reflective reconsideration of the relation between authentic learning contexts, socially valued outcomes, and mandated standards for curriculum and assessment.

At another level, critical arguments examine the legitimacy of using any universal measure of education. This rich tradition of critique is rooted in Dewey's (1915) account of designing learning environments for student inquiry. Grounding learning in the experience of the learner, rather than the organizational requirements of what needs to be learned, continues to provide a compelling counter-narrative to the standards movement in school reform. Nussbaum (2010), for example, defends the humanities by contending that teaching children to be compassionate can provide a necessary counterweight to the dominance of economic values and the professionalization of education. Murnane and Levy (1997) use economics to present a counter-narrative of "new basic skills" that argues that the kinds of knowledge we

currently measure are not appropriate for a digital workplace. Jenkins et al. (2007) argues that “participatory cultures” are shifting the focus of learning from measurement to authentic engagement with distributed, interest-based communities of practice. Each of these inquiry trajectories problematizes the conventionally accepted narrative of how to measure the quality of education efforts.

Critical research questions the apparent clarity of intentions, outcomes, and descriptions offered by scientific and practical research. Surfacing the tacit intentions, unstated features, and unanticipated consequences of design can serve a corrective role in education research. Reflective investigations of the conditions and outcomes of design create a “space” for inquiry, grounded in the experience of current efforts, in which new avenues for investigation can emerge. Historical research provides another dimension for reflection on design by showing how similar (and dissimilar) efforts have unfolded. This can open a reflective space for researchers and practitioners to consider the limits of current efforts and can raise awareness of new ways to design education. Integrating a critical dimension shows that education research can serve as a process for understanding current practice and also become a generative source of new possibilities for design.

11.4 Education as Design for Learning

We have argued that the pursuit of knowledge around education as design for learning can unify disparate approaches to inquiry in education. While learning happens naturally through everyday interactions, education involves the design of learning environments that aim to achieve specific goals via specific means. Educators use, create, alter, adapt, and ignore artifacts to create systems to support learners to attain specific goals. Scientific inquiry assumes a *positivist* approach to research that emphasizes the application of established social scientific statistical procedures to discern the effects of education designs. Practical inquiry aims for a *phenomenological* approach to how educators design and live in the systems that support everyday work. Critical inquiry provides a *hermeneutic* perspective to situate designs in social, cultural, and economic contexts, and generates new ways of understanding the process of education as a whole.

Considering education as design for learning points toward how each tradition can contribute strengths to improving education research as a whole. Let us take the example of research in reading education. Scientific researchers measure which reading program produces the most robust third-grade learning gains across education contexts. Practical researchers report that practitioners struggle to supplement basic curricula with narrative-based lessons that engage students in sense making around content areas. Critical researchers analyze how current reading assessments reproduce a two-tiered education system in which poor students are taught basic skills while affluent students engage in creative inquiry. A design-based approach can bring each inquiry thread into proper focus. Each research type considers design at a different grain size. Scientific researchers consider the effects of the individual

artifact (reading program) on the learner; practical research explores the connection of the given artifact with other tools in the local system of practice. Critical research considers the motivations for implementing basic-skills artifacts in the social system as a whole. Asking each genre of research to consider practice from the perspective of the other would open new kinds of research questions.

A recent large-scale study of Response to Intervention, a widely used set of strategies for differentiating instruction in American schools, found that students in a treatment group had lower reading test scores in some conditions compared to those who receive traditional instruction (Balu et al. 2015). Scientific researchers identified this finding in the context of a large-scale research design. When research traditions work in tandem, practical investigation could explore the conditions under which students learn at the classroom level, and could suggest new instructional designs to optimize outcomes. Critical researchers could interrogate whether the outcomes specified by the intervention could ever measure skill development expected from struggling readers, and could speculate on new directions about how we should structure learning environments around engagement or equity. Committing each tradition to a focal practice could help scientific researchers pose new kinds of study designs; challenge practical researchers to problematize their own (often tacitly ideological) assumptions about appropriate educational practices, and push critical researchers to make substantive contributions to new directions for designing everyday practices of teaching and learning.

Currently, education research traditions seem to generate mutually exclusive paths of inquiry. Without a common context for inquiry, we are left with a fragmented, suspicious discourse in which disagreement often devolves into acrimonious questioning of legitimacy. The divergence of traditions leaves each approach unable to address its own deficiencies. The methodological focus of scientific research, for example, can produce carefully measured effects of artifacts irrelevant to actual contexts of practice, and the post hoc focus on measurement of existing artifacts leaves scientific researchers unable to generate the next generation of education innovations. Practical researchers can get lost in describing the intricacy of everyday processes, and lose sight of the connection to system effectiveness or the moral context of practice. Critical inquiry can spin off into self-referential communities concerned with incessant internal critique in favor of opportunities to uncovering new forms of practice. We suggest that linking divergent approaches to inquiry may not only correct the deficiencies of each research type, but might lead to a wider discourse in which the extraordinary fertility of education research can be generated, implemented, tested, and critiqued at scale.

What is the price of leaving education research in its current fertile yet fragmented state? A massive \$4.4 trillion global industry has emerged to produce artifacts that shape learning environments around the world.³ Companies fund and use

³Strauss, V. (February 9, 2013) "Global education market reaches \$4.4 trillion—and is growing" Feb 9, 2013. Washington Post. https://www.washingtonpost.com/news/answer-sheet/wp/2013/02/09/global-education-market-reaches-4-4-trillion-and-is-growing/?noredirect=on&utm_term=.cfefcb006783.

research to support claims that their curricula, assessments, and technologies produce the outcomes specified by policymakers. This shadow world of creating knowledge to sell education products dwarfs the funding and influence of academic education research. Our fragmentation, as a field, prevents us from making a difference in how knowledge is produced and circulated about improving education at scale. The people who are working hardest to generate insights about the quality and equity of teaching and learning are often simply left out of the design conversation.

Fortunately, there are important movements occurring within the world of education research to bring knowledge to bear in large-scale design efforts. The Connected Learning alliance, for example, brings together researchers, educators and policymakers to use new media technologies that create distributed learning environments that draw learner interests, build personal relationships, and that support equitable opportunities to learn for all students.⁴ Connected Learning uses concepts and methods from design-based research to experiment with how digital technologies can be orchestrated to improve learning (Cobb et al. 2003). Design-based research methods bridge the gap from practical to scientific research by using theory to build interventions that generate rich data on the process and outcomes of learning to refine artifact development. Design-based research systemically tests the fit between theory and practice by positioning educators and learners as co-investigators, comparing multiple innovations, integrating multiple forms of expertise in the design and testing process, and supporting iterative, data-driven product development (Collins 1992). Networked improvement communities (NICs) use the ideas of improvement science, grounded in design-based research, to create communities of educators and researchers in collaborative design work (Bryk 2015). NICs are being organized around the world to solve problems or practice in community college instruction, creating equitable learning opportunities, personalized learning, and the redesign of special education. These kinds of efforts provide important precedents for a world of education research where scientific, practical, and critical inquiry are brought together to inform designs to improve teaching and learning at scale.

We have proposed that putting design at the center of methodologies for education research accomplishes the following: identifies three types of inquiry and; outlines how these approaches can contribute toward a common whole. If we can agree on defining education as design for learning, then we might be able to motivate education researchers to understand their work in terms of a broader project. Rather than lead with methods (for example, hierarchical linear modeling, case studies, or ideological critique), we propose that researchers use design as a metaphor to align their work with alternative research traditions. We hope that this model can build a conversation about shared enterprises and identify what makes education research a unique field of inquiry. The struggle to improve teaching and learning everywhere, for all learners, distinguishes education research from the social sciences and the humanities. Education researchers would do well to draw upon the work of peers

⁴<https://clalliance.org/about-connected-learning/>.

across traditions to build a discipline that will contribute to our global aspirations for education.

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Chapter 12

School-Based Teaching Research in China



Wensen Yu

To establish a school-based teaching research institution compatible with the new curriculum responds to the urgent demands of current school development and teacher growth, as well as facilitates further reform of teaching research. School-based teaching research is applied research guided by theories and conducted by teachers. It targets at serving the new curriculum and promoting every student's development. School-based teaching research usually focuses on school-level problems and issues identified in the curriculum implementation. Ideally, such research could solve practical problems as well as distill experiences through synthesis.

12.1 Guiding Ideas of School-Based Teaching Research

12.1.1 *Schools Are the Foundation and Premise of School-Based Research*

It would be promising for education reform and development if schools could shift from an instrumental existence (existence in space) to an ontological existence (existence in culture) for educational activities, move from the periphery to the center of educational decision-making, and finally become a cultural subject of

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223

self-identity, self-discipline, self-fulfillment, self-affirmation, self-reshaping, self-return, and self-development.

12.1.1.1 The School-Based Concept

Schools are the place where education is being practiced (i.e., the exact place for ongoing education) and the center (and soul) of education is located in schools. More attention has been paid to education or education reform itself than to the school, which is the basis of education and educational reform. However, because the focus has been on human behaviors rather than on human culture and environment, the expected goals of education and education reform have not always been achieved. Schools are the main carrier of education, which implies that the development of education must be realized through the development of schools, the reform of education must be achieved through the reform of schools, and more importantly, the improvement of educational quality must be gained through the enhancement of school capacity. If schools remain the same and no change in management is adopted, educational development and reform are impossible. Rebuilding school culture entails the success of the curriculum reform. The key to ongoing curriculum reform lies in building nouveau schools with fresh ideas, new spirits, and updated institutions. Therefore, the attention of curriculum of reform focuses on rooting the reform in schools.

Orientation for Schools

All school-based efforts should be oriented for school development, for building educational competence and spirit of schools, and for the enhancement of school culture. Currently, schools should pay special attention to building internal mechanisms for sustainable development and to promoting individualization, humanism, and characteristics. Efforts oriented toward schools are ultimately for the benefit of all students, including current and future students. Any reform should be conscious of promoting the school development.

Root in Schools

Every school is specific, unique, and irreplaceable. An individual school's complexity is not fully explained by the experience of other schools, or fully verified and explained by theory. Therefore, school development can only be conducted in each school itself; it cannot rely on simple transplantation (i.e., learning from others' experience), but rather on the school's self-awareness, self-effort, and self-improvement. Only the reform, that is rooted in a school, based on the school's processes, and is recognized, embraced, and pursued by all teachers, can be absorbed into the tradition and culture of a specific school.

Stakes in Schools

Principals and teachers are the major players behind school development due to their vested interests in schools and because they have authentic experience with and a comprehensive grasp of schools. Thus, their opinions matter. Principals and teachers are the masters of schools, and they bear the most direct responsibility for school development. We should make organic links between principals and teachers' personal growth and the fate of schools. We should believe in principals and teachers' potential creativity, encourage their agency, and guide and drive their planning and developing schools out of schools' real situations. It has been demonstrated from experiences that schools can be full of life and vitality only by fully mobilizing the initiatives and creativity of principals and teachers.

12.1.1.2 Based on Schools and Teachers

From the perspective of the relationship between schools and teachers, sustainable development can be achieved in the true sense only by focusing on the interaction and integration between school development and individual teacher development. Schools may gain a temporary achievement by relying solely on a teacher's individual repeated labor or personal struggle, but schools cannot achieve sustainable development in this way. On the contrary, if schools are short of capacity, they will become an empty shell (similar to a hotel) that operates outside of teachers, and teachers will become hurried sojourners. Therefore, we should adopt two countermeasures: first, we should transform teachers' personal wisdom, experience, and ideas into collective wealth and move forward forming schools' characteristics and traditions to realize school development by promoting the development of teachers; and second, schools should mobilize their own culture, mechanisms, and traditions to impact, nurture, and cultivate teachers to allow schools to advance teacher development. In the long run, the second countermeasure is more important.

12.1.2 *Research Returns to Practice*

It has been a global common trend that teaching research is tracing back to anchor in schools, teachers, and the teaching practices. Academicians and teachers are researchers to conduct teaching research. On the one hand, when doing teaching research, scholars should hold the principle of "practice first," engage in a deep concern for practice, and consciously and continuously commit to the field of curriculum reform practice. Doing so, scholars would summarize, synthesize, theorize, and construct timely and lively teaching theories out from teachers' practical wisdom and creative practice.

On the other hand, teachers are also researchers and reflective practitioners in doing teaching research. Research by primary and middle school teachers is

practical research; this kind of practice is not only the object of research, but also the destination of research. From the perspective of the source of research problems, the research problems of primary and middle school teachers emerge directly from their needs in the practice of teaching; from the perspective of the research process, primary and middle school teachers' research is conducted in their own practice of teaching and is inextricably intertwined with their teaching activities; from the perspective of the research purpose, the orientation of primary and middle school teachers' research is mainly to solve the problems of teaching practice. Thus, practice is the most fundamental characteristic of primary and middle school teachers' teaching research. As far as primary and middle school teachers are concerned, research that cannot solve real problems in teaching, cannot improve the level and quality of teaching, and cannot promote their own professional development, is not teaching research in the real sense.

In brief, the aims of school-based teaching research are to promote school development; equip schools with the research capacity; foster the internal mechanism for self-development, self-improvement, self-innovation, and self-transcendence; and transform schools into a learning organization. School-based research sets the teacher as both the research subject and researcher. Being a teacher researcher, teachers should develop the consciousness for research, and reflect, analyze, and solve the problems in teaching practice as a researcher. School-based teaching research emphasizes effectiveness and sustainability of research, and integrates teaching research with daily teaching practice, and on-the-job training. Thus, this research becomes a kind of occupational style for teachers and promotes their professional development. Based on this, I have established two basic propositions for school-based research. Proposition One: the positive proposition is that teaching research should change the school's daily life (i.e., teachers' daily life and school routine system); the negative proposition is that if teaching research cannot change the school's daily life (i.e., if the teaching research and school routines are not integrated but rather two separate activities), this kind of teaching research is invalid. Proposition Two: the positive proposition is that all teaching research should be accepted and appreciated by teachers; the negative proposition is that if teaching research cannot be accepted and appreciated by teachers in the long term, teachers are not to blame. It is the underlying theoretical assumptions that need to be adjusted and corrected.

12.2 Fundamental Elements of School-Based Teaching Research

Individual teachers, teaching group, and academics constitute the trinity of school-based research. The individual teacher's self-reflection, the teacher group's peer coaching, and academics' professional guidance are the three fundamental forces driving school-based research and teachers' professional development. Their

relationship is integrated and they are each indispensable, as shown in the following diagram (Fig. 12.1):

12.2.1 Self-Reflection

Self-reflection is a process in which teachers take their professional activities as the object of thinking, and examine and analyze their professional behaviors in their careers and the corresponding results. “The essence of self-reflection is a dialogue between understanding and practice, a bridge between them, and a spiritual communication between the ideal-self and the real-self” (Zhu 2000: 337). Obviously, self-reflection is not a review in the general sense, but a contemplation, consideration, exploration, and resolution of problems that emerge in the teaching process. It is the most fundamental drive for and pervasive form of school-based research. Self-reflection is considered to “be the core factor for teacher professional development and self-growth,” (Zhu 2000: 337) which is based on three basic beliefs.

First, teachers are professionals. Being professional does not mean teaching the subject content as their professional performance, but rather refer to their educational action and educational activities as their professional field. “However, the most formidable challenge for anyone in a profession is not applying new theoretical knowledge but learning from experience. While an academic knowledge base may be necessary for professional work, it is far from sufficient. Therefore, members of professions have to develop the capacity to learn from the experience and contemplation of their own practice” (Shulman 1998: 519).

Second, teachers are individuals in development, and they need to grow continuously. As professionals, teachers need time to grow from a novice to an expert teacher, and this process is endless. Lifelong learning entails professional growth of teachers.

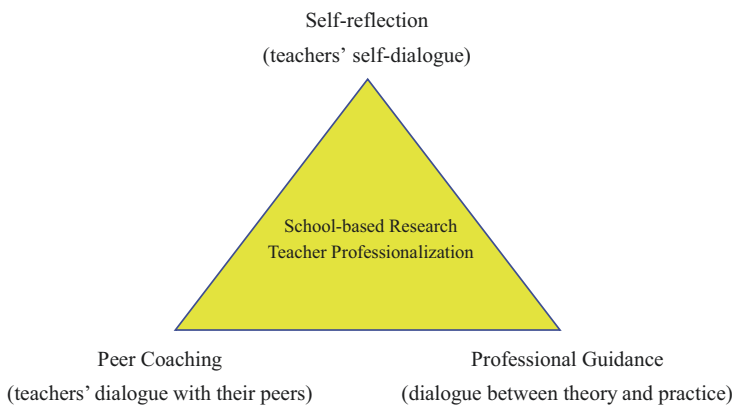


Fig. 12.1 The model of school-based research

Third, teachers are both learners and researchers. Teachers' professional development is the result of self-guidance, and teachers are continuous learners. Teachers are able to think about, research, and improve their own educational action and activities. Professional development is the most direct and suitable way for teachers to learn and to research spontaneously, rather than the passive development pressed by the external demands. Self-reflection is the basis and premise for school-based research, and school-based research can only be practiced and implemented with a teacher's self-consciousness and willingness. The new curriculum places heavy emphasis on teachers' self-reflection. Teaching reflection is divided into three stages according to the teaching process, namely pre-teaching, in-teaching, and post-teaching. Pre-teaching reflection is a forward-looking practice making teaching conscious and effectively improves teachers' prediction and analysis in teaching.

In-teaching reflection happens timely and spontaneously in the process of action. This reflection is of a monitoring nature and ensures that teaching is conducted in a high-quality and efficient manner, which contributes to the improvement of teachers' ability to adjust and adapt in their teaching. Post-teaching reflection is a critical reflection after the teaching has ended. This reflection is critical in theorizing the teaching experience and helps to improve teachers' abilities of synthesis and evaluation.

Self-reflection always points to the self. Reflectors are both the object of reflection and the undertaker of reflection. In fact, the teacher's reflection process enables teachers to fully demonstrate dual roles in educational and teaching activities: they act both as leaders and reviewers and as educators and students. Therefore, the process of teachers' reflection is actually a process integrating "learning to teach" and "learning to learn," and one that promotes teaching practice and becoming a scholarly teacher. In the past, teachers were in the passive position of being the objects of research, but now they can become researchers and reflective practitioners. Thus, teachers should not only become the subject of teaching, but also the subject of teaching research by treating themselves as the objects of research; exploring their own teaching ideas and practice; and reflecting on their own teaching practices, ideas, behaviors, and outcomes. Through this process, teachers can constantly update their teaching concepts, improve teaching practice, and promote teaching excellence through reflection and research. At the same time, they can develop independent thinking and creative ideas about phenomena and problems in teaching, become the true masters and researchers of teaching, and enlarge autonomy of teaching, and overcome blindness and passivity. Practice has shown that the combination of teaching and research, as well as teaching and reflection, can help teachers obtain the rational sublimation and emotional pleasure in teaching, enhance their spiritual realm and thinking, and change their way of life by allowing teachers to realize their own value and significance.

Self-reflection helps to transform and promote teachers' teaching experience; there is an equation that states experience + reflection = growth. Many studies have shown that teachers' own experience and reflection are the most important sources of teachers' professional knowledge and competency. Experience without reflection is provincial, unconscious, and fragmented, which leads to superficial understanding

and a closed mind, which may hinder the professional development of teachers. Only through reflection can the original experiences be scrutinized, modified, strengthened, criticized, and distilled. All of these processes will contribute to promoting and modifying the experience, and will turn into an open system and rational power which will, in turn, leverage teachers' professional development.

The new curriculum presents a completely new challenge for the traditional teaching experience, and the importance of reflection over experience has been raised to an unprecedented height. However, only teachers can change themselves because only they are aware of their teaching experience and limitations, and they may make adjustments to their experience through reflection. Through this process, they will develop advanced teaching ideas and a personal educational philosophy consistent with the requirements of the new curriculum.

12.2.2 Peer Coaching

School-based research emphasizes teacher's self-reflection, but it also indicates that teachers should open themselves up to professional consultation, coordination, and cooperation about teaching activities in the curriculum implementation process. Through this kind of experience sharing and mutual learning, teachers gain mutual support and shared development. The essence of peer coaching lies in the communication and cooperation between teachers as professionals. Typology of peer coaching is described below.

12.2.2.1 Dialogue

The types of dialogues can be divided into: (1) exchange of information, (2) sharing experience, (3) in-depth talk (curriculum reform salon), and (4) thematic discussion (debate). By (1) exchanging information between teachers, teachers can maximize the flow of educational information to expand and enrich the amount of information and knowledge. The main methods of exchanging information are informative meetings in which the attendants make their information public, and reading salons in which the attendants exchange information and understanding about the books they read. Through (2) sharing experience, teachers provide reflections and improve upon their experience through sharing, learning from, and absorbing the experiences of others. Experience can only be value-added when it is activated and shared. The main ways of sharing experiences are experience exchanges or experience summary meetings in which the attendants share and communicate with their colleagues about their successes, experiences, and failures. (3) An in-depth talk (curriculum reform salon) can be either with a topic or without. The key is that teachers should be authentic and sincere with each other. Only by mutual trust and friendship (treating each other as spiritual partners), they can express freely and interact together. In-depth talks are a free and divergent thinking process that will induce teachers to

express and share their deep opinions, thoughts, and wisdom. This dialogue process is the most generative and constructive, resulting in many new valuable insights. (4) A thematic discussion (debate) is a forum where everyone speaks freely about a single problem and provides his or her opinions. In this process, everyone defends their opinions, while also considering and questioning other people's opinions. The attendants enrich each other's thoughts and improve their understanding of problems with their colleagues. Therefore, their knowledge is constantly changing and expanding. In an effective discussion, each teacher learns something that he or she cannot learn alone.

12.2.2.2 Collaboration

Collaboration means that teachers share the responsibility of fulfilling a task. The new curriculum requires teachers to undertake teaching research projects and teaching reform together. Collaboration emphasizes teamwork and has two key points: the first one is that every teacher must showcase their hobbies and personality, which will develop through complementary symbiosis; the second one is that every teacher must play a role because when all teachers contribute, they develop through interaction and cooperation.

12.2.2.3 Coaching

Coaching refers to the process in which excellent teachers with rich teaching experiences and outstanding teaching achievements provide guidance to new teachers, and in which excellent teachers help provide experiences to new teachers to allow them to adapt to the role and environment as soon as possible. Backbone teachers and subject teacher leaders are outstanding in morality as well as capability. They usually play an active role in peer coaching. Through peer coaching, the phenomenon of teachers' working alone and loneliness can be prevented.

School-based research is different from teacher-based research, which is the research process of teachers conducting research according to their personal interests or based on problems they face in their own teaching. School-based research is conducted at the school level, and it is dedicated to solving problems at the school level (in other words, the common problems encountered by teachers). However, school-based research does not depend solely on the power of individual teachers but rather on the collective power. Therefore, school-based research is often reflected as a kind of collective cooperation that embodies mutual cooperation between teachers as researchers and also relies on the strength of the whole group to ultimately achieve the research purpose.

School-based research must be conducted by a group of teachers. The teachers' collective participation in the research forms the atmosphere and culture of the research and becomes a common way of life for teachers. Only this type of research can really improve a school's educational capacity and problem-solving. Although

teaching behavior can be temporarily changed due to an individual teacher's research, this kind of change is difficult to sustain and even more difficult to effect change in the behavior of a group of teachers. Although teacher-based research was conducted in the past, schools as well as teachers' behaviors remain unchanged.

Collective peer coaching and a cooperative culture among teachers are the symbols and soul of school-based research. Therefore, we must effectively renew the school educational situation for schools to truly transform into democratic, open discussion areas, and particularly, to emphasize professional debate between group teachers. Professor Yuan stated, "In a group of teachers, it is very valuable and important to have communications and conflicts raised by different thoughts, ideas, teaching patterns, and teaching methods. It is not the school's luckiness but a disaster if school teachers do not have different ideas. In particular, some prestigious school leaders and senior teachers should pay special attention to the support of different thoughts, ideas and behaviors" (Yuan 2002: 10). School-based teaching research emphasizes the scientific spirit and a realistic attitude, and thus schools should foster a culture of academic dialogue and criticism and create an atmosphere for debate among teachers.

12.2.3 Professional Guidance

School-based research is conducted in a school and concerns the facts and problems of that school, but it is not entirely limited to mobilizing the power inside that specific school. On the contrary, the participation of professional researchers is indispensable in school-based research. Without the participation of professional researchers and other "outsiders," school-based research will often be constrained by repetition and not achieve substantive progress, or will even be stagnated, resulting in formalization and mediocrity. From this perspective, the participation of professional researchers is the key to sustainable development of school-based research. Schools should actively seek the support and guidance from professional researchers.

Professional researchers mainly include teaching research staff, academic researchers, and university teachers. Compared with front-line teachers, their strengths lie in the accomplishment of systematic educational theory. School-based research is practical research under the guidance of theory. Theoretical and professional guidance is critical support for propelling school-based research forward. Professional researchers should have a strong sense of responsibility and great enthusiasm for the teaching practice, should actively participate in the construction of school-based teaching research systems, and should provide effective assistance to schools and teachers.

In essence, professional guidance is the guidance of theory to practice, the dialogue between theory and practice, and the reconstruction of the relationship between theory and practice. From the perspective of teachers, strengthening theoretical study and consciously accepting the guidance of theory, improving the accomplishments in teaching theory, and enhancing theoretical thinking ability are

the only ways in which ordinary teachers can become educators. At present, there are misleading notions and practice excluding theoretical guidance. In fact, teacher's self-learning of theory is actually a kind of implicit professional guidance.

Professional guidance takes many forms, including academic reports, lectures on theory, field teaching advisement, and professional consulting (discussion) for teaching; each form has its particular function and helps to achieve a particular purpose. However, field teaching advisement is the most effective form of teachers' professional development, and it is the most popular among teachers. Professional researchers help teachers the most if they prepare lessons (design), attend the lessons (observation), and review the lessons (conclusion) together. However, time is a prominent limitation for professional researchers. Professional researchers providing field advisement should strive to be in place, and not offsite. Being in place means providing teachers with the help they need; being offsite means not acting on their behalf. Offsite guidance (including providing overly detailed teaching references) may meet the teachers' timely needs, but can stall teachers' inertia and lead to psychological dependence, neither of which is helpful and may even hinder teachers' professional development. Teachers are the real subject of teaching, and no matter how much is directed by professional researchers, they cannot and should not replace a teacher's independent thinking. Professional researchers should provide guidance oriented to improve teachers' independent teaching ability and independent research competence. Currently, when professional researchers are organizing and participating in reviewing a class, they must break through traditional and popular ideas, not engage in formalism, and be pragmatic and realistic. Professional researchers should not only discuss the teachers' strengths in the class for the sake of encouragement, but also carefully analyze the teachers' weaknesses for the purpose of enlightenment. At the same time, they should abandon discourse hegemony, advocate academic dialogue, and pay special attention to tolerance, encouragement, and support of different ideas.

Self-reflection, peer coaching, and professional guidance are seemingly independent, but they complement each other, through reciprocal penetration and mutual promotion. Only when we maximize their separated roles and fully integrate self-reflection, peer coaching, and professional guidance, can we effectively promote the school-based teaching research system.

12.3 Typology of School-Based Teaching Research

From the perspectives of practice types and concrete implementation, school-based teaching research can be divided into three types: instruction-oriented teaching research, which focuses on teaching and is based on lessons; project-oriented teaching research, which focuses on study and is based on research projects; and learning-oriented teaching research, which focuses on learning and is based on reading.

12.3.1 Instruction-Oriented Teaching Research

Instruction-oriented teaching research focuses on teaching and directly serves teaching. This research usually focuses on lessons, and it is also known as lesson study. It concentrates on how to teach a lesson and is fully involved in the whole teaching process, from lesson preparation and design to instruction and evaluation. The activities of this research are mainly conducted through peer communication and discussion. The results of this research are generally written teaching plans and lesson cases. This kind of research is a universal practice that is a very effective method for improving teaching quality.

Lesson study can be categorized into three research steps such as lesson explanation, lesson listening, and lesson evaluation. Lesson explanation is the process during which the teacher orally explains the teaching plan for a specific lesson to peers or experts and leaders based on lesson preparation, and then they discuss ways to improve the lesson plan. If the lesson preparation is an independent static teaching behavior of individual teachers, lesson explanation is a dynamic teaching research activity carried out jointly by a group of teachers. We can define lesson explanation as a special form for collective lesson preparation. Lesson explanation is a more scientific preparation activity compared to lesson teaching (Yang 2004: 22).

Lesson listening is the inspection, observation, or investigation of the classroom teaching activities conducted by peer teachers or experts and leaders. For the teachers who deliver the lessons, lesson listening is a time to showcase their own teaching ideas, personality, ideas, experience, wisdom, etc.; for teachers who visit the class to listen, it is a time to learn from the experiences and lessons of their peer teachers. As a form of teaching research, lesson listening should not only pay attention to listening, but also to watching, and thus many experts suggest that lesson listening should be renamed to “lesson observation.”

Lesson evaluation is the further exchange and discussion of lessons among teachers after lesson explanation and lesson listening. Lesson evaluation provides a feedback and correction system for teachers’ classroom teaching and ensures the improvement of the quality of classroom teaching. As one form of activity of school-based research, lesson evaluation should identify problems, analyze problems, and propose measures for solving problems, so that it will become a professional activity for teachers’ professional development and the improvement of teaching skills.

As for the expression of the research results, lesson cases = teaching design + teaching record + teaching reflection.

The teaching design is the teacher’s planning and imagination for classroom teaching activities. The design is similar to a construction plan, and it is the basis of teaching activities. The teaching design contains innovation and research elements. Simply following old traditions or copying other people’s experiences means no design at all.

The teaching record is the actual recording of the implementation of the classroom teaching activities by text or video. The record is different from the design

because teaching design is static while the record documents teaching activity is dynamic. The teaching design is presupposed, but the teaching activity is generative.

In addition to teaching design and record, teaching reflection is a more important factor for lesson cases. The teaching design is the scheme, teaching record is practice, and teaching reflection is evaluation. The teaching reflection includes the teacher's own reflection, expert comments, and peer suggestions.

The common style for the research report of lesson cases follows the same formula described above: the first section is the explanation of the background, ideas, and intentions of the teaching design; the second section is the description of the actual classroom teaching process, including how the students learn and how the teachers interact with the students; and the third section contains the reflection and discussion of the teaching process and effect, which may not only adopt and absorb advice from experts or peers, but also refute opinions from the experts or peers to rationalize the teacher's own practice (Xia 2005: 43).

12.3.2 Project-Oriented Teaching Research

Project-oriented teaching research focuses on exploration based on research projects and a particular research problem. Project-oriented teaching research follows the general procedures and basic norms of scientific research, and its corresponding report is the main avenue for research activities, discovery, and innovation. Its main activity is a group research project, and the primary presentation form of the research results is the research project report. Compared with instruction-oriented teaching research, project-oriented teaching research is considered to be more advanced, standardized, scientific, and targeted.

The objects of focus of lesson cases are lessons, and the objects of focus of research problems are problems. The problem is the core factor that constitutes the research activity and the internal motivation for science advancement. However, how is the problem identified? It is the result of researchers' questioning. Only when teachers develop the consciousness and habit of asking and questioning in their daily educational and teaching life, can they continue to identify meaningful and worthwhile educational and teaching problems.

The research project process is a dynamic process of spiraled, upward, and cyclical development. It is not a linear structure, but a complex loop structure with constant movement toward the resolution of problems. Practice has shown that the research project plays a particularly important role in promoting the scientific literacy and theorization of teachers.

12.3.3 Learning-Oriented Teaching Research

Learning-oriented teaching research focuses on learning that aims at improving the teaching level and professional quality of teachers. It improves teaching quality and lays the foundation for teacher professional development. Research is demonstrated as a kind of learning: research learning. This kind of learning is not aimed at mastering some theoretical and fashionable terms, but rather at understanding and grasping the essence of theory, learning the spirit of reflection, and researching theory. Research learning mobilizes not only the theory to solve one's own practice problems, but also the theory to organize one's thinking over practice. Reading and thinking are the main research activities, while observation and communication are the approaches to this research (Li 2005: 40). Reading notes and reviews after reading or watching something are the main types of research results.

Teachers are the professionals who guide and help students to learn. If teachers do not learn themselves, their guidance and help will become a kind of preaching done under compulsion, and the educational effect will be spoiled. An important feature of teachers' labor is demonstration. Only teachers who have an insatiable desire to learn can foster a love of learning in students. The fundamental support for a teacher to become a teaching professional is to become a learned teacher. Without continuous learning and extensive reading, teachers cannot acquire profound knowledge, and thus their teaching will become awkward. Teachers should become learned teachers to be worthy of students' attention, and through this, teachers will have a more profound and lasting influence on students than textbooks. "Reading for students" should be the primary driving force of teachers' reading.

For teachers, learning is not only a kind of adaptation to changes in the outside world, but also a consciousness of their internal life—originating from the personal needs in the hearts of teachers; it is a form of self-care. Learning may have no direct correlation with teachers' teaching in the micro sense. Learning is not for teaching but for the self-discipline and self-improvement as an accomplished modern "social person." It aims to enrich human nature, culture, lifestyle, and the full life experience (Mao 2003: 40). This kind of learning is not directly targeted at teaching; instead, it helps to shape a new image of teachers, enables teachers to think of new ideas for the new curriculum, and allows them to put ideas into practice with a broader perspective. A more profound cultural literacy supports education, and edifies and infects the next generation with a more perfect personality. Only when teachers become true intellectuals can they appreciate the "dignity of educators." Reading leads to teacher learning in a large sense. Teachers are encouraged to keep a teaching diary and write essays based on their experience of reading and learning.

Instruction-oriented, project-oriented, and learning-oriented teaching researches are three basic types of school-based teaching research. Their organic combination fully reflects the connotation and denotation of school-based teaching research. We should advocate instruction-oriented teaching research and prevent the deification of school-based teaching research; advocate project-oriented teaching research and prevent the generalization of school-based teaching research; and advocate

learning-oriented teaching research and prevent the narrowing of school-based teaching research. These three kinds of teaching research are relatively independent, but in practice, they complement, promote, and influence each other. To effectively promote school-based teaching research, we must deeply understand the essence of all kinds of school-based teaching research, give full play to their respective functions, and consider how to integrate them.

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Part IV
PISA and Education Reform

Chapter 13

The Implications of Understanding That PISA Is Simply Another Standardized Achievement Test



David C. Berliner

It occurred to me one day that despite all the excitement, and both the satisfaction and handwringing engaged in by some nations after scores are released, that the Program for International Student Assessment, PISA, is merely another Standardized Achievement Test. Almost all Standardized Achievement Tests (SATs) try to adhere to certain principles of design, have similar correlates, and have similar limits on the interpretations of the results obtained. Neither the popular press nor most politicians ordinarily understand these realities and their implications. Opinion makers are unaware that many of the Standardized Achievement Tests we commonly use do not have the powers attributed to them. It is not far from the truth to call the scores derived from some of these assessments “talismanic” (Haney et al. 1987). That is, for many people, test scores have special powers, particularly of prophesy, a bit like the Kabbalah of the middle ages. Scores from SATs are a part of the metrification associated with the modern world, no doubt aided by a global market place in which business leaders and technologists, instead of humanists and educators, have garnered political power. Contributing to this trend toward metrification has been the ascendance of economics as an influential discipline throughout the world (Lingard et al. 2015). But in my opinion, economists, journalists, and politicians too often seek in metrics powers that are more illusionary than they are real.

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13.1 What Do We Know About High-Quality SATs and PISA

PISA is simply another SAT, so we have knowledge with which to criticize it, because over the decades, we have learned what constitutes a high-quality SAT. Well-designed SATs should have items that have been written carefully, been scrutinized well, tried out, demonstrate little gender or cultural bias, and contribute to test reliability. The total test must also provide convincing arguments about its validity for particular purposes. Not all SATs meet such standards in an exemplary manner, and PISA is no exception.

13.1.1 *Language and PISA Items*

PISA is being used cross-nationally. Thus, every item in this SAT must have the same meaning in each country to insure that each country has items that are not positively or negatively associated with the all important passing rates for items. If this condition cannot be met, interpretation of this SAT may be seriously compromised. Many scholars, myself included, are not sure that these basic criteria, for this particular SAT, can be met, although PISA designers say that they can do just that. Common sense and supporting research challenge PISA's claims.

For example, here, alphabetically, are just a few of the countries that take the *same* items: Argentina, Australia, Austria, Azerbaijan, Belgium, Brazil, Bulgaria, Canada, Chile, Colombia, Croatia, the Czech Republic, Denmark, and so on. It is quite likely that it is quite difficult to have test items mean precisely the same thing in each of these nations, and thus be an item of equivalent difficulty in languages of each of these nations.

Some of us find it hard to believe that *item equivalence* can be assured for the 65 nations, 65 cultures and their sub-cultures, 65 dialects and languages, which participated in the 2012 PISA test. My colleague Gene Glass (2012), one of the most distinguished educational researchers in the world, asks:

How do you write a reading test in English and then translate it into Swedish (or vice versa) and end up confident that one is not intrinsically more difficult than the other? I insist that the answer to that question is that you can't. And to claim that one has done so merely sweeps under the rug a host of concerns that include grammatical structure, syntax, familiarity of vocabulary, not to mention culture of the students taking the test.

Years ago, Gerald Bracey (1991) pointed to one international test where 98% of Finnish students, but only 50% of American students, scored correctly on a vocabulary question. The students were asked to indicate whether "pessimistic" and "sanguine" were antonyms or synonyms. Because "sanguine" does not exist in the Finnish language, the word "optimistic" was substituted, making the question much easier to answer.

So, common sense leads many of us to believe that no one can produce two non-trivial passages of text, in two different languages, and make them, and the questions

derived from them, of equal cognitive difficulty. Figure 13.1 presents an item from the 2006 PISA reading test (Organization for Economic Cooperation and Development 2009). It illustrates this concern. It is a passage in the reading assessment intended to tap comprehension. Please read a little of it. It sets up this passage this way: “A murder has been committed but the suspect denies everything. He claims not to know the victim. He says he never knew him, never went near him, never touched him ... The police and the judge are convinced that he is not telling the truth. But how to prove it?”

It is hard for me to believe that such an item is of the same cognitive and emotional character in scientifically advanced countries with appreciation for the police, and scientifically less advanced countries, with fear of the police.

Figure 13.2 is also from the 2006 PISA exam (Organization for Economic Cooperation and Development 2009). It is an example of a problem-solving context designed to assess the quality of scientific thinking by 15-year olds. Please read a bit of it (see Ruiz-Primo and Li 2015).

Although PISA developers claim otherwise, it is hard to believe that the substantial amount of reading required in these two items is likely to be interpreted the same in, say, Hungary, Denmark, and Korea. Nor are the questions associated with each of these contexts likely to yield equal pass rates. Glass (2012, response to BLOG comments) says this:

It is not a matter of the fidelity of a translation. It is a matter of producing psychometric equivalence right down to percentage points of difficulty between two items. Even small differences in item difficulty between two items in different languages accumulated across several items could produce differences between two nations of the magnitude observed for

Scientific Police Weapons

A murder has been committed but the suspect denies everything. He claims not to know the victim. He says he never knew him, never went near him, never touched him... The police and the judge are convinced that he is not telling the truth. But how to prove it?

At the crime scene, investigators have gathered every possible shred of evidence imaginable: fibres from fabrics, hairs, finger marks, cigarette ends... The few hairs found on the victim's jacket are red. And they look strangely like the suspect's. If it could be proved that these hairs are indeed his, this would be evidence that he had in fact met the victim.

Every individual is unique
Specialists set to work. They examine some cells at the root of these hairs and some of the suspect's blood cells. In the nucleus of each cell in our bodies there is DNA. What is it? DNA is like a necklace made of two twisted strings

of pearls. Imagine that these pearls come in four different colours and that thousands of coloured pearls (which make up a gene) are strung in a very specific order. In each individual this order is exactly the same in all the cells in the body: those of the hair roots as well as those of the big toe, those of the liver and those of the stomach or blood. But the order of the pearls varies from one person to another. Given the number of pearls strung in this way, there is very little chance of two people having the same DNA, with the exception of identical twins. Unique to each individual, DNA is thus a sort of genetic identity card.

Geneticists are therefore able to

Genetic what?
DNA is made up of a number of genes, each consisting of thousands of "pearls". Together these genes form the genetic identity card of a person.

Just one piece of evidence
More and more often in cases of sexual assault, murder, theft or other crimes, the police are having genetic analyses done. Why? To try to find evidence of contact between two people, two objects or a person and an object. Proving such contact is often very useful to the investigation. But it does not necessarily provide proof of a crime. It is just one piece of evidence amongst many others.

Anne Versailles

How is the genetic identity card revealed?
The geneticist takes the few cells from the base of the hairs found on the victim, or from the saliva left on a cigarette end. He puts them into a product which destroys everything around the DNA of the cells. He then does the same thing with some cells from the suspect's blood. The DNA is then specially prepared for analysis. After this, it is placed in a special gel and an electric current is passed through the gel. After a few hours, this produces stripes similar to a bar code (like the ones on things we buy) which are visible under a special lamp. The bar code of the suspect's DNA is then compared with that of the hairs found on the victim.



Microscope in a police laboratory

We are made up of billions of cells
Every living thing is made up of lots of cells. A cell is very small indeed. It can also be said to be microscopic because it can only be seen using a microscope which magnifies it many times. Each cell has an outer membrane and a nucleus in which the DNA is found.

Fig. 13.1 A PISA reading item. (Source: OECD (2009). PISA Released Items—Reading. Retrieved from: <http://www.oecd.org/pisa/38709396.pdf>)

A copying machine for living beings?

Without any doubt, if there had been elections for the animal of the year 1997, Dolly would have been the winner! Dolly is a Scottish sheep that you see in the photo. But Dolly is not just a simple sheep. She is a clone of another sheep. A clone means: a copy. Cloning means copying 'from a single master copy'. Scientists succeeded in creating a sheep (Dolly) that is identical to a sheep that functioned as a 'master copy'. It was the Scottish scientist Ian Wilmut who designed the 'copying machine' for sheep. He took a very small piece from the udder of an adult sheep (sheep 1).

From that small piece he removed the nucleus, then he transferred the nucleus into the egg-cell of another (female) sheep (sheep 2). But first he removed from that egg-cell all the material that would have determined sheep 2 characteristics in a lamb produced from that egg-cell. Ian Wilmut implanted the manipulated egg-cell of sheep 2 into yet another (female) sheep (sheep 3). Sheep 3 became pregnant and had a lamb: Dolly. Some scientists think that within a few years it will be possible to clone people as well. But many governments have already decided to forbid cloning of people by law.



Fig. 13.2 A PISA science item. (Source: OECD (2009). PISA Released Items—Science. Retrieved from <https://www.oecd.org/pisa/38709385.pdf>)

many of the nations in these international rankings. To place one's trust in the PISA scholars to have solved a problem so fraught with complexities as equalizing the cognitive load in two different languages ... strikes me as naive.

13.1.2 Context and PISA Items

In fact, the common sense about this issue is fully supported by the research of Ruiz-Primo and Li (2015). They point out that items on PISA are intended to tap deeper learning than do multiple-choice items. To do that requires the design of a context, such as that given in Fig. 13.2. The context is to be read and understood

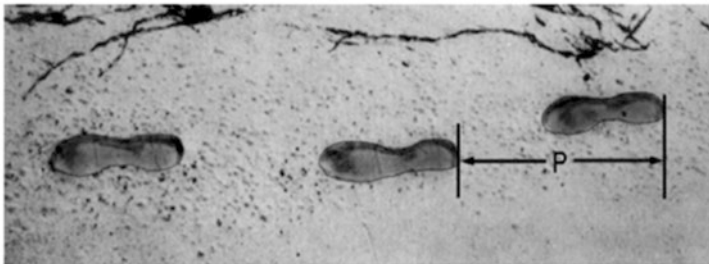
before the actual questions designed to tap problem-solving skills are asked. These kinds of questions are in contrast to straightforward multiple-choice questions, designed to assess memory for factual knowledge, and where text providing background contexts are usually not necessary.

Ruiz-Primo and Li believed that these context-dependent questions might be understood differently in different countries, a perfectly reasonable hypothesis that was confirmed. They found differential student performance, *by nation*, on PISA, associated with the contexts in which items were presented. They also found evidence that item contexts across countries affected male and female respondents differently.

13.1.3 Illustrations and PISA Items

We need also to remember that items designed to tap problem-solving, not simple memory, often have illustrations associated with them, as well as contexts. An illustration for a PISA math item is given in Fig. 13.3 (Organization for Economic

M124: Walking



The picture shows the footprints of a man walking. The pacelength P is the distance between the rear of two consecutive footprints.

For men, the formula, $\frac{n}{P} = 140$, gives an approximate relationship between n and P

where,

n = number of steps per minute, and

P = pacelength in metres.

Fig. 13.3 Illustration from which competency in mathematics is assessed on PISA. (Source: OECD (2009). PISA Released Items—Mathematics. Retrieved from <https://www.oecd.org/pisa/38709418.pdf>)

Cooperation and Development 2009). But Solano-Flores and Wang (2015) discovered that items with illustrations are interpreted differently in different countries.

These investigators say that cultural differences in the interpretation of illustrations *significantly affected the scores obtained by nations*.

Commenting on this particular figure, Sjøberg (2007) says:

If the marked **footstep** is 80 cm (as suggested in other information that is given), then the **footprint** is 55 cm long! A regular man's foot is actually only about 26 cm long, so the figure is extremely misleading! But even worse: From the figure, we can see (or measure) the next **footstep** to be 60% longer [than the first **footstep**]. Given the formula above, this also implies a more rapid pace, and the man's acceleration from the first to the second **footstep** has to be enormous!

After other criticisms, Sjøberg says:

The situation is unrealistic and flawed from several points of view. Students who simply insert numbers in the formula without thinking will get it right. More critical students who start thinking will, however, be confused and get in trouble! (see also Sjøberg 2015).

13.1.4 Construct-Irrelevant Variance and PISA Tests

Another criterion for good SATs is to minimize construct-irrelevant variance. If construct-irrelevant variance affects the scores obtained, the interpretation of the test is more difficult, and the inferences that we want to make from the test may be suspect.

Test items should be related to the constructs under investigation, in this case—reading, science, and mathematics knowledge. But we see that in cross-national testing, there are potential sources of construct-irrelevant variance due to differences in languages, and in the interpretations of contexts and illustrations. And how do we avoid irrelevant variance in science assessment when the USA, Libya, and Myanmar continue to reject the metric system? Or, because the reading load is quite heavy when illustrations and contexts are employed, it seems a sure bet that reading ability is a source of construct-irrelevant variance in the assessment of both mathematics and science.

13.1.5 Raw Scores and Imputed Scores Derived from PISA Items

I have little doubt that PISA technicians are skilled. PISA has employed some of the best measurement people in the world. But common sense and research now suggest that even small differences in national raw scores due to small differences in the interpretation of items associated with language, illustrations, contexts, and construct-irrelevant variance, make PISA interpretations quite a bit more problematic

than we have been led to believe. Because of these factors, there is certainly a high likelihood of small national differences at the level of individual items. These small differences become magnified when sophisticated statistical models are used to put the national scores into a metric with a mean of about 500 and a standard deviation of about 100, from which the ranks of nations on PISA are determined. As I understand it, total scores are imputed from the characteristics of each of the items passed, and we now know that these items are likely to reflect national differences in language and culture, not simply student achievement. In fact, raw scores among nations hardly differ, while the scaled scores and ranks used in interpreting PISA scores differ quite a bit. This situation arises because of the predictions of total scores from the small sample of items given to each student in a PISA sample (Table 13.1).

As can be seen, nations with the *same raw scores*, say Slovenia and the USA, have scale scores that differ quite dramatically. Slovenia is given the scale score of 501, while the USA's scale score is determined to be 481. This is hard for the common person to understand: The same raw score, but scale scores that differ by 20 points, and producing a difference of 15 ranks! Note also that Finland and Israel differ by 2 raw score points but by 52 scale score points, and by 29 ranks.

If each test form of about 30 items is a purposeful sample of the 109 math items used in 2012, then many nations are performing quite similarly up until the imputation scheme, where the sampling design is used to determine the scale scores and

Table 13.1 PISA 2012 raw scores, scaled scores, and ranks for selected countries

Nations	PISA 2012 Raw Score in Math	PISA Scaled Score in Math	Rank of Nations
Finland	13	519	12
Poland	13	518	14
Vietnam	13	511	17
Austria	13	506	18
Ireland	13	501	20
Slovenia	12	501	21
France	12	496	25
Iceland	12	493	27
Norway	12	490	30
Spain	12	485	33
United States of America	12	481	36
Croatia	11	471	40
Israel	11	467	41

Selected national raw scores, scaled scores, and ranks for PISA 2012 NB: Number of items in mathematics in 2012 = 109; Students in each country take about 30% of these items on different forms of the test. PISA scores for countries are based on the unadministered items, as well as the administered items, with scores on the unadministered items predicted/extrapolated from the items that were administered, using weights based on student samples in each nation

ranks for a nation. What we get, a bit magically for most of us, is a lot of imputed (or plausible) scores for a nation's students.

The psychometric procedure, used to determine these scores from the samples of items, but not the whole test, uses the well-known and quite brilliant Rasch model. But as I understand it, this model only works if the questions PISA uses in each country have the same difficulty level. And we have just seen that because of language, the use of illustrations, and the need for descriptive contexts, equality of difficulty across nations is unlikely, and perhaps impossible.

This suggests that we can expect some wide ranges of values in the scale scores determined from the forms that a nation used, and the plausible or imputed values determined from those forms. And that is exactly what we get. For example, according to the 2006 reading rankings, Canada could have been positioned anywhere between the 2nd and 25th ranks, Japan between the 8th and 40th, and the UK between the 14th and 30th (Kreiner 2011). Such variation in scores and the associated ranks suggests that the reliability of PISA scores and rankings is more questionable than consumers of PISA have ever been led to believe (Kreiner and Christensen 2014).

13.1.6 PISA Reliability

Standardized Achievement Test designers pride themselves on having high reliability, so that the possibility of valid inferences can be made from the scores obtained. But the PISA designers may not always meet that criterion as well as they might hope to do. For example, in two provinces of Italy (Bratti and Checchi 2013), the opportunity arose to retest students a year later with the same forms of the PISA test that they originally took the previous year. This study was concerned with the value added by the students' schools. They chose to use PISA as the Standardized Achievement Test from which the school's added value would be calculated. In one province, tested in Italian, the year-to-year student scores were quite highly correlated, as might be expected when using a well-designed SAT. But in another province, French speaking, the correlation of the students' scores from year to year was quite low, in fact, near zero! This is not very reassuring! The differences, it seems, were due to different attrition rates over the single year, which meant that in the low reliability district, a slightly different cohort took the test the second time. Since PISA is given every 3 years, and different 15-year-old cohorts are used in each nation, the stability of scores over the 3 years between assessments is quite likely to be less than is desirable for the design of national education policies that depend heavily on reliable trends. The trends derived from these data may, therefore, be quite suspect.

13.1.7 *Sampling Issues and PISA Testing*

The trustworthiness of the raw scores, especially of the imputed scores, clearly depends on the sampling schemes devised by PISA. That too is not perfect. Loveless (2013) has shown that the extremely high PISA scores obtained by Shanghai in 2012 were obtained, in part, by leaving out tens, if not hundreds of thousands of children of migrants. These migrants are often rural Chinese families without government permission to work in Shanghai. The children of these illegal or undocumented families are not always permitted to go to school, or they may be purged from public school by age 14, just before the samples for the following year's PISA assessments are determined. The sampling errors were well known to PISA, though apparently ignored by them, and ignored as well by newspapers around the world that discussed how good the Shanghai schools appeared to be.

Similarly, and quite convincingly, Carnoy and Rothstein (2013) have identified PISA sampling problems in the USA. For example, the 2009 PISA sample had 40% of the participating American students coming from schools where half or more of the students were eligible for free and reduced lunch programs. But the percent of US students actually in schools with such high rates of poverty is much lower. Carnoy and Rothstein (2013) determined that if the 2009 sample had been correct, the rank of the USA on PISA would have gone from 14th to 6th in reading and from 25th to 13th in mathematics.

13.1.8 *Validity and PISA Testing*

All SATs depend on convincing evidence of validity to justify both their use and their costs.

To claim *Content Validity* for PISA would require evidence that the PISA assessments of 15-year olds today be related to the real-world tasks that are required of adults in their work and home lives in, say, 10–15 years from now. PISA explicitly seeks assessment tasks that are representative of the skills needed *in the future*, making it impossible to judge PISA on the adequacy of its content validity in the way that we can judge other tests, TIMSS, for example, which attempts to assess contemporary curricula.

A *construct validity* argument would find that scores on PISA, PIRLS, TIMSS, and certain national tests (NAEP and NAPLAN, for example) are moderately or strongly correlated in each of the content areas assessed. There is evidence that this is true, so the construct validity argument can be made, but not as strongly, perhaps, as might be desired. Score and rank order differences that arise as a function of taking these different tests promote the argument that the mathematics, science, and reading knowledge constructs being measured in different nations may be different. This results in difficulty in test score interpretation for a particular test in a particular country. The USA, for example, does extremely well on the PIRLS test of

reading. We do quite well on the TIMSS science and mathematics tests. But we do not do as well on PISA. How shall we judge our national level of achievement when these tests of similar constructs yield such different estimates of U. S. achievement?

The *consequential validity* argument has already been alluded to—newspapers and politicians each go mad with the PISA results, either attributing credit to national governments for things they may have had nothing to do with, or blaming institutions and people for results they do not like, even though those institutions and people may not have had much influence on the results. We know that in the USA the variance attributable to teachers and schools from results of virtually all SATs is quite small, compared to the variance attributable to social class, income, neighborhood, educational level of the mother, etc. So, interpreting the results of PISA in ways that laud or condemn teachers and schools makes little sense. While Finland and the USA differ in scores on PISA, they also differ on childhood poverty rates. Finland's childhood poverty rate is about 4%, while the poverty rate for children in the USA is likely to be over 20%. Though politicians and journalist may blame schools and teachers, it is certainly the case that the social systems of the two nations have real effects on PISA scores (Condrón 2011). Clearly, in almost all PISA countries, the tests have consequences. Results are attended to in both appropriate and highly inappropriate ways. In the USA, valid inferences drawn from PISA data are a rare experience.

One more type of validity needs to be addressed, *predictive validity*. PISA really is about predicting a nation's fate as a function of the test scores generated by its school systems. The economists Hanushek and Woessmann (2010), along with the OECD and many politicians, make the case that a substantial rise in PISA scores for nations would mean trillions of dollars in increased business activities. Their argument is that as nations set about to improve their curriculum, their schools, and the quality of their teachers, they will soon have higher PISA scores, and that will inevitably make their national economies hum. The data used by Hanushek and Woessmann (2010) to make these oft-repeated claims for predictive validity have been seriously challenged, and now appear to be indefensible (Komatsu and Rappleye 2017; Lauder 2015).

So, PISA is taken quite seriously as an omen; the scores are talismanic objects. But for me, the logic of this is closer to that of the cargo cults of the early twentieth century than the realities associated with modern nation states.

I find at least three things wrong with the economic benefits argument. The first is that Standardized Achievement Tests only weakly show any effects of curriculum, schools, and teachers. Thus, improving these aspects of schooling will meet with very limited success in influencing PISA scores. Teachers and schools simply do not affect the variance in Standardized Achievement Tests very much. Thus, all policies derived from SATs, such as PISA, NAEP, TIMSS and others, that are designed to improve schools *without* improving the economic and social conditions of the children and families in those schools are doomed to deliver tiny benefits!

PISA obtained its magical powers, becoming endowed with predictive validity in part, because, of a search for an index that assessed the potential of our globalized economies (Rizvi and Lingard 2011). It does not do this well at all. For

example, based on the results of previous administrations of PISA, at a time when Japan did especially well on PISA, theirs was the economy to watch. We did. Japan's economy failed and after over 10 years of strong PISA scores, it is still failing. On the other hand, the 2000 administration of PISA provided a rude shock for Germany as it garnered a relatively low score. Their economy, however, moved on to become the strongest in the European Union. In 2000, Finland also received a rude shock (Sahlberg 2011). Because of its high PISA scores, it became the fantasy land for Western nations. And although it has fallen off a bit in recent PISA testing, it is still acknowledged as a world leader. But what about the Finnish economy? It has not been doing well for a number of years, despite all of Finland's PISA talent. Not long ago the Finnish Prime Minister said that his high scoring country is in a "lost decade." Their economy has fallen behind its Nordic neighbors and its European peers. Pay increases have been on hold, government debt almost doubled from 2008 to 2014, taxes are up a few percent, and the jobless rate not long ago was about 9%.

And at the same time that Germany worried, and Finland was surprised, the USA and Israel did relatively poorly on PISA. Yet each of their economies has thrived in the years since. The USA, in fact, with modest performance on PISA, has won the distinction of being number one on the 2014, 2016, and 2017 GEDI Index (Acs et al. 2016). The GEDI is the World Global Entrepreneurship and Development Index. While PISA gets attention as a predictor of future economic prosperity, despite no proof that it actually has predictive validity, it might be more reasonable to expect the GEDI to be such a predictor instead. Few US pundits said anything about the release of the GEDI, though they rarely miss a chance to wring their hands over PISA scores. Yet, the GEDI researchers were associated with the Imperial College Business School, the London School of Economics, the University of Pécs, and George Mason University. Researchers at these institutions studied entrepreneurship in 120 nations. They have found consistently that the No. 1 country in the world was the USA. It strikes me that entrepreneurship among adults is much more likely to be a predictor of a nation's future economy than is PISA. This is especially true when that test assesses 15-year-old American kids who know that the test scores count for nothing, and that the results are never seen by their teachers or their parents. Korean youth may take the PISA for the honor of their country. Youth in the USA take the test because they are ordered to. I would not predict much based on that kind of sample!

Contrary to the despair over PISA scores in the USA, the GEDI authors say:

Entrepreneurship plays a crucial role in the US economy and as result, policy initiatives are created to encourage entrepreneurial behavior. This, coupled with the culture of determination and motivation, makes the US a great place to be an entrepreneur.

Moreover, the researchers say, the gulf between the United States and other countries is large and appears to be widening, not narrowing. In addition, the 2014 GEDI compared the experience of female entrepreneurs, for the first time, to reflect the increasing participation and importance of women in entrepreneurship around the

world. The researchers determined that the USA is also the world's leader in female entrepreneurship.

Furthermore, while the US PISA scores lead many to predict doom and gloom for our economy, there is also the Global Innovation Index. It too appears likely to predict future economic activity for nations better than would a SAT like PISA. The Global Innovation Index is put together each year by two prestigious universities and a UN committee and it uses 82 different metrics to determine rankings. The 2016 index is presented as Table 13.2 (Dutta et al. 2016).

In the first column, I entered the Global Innovation Index ranking for the top 15 nations. As you can see, the USA ranks 4th which is not bad at all. Then I entered the combined ranks of these nations on PISA 2015 and correlated the two measures. The correlation is negative! Pisa seems not to predict innovativeness of a nation. I think, therefore, that claims of predictive validity for PISA remain unsubstantiated.

There is one more issue that is both a concern about reliability and validity for PISA. It is the number of false positives and false negatives that show up at the item level. New Zealand researchers (Harlow and Jones 2004) studied items that students had gotten wrong and right on an international SAT of science and did a version of dynamic testing with the students. They administered the items individually to the students and probed whether the students who got the items wrong really did know

Table 13.2 Global Innovation Index in 2016 and PISA 2015 Science Rank

Country/Economy	Score (0–100)	Rank	Income	PISA2015 Science Rank
Switzerland	66.28	1	HI	18
Sweden	63.57	2	HI	28
United Kingdom	61.93	3	HI	15
United States of America	61.40	4	HI	25
Finland	59.90	5	HI	5
Singapore	59.16	6	HI	1
Ireland	59.03	7	HI	19
Denmark	58.45	8	HI	21
Netherlands	58.29	9	HI	17
Germany	57.94	10	HI	16
Korea, Rep.	57.15	11	HI	11
Luxembourg	57.11	12	HI	33
Iceland	55.99	13	HI	39
Hong Kong, China	55.69	14	HI	9
Canada	54.71	15	HI	7
Japan	54.52	16	HI	2
France	54.04	18	HI	27
Australia	53.07	19	HI	14
Austria	52.65	20	HI	26

Source: Dutta et al. (2016). The Global Innovation Index 2016 Winning with Global Innovation. [http://english.gov.cn/r/Pub/GOV/ReceivedContent/Other/2016-08-15/wipo_pub_gii_2016\(1\).pdf](http://english.gov.cn/r/Pub/GOV/ReceivedContent/Other/2016-08-15/wipo_pub_gii_2016(1).pdf). OECD, PISA 2015 Database, Tables I.2.12a-b, I.3.1a-c and I.3.10a-b

the answer if probed a bit. And they probed to see whether the students, who got the items correct, had the knowledge required for a correct answer. Their research revealed that many of these New Zealand test takers were false negatives on the test items, that is, they did know their science but got the item wrong. Many others were false positives; they did not know their science well but got the item right, anyway. More work, like this, needs to be done since these results suggest problems with both the reliability and validity of PISA and other SATs.

13.2 A Conclusion About PISA Quality

PISA is clearly better supported, has better personnel working on it, and its technical characteristics are better than many other Standardized Achievement tests. But like all other SATs, it has faults and is not above criticism. I have criticized the assumption of comparability of the test across nations because of the real possibility of differences in the cognitive complexity of items and item understanding in the different languages and cultures of each nation. It is more than just translation that is of concern. The contexts and illustrations from which PISA items are derived were found *not* to be equivalent across countries. And it is likely that they can never be made equivalent until we all speak Esperanto!

The difference in scaled scores and ranks, associated with identical raw scores among nations, may stem from slight differences in item difficulty by country. And if that is true, then the requirements of the Rasch model are not met and imputation of PISA scores and their associated ranks is seriously flawed.

We now know as well that samples drawn in each nation are not always as accurate a representation of the entire population as they should be, and this too makes the imputation of scores from the samples problematic. Looking at reliability also revealed some rough spots for PISA. That is, sampling procedures and cohort differences from administration to administration make trends much more difficult to trust than is acknowledged. In addition, the predictive validity of PISA in the economic realm appears to be quite overstated. And finally, the rates of false negatives and false positives, at the item level, on one PISA administration, have been found to be of considerable magnitude. Both reliability and validity depend on the magnitude of these occurrences being quite small. But that may not be the case.

Technically, I doubt if any organization can do a better job than PISA in designing a cross-national test that is an appropriate starter of conversations about education. But the national angst, joy, and subsequent policies derived from either low or high scores on PISA assessments are misplaced. Because of its inherent design flaws—*not unlike every other Standardized Achievement Test I know*—PISA results at best might initiate conversations about each nation's visions for childhood, schooling, and economic vitality. PISA should *not* be a catalyst for change without considerable time spent in conversations about one's own national education system in a globalized world. I would limit PISA's influence not just because of the technical problems I have just reported; it will always struggle with those. Rather, I would

limit its influence in the USA because PISA's biggest flaw is unacknowledged, and that is, that the test is picking up the cruel realities of contemporary American policies about income distribution and housing, medical care, jobs, wages, and so forth.

PISA is a Standardized Achievement Test and as such it is a reflection of our society much more than it is a reflection of our curriculum, teachers, schools, and students. That is, the biggest problem with all SATs is the same: In our times, too many inferences about the quality of life in our schools are being drawn, while too few inferences are being drawn from these tests about the quality of life for our families and in our neighborhoods.

13.3 The Limits of PISA and Other SATs in Providing Information for Policies About Teachers and Schools

I will make a bold statement: There are no SATs—neither state, national nor international—whose scores cannot be very well predicted from demographic data. The SATs are notoriously insensitive to teacher and school effects, and powerfully influenced instead by cohort and neighborhood effects, and by family social class, particularly level of poverty. SATs are reflective of sociological variables much more than they are reflective of instructional and educational variables. The evidence for this is overwhelming and avoided by most of those who use PISA data to design policy. Note that what I say suggests that every policy derived from PISA (and other SATs) concerned with the improvement of schools and classrooms is doomed to small effects. This is best described by Haertel (2013), who reviewed the literature on SATs and offers the analysis, as shown in Fig. 13.4. Teachers account for about 10% of the total variance, schools also account for about 10% of the total variance. Error (unexplained variance) accounts for about 20% of the total variance. The

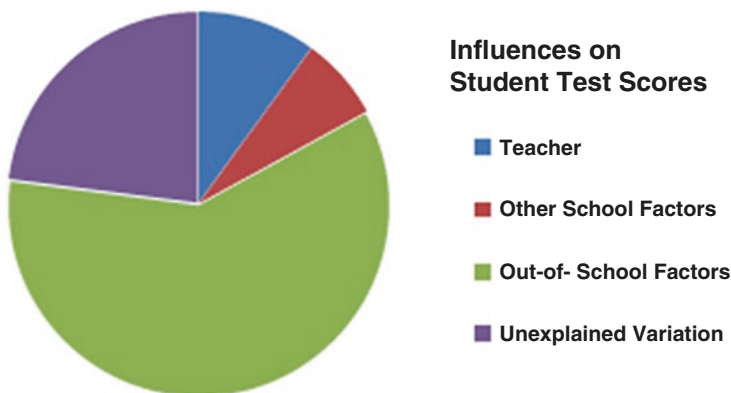


Fig. 13.4 Variance accounted for on SATs.

majority of the variance in scores on SATs, about 60%, is accounted for by out-of-school factors such as family, neighborhood, and income.

Here is the most important point of this figure: Policies designed to affect teachers that are derived from SATs will usually affect only about 10% of the variance we see in students' test scores. And policies designed to affect curriculum, leadership, scheduling, time usage, homework, or other school level factors will also affect only about 10% of the variance in SAT scores. It is the outside of school variables that affect SAT scores the most. I have identified a set of out-of-school factors known to affect the test scores produced by schools (Berliner 2009; Wilkinson and Pickett 2010). These all affect what occurs inside the school and inside the classroom.

- Percent of low birth weight children in the neighborhood
- Inadequate medical, dental, and vision care in family and neighborhood
- Food insecurity in the family
- Environmental pollutants in home and neighborhood
- Family relations and family stress
- Percent of mothers at the school site that are single and/or teens
- Percent of mothers at the school site that do not possess a high school degree (or have not finalized secondary education)
- Language spoken at home
- Family income
- Neighborhood characteristics
 - Rate of violence
 - Drug use
 - Mental health
 - Average income
 - Mobility rates of families
 - Availability of positive role models
 - Availability of high-quality early education
 - Transportation to get to jobs

Concern for these variables, more than PISA test scores, seems much more likely to affect student achievement. Our contemporary thinking about these out-of-school issues begins with the Coleman report (Coleman et al. 1966). That report shocked our democracy 50 years ago as it convincingly argued that teachers and schools were not nearly as powerful as we thought in breaking the cycle of poverty. Although that fact has been understood for a long time now, it is too often ignored by policy makers and researchers alike (Powers et al. 2016).

Borman and Dowling's (2010) re-analysis of the Coleman data, using more modern and more powerful statistical measures, makes two claims that are important for the argument being made here. First, they claim that teacher effects, compared to composition effects, *are a minor predictor of student scores*. Second, they claim that the *peer and compositional effects on achievement test scores* are about twice as strong as is the racial or social class standing of the students themselves. Who you go to school with matters a lot!

Because, in the western world, we almost always live in socioeconomic and racially homogenous enclaves, our schools are often segregated by race and class. In terms of school achievement, the race and class of those individuals matters, but only a little, until those racial and social class characteristics influence the peer, or cohort, or composition of students at the school site. Some peer groups and cohorts promote high achievement, and some do not; but what must be remembered is that the aggregate scores obtained on SATs given to those classrooms and schools are substantially independent of the effects of teachers and schools on those students.

The point is that teachers, who currently get so much blame for the outcomes of our schools, are probably accounting for only about 10% of the variance in those aggregate outcomes. And the schools, frequently the recipients of blame when PISA or other SAT scores are low, also account for about 10% of the variance in SAT outcomes.

The most recent support for this claim is from the American Statistical Association. Their position paper was on value-added models of teacher evaluation (American Statistical Association 2014), in which a pre- and a post-SAT is used to judge the value added to student scores by a particular teacher. They say, “Most VAM studies find that teachers account for about 1–14% of the variability in test scores, and that the majority of opportunities for quality improvement are found in the system-level conditions.”

13.4 Conclusions Considering the Limits of SATs for Policies

So, outside-the-school factors are often three times more powerful in affecting SAT scores than are inside-the-school and inside-the-classroom factors; Put differently, outside-the-school factors are six times more powerful than are teachers and six times more powerful than are the schools when the influence on SATs is analyzed. Policies, dealing with teacher and school improvement that are derived from SATs like PISA, can only have limited success.

A few million independent anecdotes about how teachers affect individual students are proof enough of their power to influence individuals. In my life, they made a big difference in what kind of person I became, and some of my teachers also affected the habits of mind I bring to my work and to my personal life. My children have also been positively affected by some of their teachers. And I am sure that readers of this chapter have similar stories to tell, the vast majority of which are about positive effects, although teachers have the power to negatively affect individual children, as well.

This is a paradox and like all paradox's a bit confusing: Teachers and the schools attended by a nations children affect the individual students in their classes enormously: teachers really do touch eternity (Barone 2001). But teachers and schools affect the SATs ordinarily used to judge teachers and schools only a little. PISA is merely a SAT. It measures demographic characteristics quite well and is almost

useless for suggesting policies that affect teachers and schools that will affect the scores on those SATs.

13.5 Summing Up

At the start of this chapter, we saw that PISA, like every other SAT, struggles with technical problems, including that most important criterion for any SAT, its meaning! What is PISA valid for? I would argue that PISA is perfectly wonderful for starting conversations about schooling; the outcomes desired for a nation's youth; the curriculum to achieve those outcomes; culture and childrearing practices and their effects on school achievement; income distribution and its effects on youth behavior and school achievement; the design of trust relationships between educators, parents, and policy makers; discussions about whether a metric really can be created for everything that a community wants to assess; and so forth.

The distinguished British comparative educator, Robin Alexander (2012), is likely to agree with a good deal of what I say in this chapter. He has some remarkable insights into the madness that attends to PISA scores because of their inappropriate use. For example, he notes how a team headed by Michael Barber wrote a report for the multibillion dollar management corporation McKinsey & Co., that is inane (my description!). The report, titled *How the World's Best-Performing Education Systems Come Out on Top*, was almost universally praised by policy makers throughout the western world. Its authors concluded from PISA 2003 that "Three things matter most: (1) getting the right people to become teachers, (2) developing them into effective instructors, and (3) ensuring that the system is able to deliver the best possible instruction for every child." (Barber and Mourshed 2007: 2). Well, duh! I might have written such banality well before anyone ever heard of PISA. This really is not high-level thinking, especially given the cost of the report! But in addition, as I have argued above, this report is not merely ordinary in its conclusions: it is also wrong!

Policies aimed at teachers, schools, and school systems will have little effect on national school system achievement as measured by SATs, because SAT scores are reflections of other things—income inequality, housing policy, cohort effects, culture, and so forth (Sjøberg and Schreiner 2005). This expensive and lauded report has no clue about what makes for an SAT score!

Alexander (2012) cites others who also would have found Barber's McKinsey report ridiculous. Ernest Boyer, an influential educator and policy analyst of the 1960s once said: "Schools can rise no higher than the communities that support them" (Boyer 1983: 6). Not long after, in 1970, the well-respected British social scientist Basil Bernstein said, "Education cannot compensate for society." (Bernstein 1970: 344). I would like to end this chapter with the insights of a scholar who works for PISA (Andreas Schleicher 2009), and one who I believe to be much wiser, though he wrote 115 years earlier (Michael Sadler 1900: 50; see Alexander 2012). Schleicher, after examining PISA data, says the ideal school might have little bits of

Finland, Japan, England, Israel, Norway, Canada, Belgium, and Germany in the way it develops individual strengths of students, gets teachers to cooperate, sets clear performance targets, celebrates discourse and helps students to learn from their mistakes, and so forth. But Sadler says this:

In studying foreign systems of education we should not forget that the things outside the schools matter even more than the things inside the schools, and govern and interpret the things inside ... No other nation, by imitating a little bit of German organization, can thus hope to achieve a true reproduction of the spirit of German institutions ... All good and true education is an expression of national life and character ... The practical value of studying in a right spirit and with scholarly accuracy the working of foreign systems of education is that it will result in our being better fitted to study and understand our own.

That is what PISA and other SATs are good for. They are capable of providing data for conversations about schooling in each society. PISA has no magic. Its scores are not talismanic. It is a starting place for conversations not for the immediate design of policy (see Sellar et al. 2017).

Policies about teachers and schools, like those promoted by McKinsey and company, are both misleading and useless if they are expected to produce large changes in the scores on an SAT. PISA is simply another SAT, with some added and unusual technical problems, and all the usual insensitivities to teaching and schooling that characterize all standardized achievement tests.

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Chapter 14

Revisiting the Fabrications of PISA



Luís Miguel Carvalho

14.1 Introduction

Since the beginning of the current century, the acronym PISA (Programme for International Student Assessment) seems to pervade the multiple contexts where the education systems and their governing are subjected to debate. The presence of this Organization for Economic Cooperation and Development's (OECD) international large-scale assessment in national spaces has diverse manifestations, such as supporting “analyses and rationales” for the discussion of specific issues, or being used as a “source” for secondary studies or as “learning opportunity” for the development of accountability policies (Lawn and Grek 2012). So far, PISA became a central element of a universe of knowledge, which, paraphrasing Lindblad and Popkewitz (2004: xx–xxi), ensures that expert-based education policies can lead each nation into the so-called knowledge society. The chapter addresses this umbilical relation between governing and expert knowledge by examining the meanings and processes that sustain PISA contemporary status of indispensable resource for the imagination and scrutiny of educational issues and policies.

Based on the revision of a previous article on the organizational and cognitive dimensions of PISA (Carvalho 2012), and on the posterior works on the uses of PISA in national and supranational contexts (Carvalho and Costa 2015, 2016; Carvalho et al. 2017) and on the intensification and sophistication of PISA's association with the policy processes (Carvalho 2014, 2016), the chapter focuses on the fabrications, that is the fictions and the making (Popkewitz 2000a, b) that support the projection of PISA as a central element for thinking-acting education policies.

In fact, the chapter retrieves two pillars of the approach to PISA followed in my previous texts: (1) the representation of PISA as a knowledge-policy tool; (2) the understanding of the status achieved by PISA as the result of the making of a proper

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259

ecology. Thus, the first section of the chapter clarifies the notion of PISA as a tool that combines assessment techniques with a set of representations about education and a philosophy for the governance of education, and discusses its power effects. The second section focuses on the making of a PISA's ecology as a process that entwines cognitive and social practices related with the construction and rise of the subject of inquiry (the competences of literacy) and, simultaneously, building public confidence and dependence on PISA. The chapter concludes with a proposal of new challenges for researching the trajectories of PISA in national contexts.

14.2 PISA as a Knowledge-Policy Tool

Along the last 15 years, OECD has reiterated the idea of PISA as a response based on specialized knowledge to meet the need expressed by national governments for useful and credible data on their performances (OECD 2001, 2007, 2014). This overt policy-oriented nature was recently retaken in *Beyond PISA 2015: A longer-term strategy of PISA*, a document that equates the future of the program:

It focuses on providing data and analysis that can help guide decisions on education policy. By linking data on students' learning outcomes with data on key factors that shape learning in and out of school, PISA highlights differences in performance patterns and identifies features common to high-performing students, schools and education systems. (OECD n.d.: 1)

The OECD's self-portrayed quality monitoring tool is observed differently along this chapter: PISA is rather observed as a device that embraces and conveys different ways of imagining (and doing) education, schooling, and social research, and—simultaneously—plays a part in the coordination of education policies and public action.

14.2.1 *Fabricating Education Systems and their Steering*

Drawing on the concept of “public policy instrument” as put forward by Lascoumes and Le Galès (2007: 4–6), PISA is approached as a tool that organizes social relations between administrative and administered subjects according to specific interpretations of the social world it addresses and based on a specific concept about the ways it should be oriented, coordinated, and controlled. From their point of view, each instrument is a combination of technical components and social components, that is, values, interpretations, and concepts about the social realities it describes. Regarding PISA, one might say that its sophisticated techniques are driven by a specific problematization of the role of education in contemporary times, displaying a particular way of challenging the national policies. Concomitantly, PISA bears principles and practices for policy processes.

On the one hand, PISA operates over several core categories of schooling (to a certain extent rewriting the educational model of contemporary societies), redefining students as lifelong learners, redefining teaching–learning relationships and settings, and redefining school knowledge.¹

To clarify this statement, one should look to the innovative focus that PISA claims to bring to assessments: “rather than examine mastery of specific school curricula, PISA looks at students’ ability to apply knowledge and skills in key subject areas and to analyze, reason and communicate effectively as they examine, interpret and solve problems” (PISA Website). This definition allows OECD to move away from the conventional self-reflection of national school systems based on their own categories and “outputs” (with assessments relying on tests and examinations based on national curriculum goals and content) and toward the territory of “outcomes,” thus directly connecting the contexts, practices, and results of teaching/learning with the so-called demands of the school system environment. Parallel with this differentiation comes the redefinition of the appropriate school knowledge for the so-called knowledge society: the notion of competence enacts a “utilitarian perspective” on knowledge as it takes practical usefulness in solving everyday problems as the main criterion for the assessment of school knowledge (Mangez 2008: 102–104). Therefore, it promotes a restructuring of curricular composition in trans/cross-disciplinary terms. These shifts go hand in hand with calls for change in teaching and learning structures (for example, from “hierarchical” to “organic” models or from the sequentially transmitted “bodies” of knowledge to the construction of learning by means of students’ cognitive connection with what they already know).

On the other hand, PISA also sustains particular cultural dicta about policy makers in contemporary times.

It redefines them as “problem-solvers” and “policy-learners,” which are to be decision-makers guided by searching for competitive advantages, measuring the outcomes of the school system, identifying weakness, and adopting solutions based on what works in other systems. That is to say, policy-makers that learn about competitors so as to progress more quickly. Moreover, PISA is nurtured by and nurtures several dicta on governing processes: the primacy of the rational and evidence-based model for the coordination and control of actions in the education sector, contrasting with ideological and/or opinion-based coordination; the free acquiescence of decision makers to be involved and to support, both materially (financial and other resources) and symbolically (with belief and praise) mutual surveillance as an expected and effective practice; and the systematic assessment of student

¹These visions echoed in diverse international organizations and have been developed in many other spaces, from policy analysis texts (see, for example, Weeres and Kerchner 1996) to reports produced by specialists nominated in the mid-1990s by the (then) Commissioner for Education, as quoted and analyzed by Lawn (2003: 331): “The future of Europe has to be constructed by several shifts: from objective to constructed knowledge; from an industrial to a learning society; from instruction to personal learning; from formal educational institutions towards new organizational structures for learning (yet to be determined)” (European Commission 1997: 7).

literacy performances as a useful and trustworthy resource for the steering of educational systems.

14.2.2 Fabricating Transnational Governance

Returning to Lascoumes and Le Galès perspective (2007: 3), each policy instrument (a) “constitutes a condensed form of knowledge about social control and ways of exercising it,” and (b) each instrument produces its own effects “which structure public policy according to their own logic.” In order to discuss the presence of these features in PISA, we need to consider the OECDs’ history, resources, ideas, and choices.

First, PISA has a course that is inseparable from the OECD trajectory in the transnational governance of education. Generated in the context of the OECD’s project on the International Indicators of Educational Systems (see Morgan 2011), PISA implements an education agenda marked since the 1990s by the idea of monitoring quality, and involved in a continuous manufacturing of problems and solutions for the so-called knowledge economy (Rinne et al. 2004). It is also the most fruitful example of the OECD’s “comparative turn” (Martens 2007) and of its “infrastructural and epistemic” governance that, as Sellar and Lingard (2013: 13–14) pointed out, generates a “self-perpetuating dynamic” in which the OECD “both prescribes education policy approaches and assesses the performance of national education systems in these terms.” This is one of the particularities of the OECD intervention: a focus on “surveillance of performances” and “assessment of policies,” aiming to impact in national policies as a “creator, purveyor and legitimator of ideas” (Mahon and McBride 2008: 7–15).

Second, PISA operates through the power of guilt and hope. On the one hand, it operates through the culpability and the responsibility that it conveys to national spaces, because, together, school systems’ positioning (in a competitive space) and numbers (systems’ performances) bring “naming, blaming, and shaming” to the national policy spheres and actors. On the other hand, PISA operates also providing optimism for the possibility of reform based on evidences, and creates confidence in national policy actors as effective reformers. Moreover, PISA is an *actant* that brings the comfort of criticizing or legitimizing policy problems and solutions with the blessing of a putative universal, independent, expert knowledge.

14.2.3 Aggregation Effect

What happens when PISA frames, data, and analysis circulate (almost) worldwide? For the last 15 years, supplementary visions have been added to PISA along its travels. Thus, new knowledges, new policies, and politics have been gathered to it.

The credibility and sense of usefulness achieved by PISA is traceable in the variety of sociopolitical mobilizations of PISA already identified by a quite extensive literature on the reception of PISA in European contexts (see Carvalho and Costa 2016): there is an assignation of multiple purposes to PISA, namely of legitimation (i.e., legitimating reforms, specific policies, assessment instruments), information (as a complementary or as a compensating/substitutive source for the steering of education systems), and idealization (supporting the construction of diverse educational ideals, projections, or narratives, about education and educational reform).

Therefore, PISA objects/texts are ubiquitously present in national contexts, by the hands of different users (politicians, and other players involved in public educational debates, national experts, and researchers prolifically using it for secondary analysis). However, they are reinterpreted and made acceptable and efficient for each sociocognitive context. Thus, they are subject to diverse selections, either regarding the information displayed in the reports or the policy domains addressed by PISA recommendations. The summary of a recent review of the research on PISA effects stresses these same trends: on the one hand, “PISA has a strong influence on a variety of national reforms (...) however this influence strongly depends on domestic policy contexts” (Pons 2017: 131).

In sum, divergent uses and effects (regarding specific political choices or solutions, or to interpretations and uses of PISA products by other social actors) coexist with a convergence toward the tool. This phenomenon supports the constitution of PISA as a taken-for-granted source for public policy actors. As discussed before (Carvalho 2012), this is neither a paradox nor an inconsistency of the tool, but an effect of its power: the signal of the proficiency of a tool that keeps actors and agencies (that operate in different social worlds, and at regional, national, and supranational spaces) bound by/to PISA’s multiple activities and products. In other words, PISA is effective because of the—convergent and divergent—engagement and participation of multiple actors in its own production, dissemination, use, and consumption. Thus it performs an *aggregation effect* (Lascoumes & Simard, 2011): controversies, disputes regarding the analysis of data, and competing thoughts on solutions for “education problems”—the imagination and/or the scrutiny of educational systems, policies, and practices—are recurrently made by a dependence/commitment to PISA.

To understand how this effect is achieved is important to connect the dimension of the ideas, frames, expectations, and prescriptions generated by PISA to the dimension of the organizational processes that structures the relations of interdependence between the actors involved with PISA, and that concomitantly put into circulation and legitimizes specific ways of understanding what education “is” and how it should be governed. This implies taking into account the OCDE intervention, according to its institutionalized *modus operandi*: idealizing, aggregating actors, supervising interdependencies (Marcussen 2004) but also intense and varied diffusion of informational products generated to diverse audiences. Both issues are addressed in the following section.

14.2.4 PISA as the Making of an Ecology

While accepting that trust in the OECD as an “expert organization” (Noaksson and Jacobsson 2003) precedes and promotes PISA’s public judgment as a valid and useful tool, not forgetting that the success of PISA capitalizes from a cultural and political environment that disseminates the conceptions of global economic competitiveness and the knowledge economy (Broadfoot 2000), the success of this knowledge-policy tool lies also in the making of effective connections between heterogeneous actors: public and private research centers, individual experts and researchers, OECD professionals, policy-makers, high-level civil servants and technicians from multiple countries, media ... in short, in making its own ecology.

14.2.4.1 Fabricating the Ecology

To grasp the success of such enterprise, it is enough to consider the growing number of countries involved and the extent of the geopolitical coverage achieved by PISA: in 2000, 43 countries took part in it (13 of which are not members of the OECD); in 2012, there were 65 participant countries (31 of which are not members of the OECD); in 2015, the date of the last assessment, 72 countries, from all continents and covering well-diverse cultures, economies, and political regimes. This broadening of participant countries/regions means also the enlargement of collective actors involved in PISA’s international and national/regional steering and management activities. The notion of the PISA “expansions” developed by Sellar and Lingard (2014) captures more comprehensively this success, including the following trends: “widening the scope of the assessment to measure a broader set of skills and competencies; increasing the scale of the assessment to cover more countries, systems and schools; and enhancing the explanatory power of the assessment for policy-makers and educators” (p. 924).

I relate these developments with the making of PISA’s *ecology* (Carvalho 2012). Adapting Everett Hughes’ notion of “ecology of institutions,” as quoted by Star and Griesemer (1989), this means the choices taken within the Program about its material, informational, and human sources, and also the actions carried out to establish continued and lasting exchanges with selected actors. In other words, the making of this ecology rests on a collection of practices that keeps PISA alive and expanding in a field populated by other agencies which also export educational monitoring devices and are involved in the making of usable knowledge-policy instruments for national or regional territories. In the following pages, I turn to two examples of the practices that support the effective connection to PISA by interested (individual and collective) actors: assembling and coordinating heterogeneous actors and knowledges; reaching and creating interest in heterogeneous actors not directly involved in PISA formal structures.

14.2.4.2 Assembling and Coordinating People and Knowledges

PISA is not merely a triennial survey and report. Together with the inquiry activities (design, trial, application, data-analysis) relevant face-to-face exchange activities take place (in meetings, workshops, seminars, etc.). Likewise, multiple publications—apart from the survey’s main reports—are generated and have a worldwide flow. Thus, is reasonable to observe PISA as a system of activities where communication and organization happen. All these activities involve a great variety of social worlds and multiple kinds of knowledge, interests, and perspectives. Thus, the accomplishment of PISA depends on bringing together—and ensuring the cooperation of—heterogeneous actors around a flow of activities, and on having them share the perception of PISA being a respectable provider of useful data/information/knowledge.

When asked about the role played in this process, the OECD Secretariat—the structure formally responsible for the management of the daily activities of PISA—presents itself as a catalyst for interaction between experts and politicians (see Carvalho and Costa 2009; Carvalho 2012). However, before becoming a “facilitator of relationships,” OECD began its own work as a provider of ideas, promoting the framework of literacy and reframing the old school system problem—the one of preparing the young generation for the future—in a much broader concern: the issue of the international competitiveness.

The OECD has generated its own initiative a specific framework—the competences of literacy—which became attributable to its own agency, as one OECD executive states:

We did a book—DeSeCo [Definition and Selection of Competencies]—it’s a definition and selection of competences ... That’s the source of PISA. It is a project we had over 5 years where we had anthropologists, psychologists, labor economists and all these people telling us what is competence, what does it mean to do well in life, what is a successful life and they come up with different answers (...) it was a really great inspiration because if we had only used educators we’d have quite the common denominator of national curriculum. (Interview with an OECD executive, 2008, cit. in Carvalho and Costa 2009: 75)²

Furthermore, the competences of literacy, generated within the OECD indicators project (*Indicators of Education Systems*—INES), build on the experiences (and reflections on the experiences) of many of the promoters of previous large-scale assessments: the OECD did not only reuse the methodological knowledge previously developed but also “recruited” actors previously linked to comparative international studies (Morgan 2011). Overall, according to Martens and Wolf (2009: 99), the conceptualization of PISA took 5 years and involved 300 “scientists” from all over the world.

The mobilization of diverse knowledges and experts has continued after PISA take-off. Along the last two decades, the development of PISA knowledge,

²For a detailed analysis on the role of DeSeco in the development of PISA and other surveys, as well as on the role of DeSeco for the establishing of networks of researchers involved in the making of PISA and studies on ‘competences, see Grek (2013).

disciplined by the literacy framework but also by assumptions, concepts, and methods from the psychometric world, entails contributions generated by experts from very different knowledge communities (Carvalho 2012): experts related to PISA core domains (mathematics, reading, and science) and other literacy domains invented along the PISA course (e.g., financial literacy) the “hard” knowledge of statistics, psychometrics, and compared assessment; knowledge of social psychology in relation to the study of attitudes; and streams of knowledge coming from policy evaluation and analysis, and from the school effectiveness tradition. Together OECD’s professionals and external experts collectively validate the data/information/knowledge they process. Finally, as the starting point of the studies carried out under PISA is partly defined by the representatives of the OECD member countries and the non-member countries associated with PISA, so the results of the technical work are open for their appreciation. In short, the knowledge produced and disseminated within PISA rests on consensus among OECD staff, research consortia, experts, and national representatives about what counts as usable and disclosable knowledge.

Along these processes, “the catalyst” has to fulfill positively the varied informational interests of those who gather and must, as well, keep them performing appropriately to what is expected from an organization that struggles for the status of a “truth teller” (Noaksson and Jacobsson 2003). Throughout the several sequences of tasks that make PISA (from building/reviewing each cycle framework to the delivery of publications), the “catalyst” also ensures that the interactions follow the common values and rules expected in a social space created by an expert organization, like consensus building. One good illustration is the management of PISA meetings.

From an examination of the narratives of national representatives interviewed in KNOWandPOL research about the dynamics of the PISA Governing Body meetings, a few themes come to the front (see Carvalho and Costa 2009): the OECD Secretariat has a leading role; national representatives perceive diverse types of participation, ranging from the convergent to the divergent type and from the active to the “reserved” type; the meetings are spaces where different—often conflictual—visions of education are shown, and where compromises and consensus are established, between participants with unequal resources. These unequal resources relate with the nearness—distance to the specific technical knowledge of PISA, the mastery of the English language, or the status of each country in the political-economic hierarchy of the OECD. What seems crucial though is the capacity to mobilize or to contest technical argument, because this one is perceived as having a central role in the achievement of political consensus. To many of our interviewees, the political building of consensus seems to be dependent on—and subordinate to—technical expertise on comparative assessments.

14.2.5 *Multiplying the Interested Actors*

PISA reaches well beyond the actors of its formal structures. It reaches and involves media agencies and national politicians, who selectively discuss the results, as well as national and/or regional governing and/or administrative structures that use PISA knowledge for creating their own assessment devices, and even researchers from various fields who use PISA data in order to build secondary analyses.

The connection that PISA has achieved with the media, and the importance given to it by the OECD, was already depicted as a “media strategy,” involving the management of the media coverage of PISA’s triennial data release and the production of media-oriented county notes (Lingard 2016). But PISA establishes effective associations with other actors by diverse means, through a process that along the current decade has become more intense and sophisticated. One is the widening of the multiple public and private actors that the OECD puts in interaction, in order to construct meaning, articulate and diffuse new rules based on the use of PISA data—what has already been labeled as a “social matrix of interrelated governing actors” by Sotiria Grek (2010: 401) in the context of her analysis about the associations between the OECD and the European Commission. Another modality of creating these social matrixes are the “meditative” activities—borrowing this analytical category from Jacobsson (2006)—developed outside the PISA word, like the publication and exchange activities on teachers and teaching developed since 2011 in the context of the International Summits on the Teaching Profession (Robertson 2012), co-organized with Education International and national authorities. A different mean is the increase in surveys on literacy that has been enlarging the subjects and the objects of the survey: Programme for the International Assessment of Adult Competencies (PIACC) (see, e.g., Grek 2010, 2014); Assessment of Higher Education Learning Outcomes—AHELO (see, e.g., Shahjahan and Torres 2013; Shahjahan et al. 2015); PISA for Development (see, e.g., Addey 2016); PISA for schools (see, e.g., Rutkowski 2015, Lewis et al. 2016; Lewis 2017a, b).³

Finally, a third mean is the widening of knowledge-related materials generated and disseminated to diverse audiences. In 2008, the diversity of the materials generated within PISA was already remarkable (Carvalho and Costa 2009): diverse sorts of reports (main, thematic, extensive, national, and technical); databases; documents with assessment basics, written for teachers, parents, and pupils. This variety of informational products were already explicitly generated to target populations, with diverse interests and skills. Moreover, opening up to a multiplicity of possible uses, whether in order to reproduce, to re-contextualize the data/information, or even in order to produce knowledge from it. Presently, this picture presents a few important changes: the objects become more sophisticatedly elaborated and their variety is amplified, thus fostering the intensification of possible uses. Three types of materials illustrate this move: materials exhorting policy emulation and policy

³For a recent review on the trajectory of OECD’s surveys, see Morgan and Volante (2016).

learning; materials that provide their readers “short-cuts to knowledge”; and digital platforms supporting “do it your-self” (DIY) practices.

One of the new deliverables is the “in-depth” report suggestively entitled *Strong Performers and Successful Reformers* prepared by “task forces” of experts and members of national education bodies, involving meetings with national “stakeholders.” Reforms based on local adaptation of best practices are the expected outcome from these documents. A different type of deliverable for a quick access is developed since 2011, like the monthly briefs *PISA in focus* that display four to five pages of explicitly policy-oriented texts on a specific PISA theme, from student performances and attitudes toward school and learning to family background, from classroom environment to education policy. The DIY products, like the *Interactive Data Selection* and the *Multi-dimensional data request*, support different types of relationships between PISA and the users, by allowing these to select and compare data of school- and student-level variables. Connected to the *Education GPS*, these products allow the users to access data provided by PISA, TALIS, and Education at a Glance, as well as to prepare country reports, using texts and sophisticated charts provided by the tool, and to compare the countries’ performances. Set to activate a quasi-autonomous relation with PISA data, these technologies support the OECD (new) intervention as a “center of visualization” (Williamson 2016).⁴

In sum, the making of PISA ecology rests on the condition of being consumed, shared, or learned by its audiences, as credible and manageable.

14.3 New Challenges for Researching the Trajectories of a Knowledge-Policy Instrument

Along the text, drawing on my previous works on PISA, I have discussed the two-fold influence that PISA exerts as knowledge-policy tool, as well as the practices that sustain its regulatory action (in terms of ideas and within the realm of organized action). From what is written in the previous pages, it is possible to take PISA as an analyzer of the use of expert knowledge in regulatory processes. My present interest in PISA follows this direction, by focusing the dynamics of appropriation inherent to the trajectory of any policy instrument (Lascoumes & Simard, 2011). This opens the possibility of observing new fabrications of PISA and new fabrications made with—or based on—PISA. This means to observe and analyze what is occurring when its objects (texts, data, databases) circulate through national, regional, and local public action settings and are used by different social groups, according to

⁴The newest PISA product is the “pisa4u”—The Online Programme for School Improvement—oriented toward teachers, administrators, policy-makers, and parents. It intends to provide their users with “an environment for ideation and co-creation; this programme fills the need of schools and educators to connect and collaborate across silos and regions.” <http://www.pnewsire.com/news-releases/pisa4u%2D%2D-the-online-programme-for-school-improvement-launched-by-oecd-and-candena-604974616.html>.

their beliefs, interests, and knowledge repertoires, and under specific sociocultural circumstances.

In fact, previous studies on PISA reception and effects show that all the knowledge in circulation is transformable and transformed by the context and the actors who receive and eventually diffuse it to new audiences; but we cannot escape to question if this knowledge does not transform the very actors and contexts that transform it. It is, in fact, a relationship that needs to be further studied by the research that has been devoted to the PISA reception and effects in the governing of education. Two issues emerge as central: (1) the role of actors that, at a national scale, operate between PISA objects and policy actors; (2) the appropriation of PISA-labeled objects at diverse educational contexts—policy, state bureaucracy, schools.

1. One of the most open issues in the literature on PISA effects concerns the understanding of the varied uses of PISA by its multiple audiences. Several factors have been put forward to that purpose: structural, socioeconomic, or cultural aspects; national policy dynamics; interventions of the actors that transform the results into pressures on the educational agenda (see Carvalho and Costa 2016). In this last factor stands out the agency from those who intermediate between PISA knowledge and policy as “brokers” or as “entrepreneurs” (Van Zanten 2009), and the resonance of the media interpretations. In the Portuguese context, two aspects deserve special attention (Carvalho et al. 2017; Viseu and Carvalho 2018): the recent emergence of “intermediary actors” (Nay and Smith 2002) who intend to transform the PISA results into knowledge for national policy, after a long period of non-existence of this intention (and of their respective performers); the continued increase in coverage given to PISA by the national media, which is even becoming more specialized in a few newspapers. The first aspect concerns the transformation of PISA’s results into knowledge for national policies by national collective actors that activate diverse mechanisms of “translation” (Callon 1986) and generate compositions of technical and political arguments—*argumentaires* (Pons 2012)—to explain PISA results to the politicians and largely to “the public.” The second aspect concerns the identification of the ways in which the press mobilizes PISA and portrays the Portuguese performance and, mostly, how do journalists access PISA expert knowledge (what processes and which actors are involved in their behind-the-scenes work) and what are the rationales behind PISA’s retranslation to the public (see Lingard 2016).⁵
2. Studies on the reception of PISA in Portugal conclude that PISA/OECD’s credibility has been used to certify interventions in policy processes, and also that the emergence of an improvement narrative, aligned with OECD visions, overrides the effects on the rationalization of decision-making in policy processes (Afonso

⁵On this second aspect, I follow a proposal from my colleague Benedita Melo (IE-ULisboa), made in the course of the collective preparation of a new research project on ‘PISA and knowledge mobilization’ in public policies in Portugal.

and Costa 2009; Carvalho et al. 2017). These readings go along with other analyses that show knowledge-based learning is barely present when policy-makers turn to PISA data to argue about their systems (Pons 2012) or that the use of PISA involves more often externalization than learning (Lingard 2016). From our study, we also consider the existence of a gradation on how PISA has been actually used by policy-makers, between a source that is consulted and a source that is personally studied; but very little is known about how and what politicians actually learned from such use. Thus, the mechanism of “policy learning” (Freeman 2007) remains an open question. It is especially important to contrast (a) the mechanisms of knowledge declared by national policy actors and (b) the use of knowledge by politicians as imagined by the OECD, and the “systems of reason” (Popkewitz 2000b) in play in the fabrication of the policy-learner. Finally, it is important to focus on the use of PISA evaluative and statistical knowledge by the educational administration high-level officials and technicians, but also principals and teachers involved in the management, implementation, and administering of the tests in Portugal. This inquiry is needed in order to know how (and if) the appropriation of PISAs’ assessment knowledge happens within the educational system, specifically in the PISA National Project Management body and in the schools voluntarily involved in each PISA cycle; as well as how (and if) such appropriations relate to changes in their evaluative frameworks, scripts, and procedures.

In sum, all these lines of inquiry focus on the ideas, processes, and actors that link the expert knowledge disseminated by PISA to the contexts of policy-making, administration, school organization, and public debate on education. The accomplishment of these studies may contribute to a deeper understanding on how is PISA naturalized, and how it shapes and, simultaneously, is shaped through such multiple uses.

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Chapter 15

Subject in Education for the Twenty-First Century: A Discursive Analysis of the Impacts of PISA in Brazil



Márcia Aparecida Amador Mascia

15.1 Introduction

In Brazil, we have been experiencing a series of discussions related to the performance of basic school students in the external assessments, in areas of Portuguese Language, Mathematics, and Sciences. In a broad sense, the statistics that are publicized by the different systems of external assessments (Prova Brasil, Saeb, Enem, Enade,¹ PISA, among others) evidence the low performance and skills of the students in all school subjects in different grade levels. To every new result that is publicized, new steps are adopted by the public education systems: the establishment and increase of extra classes; the production and distribution of pedagogical material; the investment in teacher education; and the bonus to schools and teachers whose students have achieved high rankings in external assessments—like São Paulo and Minas Gerais states—among others.

As teacher educator in a Graduate Program in Education, I have been receiving distressed teachers, feeling “guilty” for the failure of their students and trying to find new forms of overcoming the “problem.” They look for palliative practices in the search of: (1) school materials that can offer better preparation for students in relation to the external assessments, (2) materials that can give subvention for the pedagogical work, and (3) training courses that can give them “recipes” of improving

¹ Prova Brasil and Saeb are diagnostics evaluations, in large scale, and they have the aim of testing the quality of the teaching in Brazil. Enem is a test designed to evaluate the skills and performances of students that are finishing high school. ENADE evaluates the performance of the undergraduate students in relation to the content of each area.

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275

the performance of their students in external tests. The assessments themselves are not problematized; their logic, their rationality, or even, the content of the tests is not questioned, neither are the conflicts between what is taught and what is evaluated in the tests. The relevance of these external tests when compared to the tests and auto-evaluations of the students is not questioned, neither is the kind of teacher and student that are idealized and, we can also say, ultimately, “fabricated” a posteriori by the tests.

Taking into account this “scenario,” this chapter has the aim of problematizing the contemporary discourses of external assessments in education from a postcritical perspective. Limiting our scope of research to the discourse of PISA, we propose to answer the following research questions: (a) What are the effects of meaning, regarding the constitution of subjectivity in education in Brazil which emerge from the discourse of external assessment—PISA? (b) To what extent the discourses of contemporary external assessment—PISA—establish “new” regime of truth in regarding to the status of the subject in education in Brazil? (c) How do such discourses act as new forms of governmentality in education, while discursive practices of tension between success/failure?

The corpus consists of the discourses that cross the documents of PISA—Programme for International Student Assessment—disposed on the website of the Organization for Economic Cooperation and Development (OECD) and on the website of the Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (INEP) in Brazil.

My intention is to pursue the foundations of some of the naturalized concepts in these assessments, from which I hypothesize that the discourse of equality is at the basis of our current education, but at the same time that it proposes equality, the educational policies that are behind naturalize the dichotomies of inclusion/exclusion, success/failure, uniformity/diversity, right/wrong, developed/underdeveloped, and productive/nonproductive. This investigation does not discuss what works/does not work in education in relation to PISA discourse, but how the discourses involving external assessments create a system of reasoning of success/failure in education in Brazil and worldwide.

This chapter has two sections: the first section presents an account of the methodological framework, that is, the postcritical perspective in which we develop the main concepts of Discourse Analysis and the conditions of production, the macro-discourse. The second section is devoted to the discursive analysis, followed by the conclusions.

15.2 Methodology and Macro-Discourse

In this section, we explain the methodological framework, the Discourse Analysis, and bring the macro-discourse, that is, the geographical, social, and historical context of the research, Brazil, and provide a brief description of PISA.

Discourse analysis methodology requires the examination of the geographical–social–historical context within which the discourse is constructed followed by a microanalysis of the texts. The description of the geographical–social–historical context, also understood as “conditions of production,” aims putting the social representations of the *corpus*, PISA discourse, in this case, into focus, as well as the place occupied by the subjects in this discourse. After contextualizing the production of a certain discourse, the analyst concentrates on the properties of the discourse. Discourse is characterized as possessing constitutive heterogeneity, which implies that doing discourse analysis is fundamentally trying to find the interdiscourses that are at the interior of a certain discourse. We understand discourse as discursive practices in Foucault’s terms, as follows:

(...) a body of anonymous, historical rules, always determined in the time and space that have defined a given period, and for a given social, economic, or linguistic area, the conditions of operation of the enunciative function. (Foucault 1972: 117)

Thus, discursive practices are related to rules that establish or authorize our discourses in relation to the thematic choices, to the acceptable objects, and to the acceptable enunciative modalities by the subject. That is, discourse is not the linguistic manifestation, but the conditions upon which some linguistic manifestations are possible while others are not. We cannot say whatever we want, the way we want and for whom we want. We are “obliged” (even though we do not know it, as these rules that oblige us are anonymous, erased, camouflaged and so camouflaged that we believe that we are autonomous, that we choose our sayings) to speak in a certain way, to certain subjects, and using certain authorized content. This is the concept of discourse within which we intend to work.

Let us add another concept to our repertoire, the subject, which can be understood as an effect of discourse, as a position occupied by the “individuals” in the discourse. The viewing of the subject as “effect of discourse” comes from Pêcheux and Fuchs (1975) when they talk about the two illusions (or forgetfulness) in which the subject and meaning are inscribed: the illusion of the origin of discourse and the illusion of only one meaning. For the first, we forget that our words are not original; when we talk, we inscribe our discourse within certain rules; and for the second, we forget that what we are saying will be interpreted, so it can be interpreted in different ways, that is, it does not have only one meaning. These two illusions affect the discourse. From this perspective, the subject can be considered decentered, historical, and affected by history; incapable of “consciously” transform the world, he/she can provoke changes, but does not have control over the meanings of these changes.

For its side, any discourse takes part in some “discursive formations,” and it is inside these discursive formations that the meanings are defined as acceptable or not. Our meanings are not conceived by ourselves, as we think or desire. When we talk, we are not only “communicating” but also saying which discursive formations we belong to.

Ultimately, for Foucault and for us, in this research, discourse is taken as a practice, a discursive practice, and subject is taken as effect in these practices. As a

result, any social practice is a discourse, understood as a discourse in a broad sense. The discourse of PISA will be analyzed within these two concepts: of discourse and of subject.

The macro-discourse, or the conditions of production of our *corpus*, PISA discourse, involves the geographical, social, and historical moment related to the years that precede the implementation of the external assessments, like PISA, both in the world and Brazil.

In geographical terms, Brazil is a huge country, with 26 states, and it is the largest country in [South America](#) and the world's fifth largest country, both by [geographical area](#) and [by population](#) with over 192 million people. It is the only [Portuguese-speaking country](#) in the [Americas](#) and the largest [lusophone](#) country in the world. It is divided into five regions: south, southeast, north, northeast, and central west. The differences that characterize these regions are not only based on the geography. Besides being geographically different, we can point social cultural differences, especially in relation to the distribution of the wealth. While people in the south and southeast are richer, people in the north, northeast, and central west are not. But even the richer regions present visibly two poles: extremely rich people and miserable ones, living in the same cities, especially in the metropolis, like São Paulo and Rio de Janeiro. In spite of living in the same city, they live in two opposite ways: in luxury and in misery, oppositions that will be seen in the results of PISA, for example.

In the political sphere, Brazil, at the end of the twentieth century, undertook a process of political opening, with the fall of the military dictatorship leading to the proliferation of political parties, particularly the left-socialist party, PT (Partido dos Trabalhadores, Worker's Party). At the same time, as soon as the civilians rose to power, new alliances were established in order to silence the dictatorship crimes. The crisis in education due to the social inequalities and poor distribution of income, installed during the dictatorship, would not be changed during the reigns of the so-called new republican governors, in spite of the process of the democratization of education promoted by Minister Jarbas Passarinho at the end of the twentieth century. The state governors did start a process of opening new schools, but as soon as the quantity of education was increased, the quality decreased. New schools were built, but the formation of teachers was forgotten.

Within the Worker's party at the power, Luíz Inácio Lula da Silva and Dilma Rousseff, we had an improvement in public education, both of the basic (fundamental and high school) and of the university, during the 13 years from 2003 to 2016, when Dilma suffered an impeachment. In spite of the investment in education during this period, the quality in education is still being questioned as we will see in the excerpts analyzed. During most of these years that Brazil is taking part in PISA, we were under the Worker's Party management.

In global terms, during the last decades of the twentieth century, there was an increasing of scientific and technological (and even cultural) domination by the industrialized countries, mainly the United States. This domination led to the current process of globalization which resulted in a cultural and linguistic domination

by the first world countries in relation to the emergent ones, like Brazil.² The “ghost” of an excluded country was installed that would affect everyone and everything, including education.

In the context described above, PISA has emerged as a worldwide study by the [Organisation for Economic Co-operation and Development](#) (OECD) applied to member and nonmember nations which was first performed in 2000 and then repeated every 3 years. The main goal is providing a worldwide range of information to improve education. But critics, as expressed in the letter to Andreas Schleicher, director of the OECD’s PISA, from academics around the world in 2014, have been denouncing that it has really contributed to an escalation in testing and a dramatically increased reliance on quantitative measures. It has begun to deeply influence educational practices in many countries, making an overwhelming changing in the education systems in the hopes of improving their rankings. Another critic is related to the narrow range of measurable aspects of education, that is, biased in favor of the economic role of schools and the preparation of young men and women for gainful employment, on the other hand, disregarding the less measurable or immeasurable educational objectives, like physical, moral, civic, and artistic development, that contribute to prepare students for participation in democratic self-government, moral action, and a life of personal development, growth, and well-being. This way, the letter points, PISA acts in a way to subvert our image of what education is and ought to be about, playing the role of a global arbiter of the means and ends of education around the world.

Taking into account the description of the macro-discourse above, we present the microanalysis. The microanalysis consists of identifying the effects of meanings and pointing how they appear in the linguistic materiality. But the meanings depend on the conditions of production, that is, the geographical–social–historical moment in which they are constructed, as specified in this part.

The analysis of PISA–Brazil discourse enables us to understand the reason upon which some images are constructed and naturalized. According to Chakrabarty, the first world, Europe, “works as a silent referent in historical knowledge” (1992 p. 337), and as great narratives are taken as models, when the emergent countries’ histories are written, they are translated in terms of lack, incompleteness, and absence.

The image of incompleteness has been a constant in Brazilian Educational Discourse, especially when applied to public schools, which are always conceived as needing reforms in order to reach the completeness. Curricula reforms are always designed to provide new ideas for teachers and schools that have consistently failed their students.

Next section is dedicated to the discursive analysis.

²For more details, see Pennycook, A. (1994). *The Cultural Politics of English as an International Language*. New York, Longman.

15.3 Analysis: PISA Shaping the Subjects for the Twenty-First Century

My data consist of the discourse displayed on two websites in relation to Brazilian performance on PISA: <http://www.oecd.org/pisa/> and <http://portal.inep.gov.br/pisa/sobre-o-pisa>. The analysis will focus on some excerpts from these websites.

15.4 PISA on the OECD Website

I will start bringing the definition for the Programme for International Student Assessment (PISA) by OECD³:

(PISA) is a triennial international survey which aims to evaluate education systems world-wide by testing the skills and knowledge of 15-year-old students. To date,⁴ students representing more than 70 economies⁵ have participated in the assessment.

Still, according to the website,

around 510,000 students in 65 economies took part in the PISA 2012 assessment of reading, mathematics and science representing about 28 million 15-year-olds globally. Of those economies,⁶ 44 took part in an assessment of creative problem solving and 18 in an assessment of financial literacy. For this year, 2015 assessment, more than 70 economies have signed up to take part in the assessment in 2015 which will focus on science.

I want to call attention to two main discursive materialities that appear here: “economies” instead of using country, people, and “literacy” in relation to the skills that students should show in the school subjects.

These two uses, “economy” and “literacy,” are explained on the website as the following:

PISA is unique because it develops tests which are not directly linked to the school curriculum. The tests are designed to assess to what extent students at the end of compulsory

³The mission of the Organization for Economic Co-operation and Development (OECD) is to promote policies that will improve the economic and social well-being of people around the world. The OECD provides a forum in which governments can work together to share experiences and seek solutions to common problems. We work with governments to understand what drives economic, social, and environmental change. We measure productivity and global flows of trade and investment. We analyze and compare data to predict future trends. We set international standards on a wide range of things, from agriculture and tax to the safety of chemicals. We also look at issues that directly affect everyone’s daily life, like how much people pay in taxes and social security, and how much leisure time they can take. We compare how different countries’ school systems are readying their young people for modern life, and how different countries’ pension systems will look after their citizens in old age. From <http://www.oecd.org/about/>. Accessed: 03-27-2015.

⁴From <http://www.oecd.org/pisa/>. Accessed: 03-27-2015.

⁵Bold type by the author.

⁶Bold type by the author.

education can apply their knowledge to **real-life situations**⁷ and be equipped for **full participation in society**. The information collected through background questionnaires also provides context which can help analysts interpret the results.

Even though it apparently seems very interesting in a supposedly homogeneous and equal society, we do not live in this imaginary world. The peoples from different countries, different languages, different cultures, different religions, different ethnicities, different colors, different sexualities participate differently in real-life situations and different peoples need different knowledge for full participation in their specific society. These differences are not taken into account by the assessment. Actually, it is considered only the knowledge that is important for those countries or, in other words, those economies that develop and apply the assessment. And, unfortunately, the results are compared using the parameters of wealthy economies and the useful knowledge for them.

The idea and ideal of equality is embedded in the liberal thought which underlies the enlightenment claim of equality of men. Education, which is on the basis of enlightenment, is believed to be the motor to guarantee equality in society.

But, according to Mehta (1997), it has actually been exclusionary, as “Liberal theoretical claims typically tend to be transhistorical, transcultural, and most certainly transracial” (op., cit., p. 63), which means that, “behind the capacities ascribed to all human beings there exists a thicker set of social credentials that constitute the real bases of political inclusion” (op., cit., p. 61), that is, “power relations.” Some nations and some cultures, which detect power, are taken as parameters and PISA tests are designed under these parameters to evaluate the whole universe, indicating if the students are or are not prepared to apply their knowledge to **real-life situations** and to have **full participation in society**.

In its turn, the idea of literacy to think of school subjects is very fruitful, especially if we consider that literacy is related to what students can do, in real life, with what they have learned in schools, but I question the idea of one math literacy, one science literacy, one financial literacy, or one reading literacy. We should think in literacies, or multiliteracies, in a society that is multiple. For example, for people who live in rural areas, who have their own piece of land, and who make their living from plantation, math or science or even reading knowledge is important, but for them, it probably has some specificities in relation to the environment where they live. In relation to maths in education, there has recently emerged a field of study which is called “ethnomathematics.” According to the International Study Group on Ethnomathematics (ISGEm) website:

The term was coined by Ubiratan D’Ambrosio⁸ to describe the mathematical practices of identifiable cultural groups. It is sometimes used specifically for small-scale indigenous societies, but in its broadest sense the “ethno” prefix can refer to any group—national societies, labor communities, religious traditions, professional classes, and so on. Mathematical practices include symbolic systems, spatial designs, practical construction techniques, calculation methods, measurement in time and space, specific ways of reasoning and inferring,

⁷ Bold type by the author.

⁸ Ubiratan D’Ambrosio is a Brazilian professor and researcher.

and other cognitive and material activities which can be translated to formal mathematical representation.⁹

Math literacy can be very different if we take into account the cultural diversity of mathematical practices, so do real-life situations. The notion of ethnomathematics, which was coined by a Brazilian, problematizes the idea of a universal knowledge in mathematics that can be measured by a universal test, like PISA. It incites us to think in a broader way our understanding of knowledge applied to education and evaluation in education.

In the link, “What the assessment involves,” we see the following:

*Since the year 2000, every three years, fifteen-year-old students from randomly selected schools worldwide take tests in the key subjects: reading, mathematics and science, with a focus on one subject in each year of assessment. In 2012, some economies also participated in the optional assessments of **Problem Solving** and **Financial Literacy**. Students take a test that lasts 2 hours. **The tests** are a mixture of open-ended and multiple-choice questions that are organized in groups **based on a passage setting out a real-life situation**.¹⁰ A total of about 390 minutes of test items are covered. Students take different combinations of different tests.*

I want to call attention to the bold type phrase, “Tests based on a passage setting out a real-life situation.” Real-life situation from and for whom? Again, we have the idea (and the ideal) of universality in education, as the discourse erases the subjects that conceive the tests and to whom they are addressed. We can say that these tests do not only measure if the students know how to deal in “real-life situation,” but they also produce realities and dictate how education should be organized in a way to prepare students to deal with the so-called real-life situations. They work in a way of “making up people” (Hacking 1986), or better “making up” how schools should function in a way of preparing students for certain situation and not others, disregarding if they are really “real” for them. This way, some situations are considered while others are not, and this contributes, at last instance, for including some people and excluding others. The tests are prepared and applied to reveal exactly how schools erase the specificities of differences around the world and prepare students to confront each other in a competitive market. Education has visibly transformed into competition, which dictates what is a good school, a good teacher, a good student, a good educational policy, a good school curriculum, a good country, or better, a good economy, and so on. Schools, in this rationality, should prepare students for the labor market and the ones that do good in the tests are in, while the others are out, which evidence the tension between inclusion and exclusion in education. This is what Foucault calls as “regime of truth,” as “a general politics of truth,” and in Foucault’s sense, there is a circular relation between truth and power:

Each society has its regime of truth, its general politics of truth—that is—the types of discourse it accepts and makes function as true.

⁹From ISGEM International Study Group on Ethnomathematics. <http://isgem.rpi.edu/> Accessed: 05-19-2015.

¹⁰Bold types made by the author.

Truth is linked in circular relation with systems of power that produce and sustain it, and to effects of power which induce and which extend it—a regime of truth (Foucault 2000: 131–132)

From such ground, the concept of “regime of truth” can be considered inside the idea of “circularity,” proposed by Foucault, between power and knowledge. We can conceive PISA, and the subjects that PISA fabricates, as regime of truth because truth is produced, sustained, valorized, and regulated by a series of mechanisms, techniques, and procedures that work inside institutions, in ordinary life, that at the same time that produces knowledge, it reinforces power. PISA can also be considered as “a regime of truth” because it defines specific mechanisms which produce discourses that function as truth in contemporary time, dictating beliefs, values, and morality. Contemporary societies have centered the discussion of truth on scientific discourse, especially of equality, that is, the ways of including/excluding people in the labor market, which commands not only the production but also the distribution of the knowledge produced. That is why Foucault calls it as circularity, they produce and feed each other.

According to Hacking (1990), one of the mechanisms of circulation of regimes of truth is related to the emergence of statistics which gives stability to the world, making decision more transparent. That is what happens with PISA, as we see below:

In addition, given PISA is an ongoing triennial survey, countries and economies participating in successive surveys can compare their students’ performance over time and assess the impact of education policy decisions.

One of the aims of PISA is of shaping the political educational decisions around the world in favor of students showing themselves prepared for the tests. Of course, countries are changing their policies and schools are shaping curriculum to this and other assessment tests, without questioning the tests, or what is behind this worldwide model of constructing education, and subjectivities in education, based on surveys only.

PISA constructs subjectivities in education, as it is understood by Popkewitz:

PISA globally positions the child and nation through a style of thought that differentiates and divides through creating categories of equivalence among countries. The categories of equivalence (or sameness) function as an identity to represent difference. What now needs attention is how numbers do not act alone but act as they are inscribed in a grid of practices that give intelligibility to kinds of people. The “facts” enlisted through PISA’s measurements of practical knowledge are not merely descriptive of something “practical.” They are assembled historically in a manner that creates a cultural space that shapes and fashions modes of living. (Popkewitz 2011: 36)

This way, we can consider that PISA is not only about grids and numbers but also about subjects in education and about the future inhabitants of the world that are being forged today.

To prepare students for competition, it was prepared “PISA-based test for schools”:

As interest in PISA has grown, school and **local educators have been wanting to know how their individual schools compare with students and schools in education systems**

worldwide. To address this need, the OECD has developed the PISA-based test for schools. It is currently available in the United States and the OECD is in discussions with governments to make the test available in other countries such as England and Spain.

The website persuades local educators to compare their results with world results. Exactly what I have been discussing, the local knowledge is erased in favor of a worldwide knowledge, that is nothing more than the knowledge based on an ideal situation of schooling, or in Popkewitz's (2011: 39) words, based on "The grid that gives intelligibility to these 'facts' [that] serve as 'a map' for structuring what is to constitute 'experience' and thinking about what is practical and useful." Comparisons through numerical systems erase that a certain kind of knowledge and also "child produced in the alchemy of school is assumed in the assessments" (Popkewitz 2011: 39).

We can also see in the following what is PISA for:

PISA offers **insights for education policy and practice**, and helps monitor trends in students' acquisition of knowledge and skills across countries and in different demographic subgroups within each country. The findings allow policy makers **around the world** to gauge the knowledge and skills of students in their own countries in comparison with those in other countries, **set policy targets** against measurable goals achieved by other education systems, and learn from policies and practices applied elsewhere.¹¹

It is a worldwide mechanism of control, dictating policy targets in education, based on tests applied to students and on the quantitative results of these tests. It is implied in this excerpt that what is a succeeded education model for a country should be "imported" and applied to the ones whose education is not being well succeeded. But we question again the parameters to consider what is success and what is not based on "findings" revealed by numbers. According to Popkewitz (2011 31), "the politics of PISA order what children should know and how that knowing is made possible," which culminates, in our view, in setting new policies in local schools dictated by the global findings of the test, that is, the local is being shaped by the global.

Let us see what the Brazilian website presents.

15.5 PISA on the Brazilian Website

Brazilian website starts with the following definition:

The Programme for International Student Assessment (PISA) is an initiative of compared evaluation, applied to students within 15 years old, age at which it is presupposed the conclusion of mandatory basic schooling in most countries. The programme is developed and coordinated by the OCDE (Organization for Economic Co-operation and Development). In

¹¹ From "Programme for International Student (PISA) Results from PISA 2012," p. 10. <http://www.oecd.org/pisa/keyfindings/pisa-2012-results.htm>. Accessed: 05-01-2015.

each participant country there is a national coordination. In Brazil, PISA is coordinated by the Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (Inep).¹²

Contrasting with the OECD website, there is not much reference to “countries” as “economies.” The excerpt above, which introduces PISA, brings the word “country” twice. Only once the website uses the word “economy,” as following:

Participant countries

Nowadays, the 34 OECD countries members and many invited countries participate on Pisa. The results of Pisa 2012 congregated 65 countries, however this total congregate some **economies** that can't be considered countries, as Hong Kong, Macau, Shanghai and Taiwan.¹³

But, even though using “economy,” it is being used as an alternative for “country.” This option for “countries” instead of “economies” has the effect of meaning of attenuating the idea of economy and competition that is behind the assessment. The discourse of Brazilian website brings the image that PISA is only related to improvement in education.

I consider that this is because the labor market discourse was not explicit in political issues in Brazil, as the party that was in power at the time when the excerpt was written was the Worker Party and it has a socialist tendency, but Labor Market appears in a camouflaged way. The political situation in Brazil can be best summarized by Fernando Haddad, the Ministry of Education, from 2005 to 2012, when he made an evaluation of PISA 2009. For him,

In Brazil more than 5% of the GDP is invested in public education, while before less than 4% was invested. We set a goal in the national education plan that by 2020, the average salary for a teacher will have to be equivalent to the average salary of other professionals with university level degrees in the country.

This is what the government aims in education, in Brazil, and PISA is among the instruments that supposedly could contribute to improve education, bringing an international parameter. As we can see, in this discourse of progress/improvement, education is the topic, not “economy.” It is been a motto in Brazil for a long time; every time, when we talk about improvement in education, we talk about teacher

¹² My translation from the original: *O Programme for International Student Assessment (Pisa)—Programa Internacional de Avaliação de Estudantes—é uma iniciativa de avaliação comparada, aplicada a estudantes na faixa dos 15 anos, idade em que se pressupõe o término da escolaridade básica obrigatória na maioria dos países. O programa é desenvolvido e coordenado pela Organização para Cooperação e Desenvolvimento Econômico (OCDE). Em cada país participante há uma coordenação nacional. No Brasil, o Pisa é coordenado pelo Instituto Nacional de Estudos e Pesquisas Educacionais Anísio Teixeira (Inep). From <http://portal.inep.gov.br/pisa/sobre-o-pisa>. Accessed: 03-27-2015.*

¹³ My translation from the original: *Países participantes Atualmente, participam do Pisa os 34 países membros da OCDE e vários países convidados. Os resultados do Pisa 2012 congregaram 65 países, entretanto este total congrega algumas economias que não podem ser consideradas países, como Hong Kong, Macao, Shangai e Taiwan. From <http://portal.inep.gov.br/pisa/sobre-o-pisa>. Accessed: 03-27-2015.*

income, as it is lower if compared to other careers. In relation to PISA, the Ministry of Education continues describing the “dramatic Education situation,” as follows:

In the year 2000 we were in a particularly dramatic situation in Brazil. It was the first year of the PISA program, and Brazil did very badly. Because not only had the quality of education fallen dramatically during the previous decade, there was a problem of students dropping out and failing. 2000 was a landmark in Brazilian history because it was the year when we desperately needed to change the situation.¹⁴

In his discourse, the first PISA test is taken as a landmark for changing in education in Brazil, as if it was necessary an external evaluation to measure our problems. Actually, what PISA does is giving worldwide visibility to our problems, and as part of government, he needs to give an answer. This is very familiar in political discourse of reforms in education in Brazil, as it has already been discussed by Mascia (2009), when analyzing the discourse of curricula reforms in Brazil in the 1980s and 1990s. When the Ministry or the Secretary of Education is instigated to take a position about an issue, he/she promptly comes with an assertive answer of reforms. If we compare the above discourse with the one analyzed about the curricula reforms in the 1980s and 1990s, the only difference is the motivation to an answer, in this case, PISA results. I am arguing that what PISA does is only giving international visibility to the problems we already know, and it does not give a solution. Otherwise, it can mask them, as we will see ahead.

Brazil’s struggle for the recovering of the quality in education lies back to 1970s, when we started having a process of political opening, with the falling of the dictatorship and the appearance of many political parties. Unfortunately, the democratization of education meant loss of quality, that is, an increase in the number of schools and a decrease in the quality. This search for quality has meant, along these decades, many discussions: teacher’s salary; infrastructure in schools, teacher’s education, curricula reforms, and more recently, the bad results in external evaluations, like PISA. The education seems always to be in crisis and every new government or party has a word of salvation in education, as in the above discourse in which we see again the discussion of teacher’s salary. It is important to call attention that the political party that was in power at the time of this speech is the Worker Party, and the salary of the workers is always on the agenda.

Another problematization in relation to assessment tests in large scale, like PISA, is the naturalization of differences, not only among countries but also inside the countries, especially those with overwhelming differences like Brazil. Let us take the following excerpts from the booklet called “Country Note—Results from PISA 2012—Brazil key findings,” in the item “Resource allocation to advantaged and disadvantaged schools”¹⁵:

Brazil must find ways to support socio-economically disadvantaged schools more strongly in order to establish a level playing field for all students.

¹⁴From <http://www.oecd.org/pisa/pisaproducts/brazil>.

¹⁵Both found on OECD and INEP websites.

PISA results show a positive relation between the resources invested in education and performance, but only up to a certain point. PISA also shows that at all levels of expenditure, higher-performing countries tend to distribute educational resources more equitably between socio-economically advantaged and disadvantaged schools.

- *In Brazil, the schools serving more advantaged students, which include many private schools, have access to better educational resources, better physical infrastructure, and report fewer problems of attracting and retaining qualified teachers.*
- *In Brazil, about 13% of 15-year-old students go to a private, independent school. On average, private schools show better performance in PISA. While their students overwhelmingly come from advantaged families, the performance advantage is apparent even after accounting for socio-economic status. For the more affluent families, private schools—which provide access to better educational resources, better physical infrastructure, and have lower student—teacher ratios—are associated with better learning outcomes.*

It is clear, in the above excerpt, that best performers in PISA, in Brazil, are the ones that are socioeconomically advantaged, that attend, mainly, private schools with better infrastructure. This makes us raise another problematization to our discussion, the one related to bonus in education. Teachers and staff from high-scored school receive bonus and teachers and staff from average or low-scored school do not, which means that, in a certain way, they are punished. We consider that the absence of bonus can be understood as a certain kind of sanction.

In relation to the bonus, we can see it explicit on the Ministry of Education's words:

Also, we created a mechanism **to reward**¹⁶ the schools that achieve their goals, so that schools that meet their objectives automatically receive **bonus funding** from the federal government. So the schools could assume greater autonomy.¹⁷

Even though the Ministry asserts in another part of the interview that this mechanism will not penalize or punish the schools and subjects involved—students, teachers, and staff—it is a mechanism of exclusion, and it excludes at the time that some schools are rewarded and others are not. But the main effect is that it is a perverse mechanism, as we consider that it camouflages the “real” problems in education in Brazil, subverting the situation, rewarding, and giving more conditions to the ones that already have them. This rewarding is based on the idea (or ideal) of homogeneity in education, that erases the historical conditions of the knowledge and of the subjects involved, as we have already discussed. This kind of evaluation takes as granted that all schools are equal, so they can compete in the same level, based on numbers and tables that show the ranking, which works in a way of inclusion and exclusion at the same time, using dichotomic categories: right versus wrong; developed versus underdeveloped (or in development); and productivity versus nonproductivity; success versus failure.

In this way, the external evaluations only rank the schools, the educational systems and countries, or better, the economies, cognitively, by the results of the tests, disregarding the context, the social conditions, and the real lives of the subjects

¹⁶ Bold types made by the author.

¹⁷ From <http://www.oecd.org/pisa/pisaproducts/brazil>.

involved in education, teacher, and student. Even though PISA claims that they know the social conditions of each country, when the results are showed in statistics, we only see numbers, not the social conditions of these numbers. It is a mechanism of control inside the apparatus of governmentality, as these tests are applied by external agencies that consider the subjects in education and the knowledge as universal and not historical constructed.

Foucault understands “governmentality” as:

1. The ensemble formed by the institutions, procedures, analyses and reflections, the calculations and tactics that allow the exercise of this very specific albeit complex form of power, which has as its target population, as its principal form of knowledge political economy, and as its essential technical means apparatuses of security.
2. The tendency which, over a long period and throughout the West, has steadily led towards the pre-eminence over all other forms (sovereignty, discipline, etc.) of this type of power which may be termed government, resulting, on the one hand, in formation of a whole series of specific governmental apparatuses, and, on the other, in the development of a whole complex of *savoirs* (Foucault 1991: 102–103).

PISA can be considered as an “apparatus of security” (Foucault 1991: 48–49), which operates very well on the condition of freedom, as Foucault postulated. Countries are free to choose to take part in PISA, but those which does provide its people a feeling of well-being in economy, politics, and education. On the second part of the definition, governmentality refers to the well-known Foucault’s concept of power–knowledge relations, that is, to the Western movement in politics toward a complex bureaucratic society which operates new forms of discipline and that culminates in new knowledge, “*savoirs*,” which, in its turn, generates sovereignty and discipline, that is, power–knowledge relations.

15.6 Final Remarks

From this analysis, we tried to bring into light some meanings that are behind the PISA discourse and that contribute to create new rationalities in education, in a way to fabricate the subjects necessary for the new *status quo* in education and society, especially related to Brazilian context. The analysis points education as being the main locus to transform individuals into moral subjects that current society needs, and this includes the labor market. If education means “docilization” (Foucault 1977b) in a way to prepare body and mind for the society, this is exactly what PISA does; it fabricates the subjects for the technological society in which we live in, that is, the global citizen.

We agree with Popkewitz (2011: 43) that PISA collaborates for the “double gestures of its pedagogical principles: the hope of the cosmopolitan society that circulates in the notion of the Knowledge Society and fears of those qualities and characteristics of the child that threatens its present and/or future actualization.” PISA is an answer in our global society to include every single child, every single

country in the welfare, but at the same time that includes, it excludes as the results present children and nations hierarchically, by ordering people, schools, and nations. We can say that the numerical results naturalize the differences as they are “detached from their immediate context of production” (Hansen 2015: 211). Rankings operate anonymously classifying people and affecting people’s life, for good or for bad. If you are the first ones on the rankings, this is good, but if you are the last ones, this is not. From the Linguistic Turn point of view, language and numbers do not only represent reality, but they also create; categories and measurements can “make up people” (Hacking 1986) in a way of making a person starting feeling (or not) part of a group: the successful or unsuccessful in PISA.

“The numbers of PISA are never merely numbers,” (Popkewitz 2011: 38), they constitute reality, they produce subjects, they produce the “self” and the “others,” they “forge” the notion of equality, as numbers are considered to be transparent. But the idea of equality through the magnitudes of number elides inequalities, but also produces them as seemingly thrusts for inclusion.

From such ground, the external evaluations, in our point of view, instead of contributing to solve the “well-known” problems in education, they end up camouflaging them and, consequently, naturalizing the differences, as the results are visualized in statistical tables publicized by the media, bringing, when the results are publicized, to a “witch hunting” in our country. This finds echo in Bolivar’s study (2011) who undertakes an analysis of PISA from the perspective of the “losers,” focusing on Ibero-American countries in which Brazil takes part. He argues that people in Ibero-American countries feel dissatisfied or discontented with the results, which are not good most of the times, as they are presented with a degree of sensationalism. As I said above, the media show them as disgrace for the nation and start looking for the guilty ones, most of the times, the teachers.

However, the rationality of these evaluations is not questioned: to whom they interest; what they camouflage; what kind of subject they are producing in education and in contemporary society.

But what kind of subjects in education do PISA and the external assessments are fabricating? In our view, the future generation of global citizens is transformed into “scientific objects.” These tests look at the world in a homogenous way, not seeing the differences, and what is worse, not respecting the differences, like differences in knowledge, for example. A 15-year-old student that does not fit in tests like this is out, out of the real-life situations, out of this intended homogenous world, and out of the future global citizen generation. A nation whose education policy does not adapt itself to the external tests is out, out of the future. This is really what these tests are creating: the National and Educational subjects whose truth can be told in numbers in relation to problem-solving skills, in mathematics, literacy, and science, but to continue the world the way it is, not change it. Is this the world that we want? Or better, what is the world that we want? Every nation (not economy), every school, every teacher should ask and try to answer or, at least, pursue, along their lives, the answer for this question, in an ethical way. Evaluations, tests, internal and external are, as everything in education, a matter of ethics, in Foucault’s perspective. The author does not understand ethics as moral philosophy or metaphysical and epistemological investigation, but as a relation of the self to him/herself, called as “modes

of subjectivation” (mode d’assujettissement), that is, “the way in which the individual establishes his relation to the rule and recognizes himself as obliged to put into practice” (Foucault 1990: 27). Ethics is the exercise of an individual on him/herself when faced to moral recommendations for certain conducts, which constitutes him/her own moral being. That is the way I see the subjects implied in education as actors of their own history, as inventors, and as living life as a work of art (Foucault 1984).

We hope that this research can destabilize some aspects imbricated in external evaluations, in the traces of the Foucauldian thought of being as “a firework manufacturer,” that is, “that it can make advance, it can move forward, that it can make fall the walls” (Foucault 1975).¹⁸

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¹⁸ My translation from: Je suis un artificier. (...) Je ne suis pas pour la destruction, mais je suis pour qu’on puisse passer, pour qu’on puisse avancer, pour qu’on puisse faire tomber les murs. From <http://foucault.info/documents/foucault.entretien1975.fr.html>.

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Part V
Assessment and Evaluation

Chapter 16

International Assessments of Student Performance: The Paradoxes of Benchmarks and Empirical Evidence for National Policy



Thomas S. Popkewitz

There is a “commonsense” in the contemporary policy that moves across Europe and North America. That commonsense is the use of benchmarks in welfare state reform to assure the proper articulation of goals that enable their measurement and attainment. The corollary of the benchmark statements is that research identifies the empirical evidence that testifies about what works to secure the desired changes. The putting together of benchmarks and the call for “scientific evident” entails the faith that the correct mixture of research and policy will provide the pathways for effective social and educational improvement.¹

This chapter approaches the ideas of benchmarks and having “empirical evidence” as not merely policy instruments for educational improvement. They embody particular ways of reasoning about social planning and social sciences that have implications for thinking about the organization of society and the kinds of people desired for “progress” (see Popkewitz [in press](#)). These implications of the reasoning of benchmarks and empirical evidence are explored in The Organization for Economic Cooperation and Development’s (OECD) Programme for International Student Assessment (PISA) surveys student skills and knowledge in science,

¹The discussion brings together different research projects on the sociology of scientific knowledge in Lindblad et al. (2018) and Popkewitz (2018, [in press](#)).

This essay brings together different research projects related to a history of present social science/ educational reform-oriented research. This includes a VR research project with Sverker Lindblad and Gun-Britt Wärvik, Gothenburg University, and Daniel Pettersson: (Lindblad, Pettersson & Popkewitz, 2015, Popkewitz, 2018). The University of Gävle and Uppsala, related to the sociology of science (International Comparisons and Re-modelling of Welfare State Education), and “THE IMPRACTICALITY OF PRACTICAL RESEARCH: A HISTORY OF SCIENCES OF CHANGE THAT CONSERVE (University of Michigan Press).

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mathematics, and literacy (<http://www.oecd.org/pisa/aboutpisa/>) and the McKinsey & Company educational reports, which draw on PISA results to “help educational systems and providers to improve outcomes for millions of students globally” (<https://www.mckinsey.com/industries/social-sector/our-insights>).

The chapter examines the PISA and McKinsey report models of educational change as expressing the salvation theme of modernity, expressing a particular kind of utopic thought about human betterment that combines political, social, and economic ideals. Explored are the principles in these assessment’s statements of benchmarks and “empirical evidence”; principles about what matters, how problems are articulated, what notions of methods are reasonable, and what counts as solutions to problems identified. The first section explores historically two elements that underlie the assessment: a universalized conception of society and individuals that connects with systems and cybernetics theories to direct change. The second section focuses on how numbers enacted in PISA require categories and classifications about societies and people that the research is to actualize. The third section considers the notion of change implied, focusing on the social implications of the counting and numbers used in the international assessments. The fourth section argues that there is comparative reasoning about differences that is not only about nations. The measures generate principles about cultural differences among populations. The final section explores how social and cultural principles are erased through the system’s focus on process, “highways” and “pathways” to follow for success.

The chapter is a study of these sciences as a historical phenomenon. The benchmarks are like the Sirens songs that drew the mariners into the rocky shores of the Rhine River. The salvation themes of the assessments are enticements that can be dangerous and require caution when applied in social policy to institutions like schools.

16.1 A Style of Reason: How the Recipe of Benchmarks and “Empirical Evidence” Becomes Possible

I would like to discuss two historical dynamics in the making of the benchmarks and the ideas of “empirical evidence” before moving to the international assessments. One relates to the formation of European and North American social sciences in the long nineteenth century; that is, overlapping historical trajectories that come together and are institutionalized as the social and psychological sciences between the late 1700s and early 1900s. The second are changes that occur in the social sciences after World War II through systems theory and cybernetics.

In what might seem as far removed from international assessments, the finding the commonsense of benchmarks and what counts as “empirical evidence” historically is in the emergence of what was called initially “the moral sciences” or moral philosophy. This may sound odd as benchmarks and empirical evidence are thought of as neutral practices in modern policy and reform-oriented research—descriptive practices that about what works.

Yet these phrases of contemporary sciences are not outside of human history but a particular part of it. If we look to the beginning of the 1800s, attention was directed to the sciences about human conditions and people were called moral sciences. At one level was the European Enlightenment commitment to reason and science in pursuing progress in “The City of Man” (sic). Attention was given by philosophers but also speculatively by social sciences² to the manners by which people live and work together and how to alter those people in light of some general moral qualities that were thought of as universal to all. The concerns were often directed to questions of deviancy and how to correct moral disorder that was associated with urban life and industrialization in Europe and North America. The domestic sciences that emerged later in the nineteenth century, for example, were to teach the poor and working classes hygiene, child-rearing, as well as how to organize a life determined by wage earning. These changes, however, were not only about the poor as they worked into the conduct of the middle classes.

The moral sciences designed to make kinds of people embodied double gestures. (see, e.g., Hacking 1986) There was the gesture of the enlightenment hope that through the applications of reason and rationality would identify pathways to bring liberty, prosperity, and happiness by producing particular kinds of characteristics and qualities to people. But moving with the gestures of hope were fears. The fears were of the dangers and the dangerous populations. The populations embodied threats to the desired futures, talked about in the nineteenth century as barbarians, savages, backward and today spoken about with other notions to differentiate and distinguish cultural and moral differences from some unspoken normalcy, such as the qualities of difference in Western societies among immigrants, ethnic groups, “the at-risk” child, and “fragile” families.

Let me provide two examples of science and the making of kinds of people. One is the turn of the twentieth century psychologies of child studies. One of the central figures of this movement was the American G. Stanley Hall. Hall argued that the science of psychology should replace moral philosophy as a way of interpreting Christian ethics and the arbiter of the moral good in social affairs, particularly in educational processes. Hall wrote that *psychology* should replace “out modeled philosophy that looks to the afterlife,” by making “new contact with life at as many points as possible.” In *Adolescence: Its Psychology and Its Relation to Physiology, Anthropology, Sociology, Sex, Crime, Religion, and Education* (Hall 1904/1928), Hall expressed this relation of science, moral order, and fears of deviancy. The idea of adolescence was not a new idea, but it was applied in a new way to think about the transition between childhood and adulthood through scientific evidence. From the title of Hall’s book, the juxtaposition of science and moral issues and their link to education is evident.

The hope of adolescence was the hope of psychology producing the future cosmopolitan child through a “more laborious method of observation, description, and

²The people associated with the British and American Social Science Associations were not “trained” as such but came from different social fields to look at the effects of poverty in society and organize ways of mitigating its consequences.

induction.” But the gesture of hope of cosmopolitanism was engendered with fears of the poor, immigrants, and racial groups of the new industrial cities, in what Hall called the “*urban hothouse*.” The city was seen as a space of “perversion, . . . and hoodlumism, juvenile crime, and secret vice . . . increasing (what challenges) civilized lands.” Hall also worried about gender. His studies were of white males and the “dangers . . . of establishing normal periodicity in girls, to the needs of which everything else should for a few years be secondary.” Psychology, he said, should help develop men who were naturally “aggressive and prepare women for maternity.” Finally, and also related to the city was the *unbridled capitalism where there was* “the mad rush for sudden wealth and the reckless passions set by its gilded youth.”

We no longer talk about the moral sciences and instead use a different language in which benchmarks and “scientific evidence” become a way of articulating moral questions of the present and the future. The changes in the language of science allow the discussion to move to the postwar years. This revisioning is the second part of the ingredients of the “recipe” of ideas and theories assembled in the making of people that connects to PISA.

With the making of people, the second part of this recipe of science is systems theory and cybernetics. Initially tied to war efforts, cybernetics joins with systems theories in multiple social and psychological sciences, such as cognitive psychology, sociology, and anthropology. Cybernetics brought into social analysis a way to think about mind in relation to the machine—the machine as the computer and its analogy to the mind as artificial intelligence. The focus was on processes and networks of communication that provided the method and strategy for change.

Systems theory was not new. It appears in Adam Smith’s *Wealth of Nations* in the 1800s, is placed with mathematics by John von Neumann in the 1920s, and is revisioned after World War II with the development of cybernetics. It is this later notion of systems that becomes important for thinking about the relation of research, policy, and change when drawing on the international assessments of student performance, notions of benchmarks, and the invoking of “empirical evidence.” That is, systems analysis provides a “basic ingredient” to shape and fashion the spaces in the assessments as a salvation theme in which to order, classifying and act on what schools do.

If I can summarize a recently emerging history of science, cybernetics provides concepts for mapping the processes and flows of information as stable objects for administration—the mode of reasoning whose principles give form to the current thinking of benchmarks and scientific evidence.

Systems thought, developed in the 1920s and assembled with cybernetics during the war, was taken in the human sciences as providing an “unprecedented synthesis” of the notions of human life. Biological metaphors of social life as an organism that grew, developed, and changed were incorporated in social theories to study and organize the objects of change. The openness of the system to change is expressed as correlations between functions (e.g., family life, child self-esteem, teacher professional development) and structures defined as the system (e.g., institutional units in school “system” such as classrooms and school leadership characteristics).

What was different was combining the biological analogy of system with cybernetics. Change entails the link between human behaviors with machines (e.g., computers, photocells, and radar) directed to systems goals. The language to describe change is processes expressed as inputs and outputs. The processes and communication (organism) function as networks, flows, and circuits within structures (the machine) as “feedback” loops to trigger systems development and growth, the operational definition of change. Information is not about meaning but choices between possibilities within a structured situation, structurally denoting a formally defined range of possibilities for communication. The purpose of social and educational research is goal attainment or what earlier was spoken about as knowledge utilization.

The object of change is the ordering of the constellation of components of the system that can achieve its optimal relations. Although not essential earlier in social thought, algorithms became important for thinking about the rigid rules that provide optimal solutions to the given problems or delineating the most efficient means toward certain given goals. Choice is between discrete units (Halpern 2014: 46–47). Cybernetics theories connected to systems thought bring into view a way to think about social life and change that entails determinacy and indeterminacy. When cybernetics and systems theories are examined as principles ordering the international assessments, the measurement procedures stabilize the components of the system as ontological objects (the professional teacher) in order to examine its processes that contribute to its optimization.

The principles of harmony and consensus in social and psychological research entail hypothesizing the state of equilibrium to express the optimum point to achieve. With equilibrium is what hinders or prevents the optimization of systems goals. This establishes a symbiotic relation between what otherwise appears as opposites: equilibrium and disequilibrium. Research is to minimize the points of disequilibrium to achieve stability and harmony.

When applied in the social and educational research about change, equilibrium and disequilibrium translate into social values that express normality and pathology. OECD’s current measures of “well-being,” for example, are to understand the psychological and social conditions that contribute to high student performance (i.e., the normal). The idea of well-being simultaneously brings into existence the qualities of students that limit, interfere, and restrain the functioning of the system, such as family and community experiences as well as personality traits that are lacking in the child, such as lacking motivation and engagement. The qualities of interference and restrain are the practical translations of system’s theory of disequilibrium into cultural characteristics of pathology.³

³As Bürgi and Tröhler argue (2018), benchmarks emergence within OECD were educational “thermometers” that drew on a medical language about normalcy and pathology. The defining quality through benchmarks (re)visioned the language of social engineering. My concern is how this language is inscribed in systems theories as cultural principles of normalcy and pathology.

Harmony, consensus (equilibrium), and the disruptions (disequilibrium) of the system theoretically order the problem of change. The homogeneity and consensus make administration and prediction possible in strategies to change schools. To talk about the students' achievement gap to identify those children in need of educational remediations, for example, assumes the consensus of purpose and harmony necessary for the system components but which the gap disturbs.

But this harmony and consensus is predicated on potentialities where system performance actualizes what is desired. Benchmarks are the optimal goals to obtain (Halpern 2014: 45). The international ranking systems of PISA and other social and economic indicators are not about finding the perfect system. The rankings draw on cybernetic modes of thinking to compare, order, and plan for efficiency in process and communication patterns that optimize systems. Optimization is where all girls equally learn mathematical knowledge and where there is no achievement gap, where *all* children read and where all are mathematically able, and the work of experts and professional teachers is engaged as full efficiency.

The complex epistemic framing of systems analysis was brought into multiple disciplinary projects that included education. The system's principles were connected and assembled with social and cultural notions about, for example, people as "naturally irrational" and managed through processes of decision-making (see Heyck 2015). The new mathematics curriculum of the 1960s, for example, focused on the processes and communication patterns that could be "theorized and its components identified through a particular set of behaviors and traits thought to make up that kind of person (and thereby a rational and democratic collective)" (Diaz 2017: 31). The professional organization for mathematics teachers, for example, argued that learning mathematics is "contributing to effective living, otherwise it does not have worth and usefulness" (National Council of Teachers of Mathematics 1945: 200). The "applications of mathematics to problems of industry, physical science, aviation and business should be used for purposes of motivation, illustration and transfer" (National Council of Teachers of Mathematics 1945: 201).

Systems as an abstraction actualize future society and people; the abstraction embodies principles that are not empirically deduced but are a priori and *self-referential and self-authorizing*; that is, its mode of ordering and classifying inscribes internal boundaries in defining problems, contexts, and the possibilities of change. This is not unique to system theory. What is given focus here, however, are the principles of systems thought as a strategy of change in educational policy and research.

Another element in this new rationality was what constituted the rules and standards of empirical evidence. Historically, the idea of scientific, empirical evidence means simply systematically observing what happens in everyday life. A newspaper, a play, a sport game, and an introspection in early psychology were ways of ordering and classifying empirical evidence. In the postwar years, social science was concerned with the administration of change incorporating the idea of algorithms to think through mathematics about empirical evidence. Algorithms, it needs to be noted, entail a particular kind of mathematical thinking about social life as having rigid rules that provide optimal solutions to given problems or delineate the

most efficient means toward certain given goals. The models of change offered by the OECD report on the Swedish school system (Pont et al. 2014), discussed later, inscribe the operation of algorithms as underlying principles for forming the model of change that is to lift Sweden from average to above average.

16.2 Numbers as Cultural Practices

While brief, the historical discussions directed attention to benchmarks of international assessments of schools and international ranking of universities are not merely descriptions born of empirical data drawn from the present. The numbers are brought into reports embody historically lines whose principles are about people that research is to actualize (see Lindblad et al. 2018). The OECD's PISA and the McKinsey reports on education are ordered through cybernetics and systems analysis as a theory ordering assessment by focusing on processes and communication patterns of social life that, while, at the same time, it is about ordering the possibilities of change that anticipate a desired imagined society and people. The school is studied as a system that has qualities of a biological organism, a metaphor to think about "the educational needs" in which social growth and development can be measured.

Numbers serve as the reference within the systems analysis and benchmarks as the empirical evidence. Numbers are parts of systems of communication whose technologies create distances from phenomena by appearing to summarize complex events and transactions (Porter 1995). As the mechanical objectivity of numbers appears to follow a priori rules that project fairness and impartiality, numbers are seen as excluding judgment and mitigating subjectivity. Numbers are a technology of distance and used as a claim of objectivity instantiated by moral and political discourses. They bring into existence kinds of people actualized within the boundaries of possibilities of the abstraction given as the school "system."

Numbers connect and are a further ingredient of this recipe of the reason organizing assessment and change. The domain of quantified knowledge is artificial through creating uniformity among different qualities of things that gives social authority to the interrelation of science and policy (Porter 1995: 6). The uniformity and quality of things in the statistical correlations of the international assessment are placed into models of intervention. The models of change identified by the OECD report on the Swedish school system (Pont et al. 2014) have qualities of algorithms. The problem solving and the "scientific evidence" expressed through numbers are to verify the benchmarks as algorithmic rules. The model appears as merely the application of statistical thinking which, as noted in the previous chapter, is a kind of mathematical thinking about social life that has rigid rules. The algorithmic rules provide optimal solutions to given problems or delineate the most efficient means toward certain given goals. The algorithms of the measurements are constructed to neutralize the indeterminate qualities of social life, culture, politics, and context (Barber and Mourshed 2007: 13).

The numbers and comparative listings of nations in PISA, for example, function as a GPS system for national school systems for people and governments to locate themselves and identify differences.

Embedded in the broad generalization are categorical constructions that are expressed to compare and rank nations are directed to the qualities of people—teachers, school leaders, children, and their family. The composites formed to classify school systems entail prior conceptions of the dispositions and sensitivities of what constitutes, for example, the classifications of school leaders and teachers who can “adapt” and implement the models of change. The taxonomies of the skills of an “expert” or professional teacher, for example, are qualities of “peer-led creativity and innovation” (Mourshed et al. 2010: 20), or “building technical skills of teachers and principals” (Mourshed et al. 2010: 28) that act comparatively. Creativity, innovation, and skills are words to differentiate particular kinds of people, their interactions, and sociality from those not creative, innovative, or skillful.

Mosaics of numbers are assembled as truth bearing statements about the effective functioning of schools that appear as a unified abstraction of “nation” and its potentialities (see, e.g., Popkewitz 2008). The complexities of the differences among nations and cultures disappear and reappear as standardized and comparable descriptions of numbers that represent singular, universal population of nations from which differences are calculated.

The visual techniques of OECD’s graphs, statistics, and charts function as maps to organize the flow of information about stable objects that move among different social spaces to “tell” of the route to innovation (Halpern 2014). The graphs, statistics, and charts perform as “immutable mobiles” (Latour 1986). They are visualization technologies that collapse complexities into standardized categories and calculations in which phenomena seem well arranged, easily accessible, and can travel to different places for monitoring and steering what is seen and acted on.

The optical consistency translates statistical distinctions into information appearing as having a “communicative objectivity.” The “optical consistency” entails a particular calculative rationality in which process and method are fabricated as material objects, with statistics a tactic for visual information. Numbers are given as the transcendent ordering of what nations need for development, growth, and equity. Cultural distinctions are erased to create a layer for comparison of differences through the superordinate qualities of the statistical equivalences. Numbers act like a communication practice through which statistical equivalency performs like the reasoning about comparability and differences.

The visualization technologies of numbers no longer appear as measuring personality and inner qualities, but are about nations “seen” through the standardization of those qualities and characteristics of people that need development (see, e.g., Borgonovi and Przemyslaw 2016: 132).

Change is given its directionality that signifies educational improvement. The processes of change are visualized as well known. The change models are given as orderly, linear processes that instantiate clear and logical procedures. The procedures are available to all if wise enough to follow the “highways”—a word used, for instance, by the OECD and the McKinney Reports (see, e.g., Mourshed et al. 2010).

Ignored in most policy studies and research is the paradox of inscribing equivalency and comparability through numbers. The technologies of numbers are embodied in a grid of cultural practices that “act” on teachers’ and children’s lives in classrooms. To talk about “achievement” and the “achievement gap,” shorthand for numerical differences between children instantiates particular rules and standards of reason by which experiences are classified, problems located, and procedures given to order, classify, and divide. Exploring the “reason” through which numbers are made sensible and plausible puts focus on the processes of exclusion and abjection in the impulses to include.

If I move to the present, international assessments of the OECD are “merely” descriptive of some reality but “act” in making or fabricating what matters, what “acts” as a given to social problems and the strategies of change are to enact that “nature.” The statistics and numbers generated in the international assessments are taken as stable scientific facts for planning and interventions. Measures provide a comparative algorithm that “tells” of a continuum of values about people and the future that enables successful school systems.

The measures are to lead to a common world accessible as highways to rectify the dangers that are disruptive of the equilibrium of the system. That is what the models of change in the OECD Education Policy Review report of assessment and change are to produce. The models of change are not merely about systems. In the Swedish report, the universal characteristics and qualities of kinds of people are those that are actualized nationally, as the vision and rationality for thinking and acting as teachers, but also the social and psychological qualities of “well-being” of the abstractions that unity students, parents, and communities! (See, e.g., Pont et al. 2014; OECD 2017).

16.3 Benchmarks and Variations: Desired People to Be Actualized

The counting and numbers comparing nations and educational systems perform as expectations about universal characteristics of society and people. These universal characteristics form as images and narratives that express the common and harmonious world prescribed through its system’s theory. While the graphs, charts, and magnitudes show differences that seem as only categories about the school systems of nations, the comparisons entail ranking extensive codifying and standardizing of characteristics of people and institutions that are elided in the visualizations. The 2015 PISA assessment is characteristics of children in relation to families that are about “kinds of people.” The assessments are described as the student’s “well-being” that contribute to successful school performance. The numbers embody “a comprehensive set of well-being indicators for adolescents that covers both negative outcomes (e.g., anxiety, low performance) and the positive impulses that promote healthy development (e.g., interest, engagement, motivation to achieve)” ([http://](#)

www.oecd.org/pisa/publications/pisa-2015-results-volume-iii-9789264273856-en.htm).

The comparison and ranking of nations are placed into models of change to actualize the desires generated as “the arrow of time.” The OECD Education Policy Review for Sweden (Pont et al. 2014), for example, suggests a three-part process. Change is expressed as recommendations “tailored” to the specific education system’s “needs.” The tailored advice entails words like contextualization of “country’s needs.” The tailoring is, in fact, the generation of desires. The numbers appear as the “empirical” evidence of the future appearing innocuously in the optical consistency of the charts as “the needs” of nations.

The success and failure are visualized as scales that map about the development and changes of populations as the arrow of time. The scales appear initially as institutional trajectories that identify different characteristics of national and cities developmental patterns to achieve success. Variations are registered as a continuum of values about the normal and pathological. The lists and rankings in the international assessments produce a visual form of scaling that differentiates and divides (Hansen and Vestergaard 2018).

Scaling is produced through correlations of the data to project, for example, “integrated set of actions” within a hierarchy that forms “intervention clusters” for improving the performance levels of the system (Mourshed et al. 2010: 14). The scales combine institutional (organizational) with personal qualities in a seamless movement that give the system measures of “accountability, performance, and professionalism” (p. 14). The universalize standards are scaled and, in the case below, have no content and appear as a clear and linear progression discrete markers about “stage-dependent interventions” that produce school improvement.

The logic of change embedded in the scaling creates a continuum of value. The differences are standardized, codified, and ordered into hierarchies of values for comparing. The hierarchy of values differentiate nations and populations. The statistical analyses used to talk about school systems are said to “examine why and what they have done have succeeded where so many others failed” (see, e.g., Mourshed et al. 2010).

The scaling entails an anticipatory reasoning about the future society and populations. McKinsey’s *How the world’s most improved school systems keep getting better* argues, for example, that benchmarks are an “universal scale of calibration” to create equivalences from, for example, several “different international assessment scales of student outcomes discussed in education literature” (Mourshed et al. 2010: 7). Benchmarks are standards placed in scales that order elements on a continuum from “poor/fair to good,” “good to great,” and “great to excellent.” In a different report on how school systems are improving, the scale is given as a clear and linear progression that is internal to each category and then correlated across categories but directed to a philosophical ideal about what constitutes the desired school (Barton et al. 2013), such as:

Fair to good: consolidating system foundations, high quality performance data, teacher and school accountability, appropriate financing, organization structure, pedagogical models;

Good to great: teaching and school leadership as a full-fledged profession, necessary practice and career paths as in medicine and law; and

Great to excellent: more locus of improvement from center to school, peer-based learning, support of system-sponsored innovation and experimentation.

The strategy is to address deviations from the norms in the development of country case studies. Variations are from the standardized norms that define differences and spaces of actions.

The benchmarks seem to be about *national development*. But the qualities and characteristics given attention through the benchmarks and the scaling are abstractions of kinds of people and differences. The numbers generated in the statistical measures are inscription devices that assemble and connect pedagogical, psychological, and social/cultural principles. The social/political outcomes are coupled with psychological outcomes to bring salvation themes into fruition: students' happiness, well-being, and life satisfaction.

National student performances are linked to psychological qualities of the teacher and the child. Measures of achievement are correlated to who the teacher is, psychologies of the child, school organization, and norms about modes of living called "parent participation"; for example, "peer-led creativity and innovation" and "building technical skills of teachers and principals." Measurement categories that focus on "creativity," "innovation," and "participation skills" embody principles about desired kinds of people and the kind of society that gives expression to the desires. The qualities and characteristics are normative, constituting values as well-being measures about the "enjoyment of life," happiness, belonging, and self-realization.

The indicators of national performance are cultural registers about people. "The evidence base ... [of PISA] goes well beyond statistical benchmarking" to examine children's "enjoyment of life," asking

Are students basically happy? Do they feel that they belong to a community at school? Do they enjoy supportive relations with their peers, their teachers and their parents? Is there any association between the quality of students' relationships in and outside of school and their academic performance? ... Together they can attend to students' psychological and social needs and help them develop a sense of control over their future and the resilience they need to be successful in life. (OECD 2017: 3)

Characteristics about people are re-visualized as macro-numerical consistencies and differences across nations. The statistical measures are based on equivalences that create universal categories from which difference is assessed and charted along continua of value. The visual ordering of numerical data creates variations of performance as they relate to measures of "endurance" and motivation as comparative qualities of collective and national differences. The skills and competences are connected to organizational qualities (e.g., teacher professional development, school leadership) and desired sociological and psychological characteristics of children.

Differences appear as comparisons created as sets of equivalences among disparate databases. The comparisons are formed through objectification about people embedded in universal calibrations. The microstudies entail classifications and numbers that connect to the psychological categories of children's social and communicative patterns, such as family influence on children's achievement and the

relation of education to employment. The measures codify distinctions about the “needs” of better-performing and low-performing students, objectifications that elicit identifying processes of “feedback” loops talked through categories about autonomy, respect, parent involvement, and interactions with school and other parents, and as psychological characteristics of motivation versus disruptive behaviors (OECD 2017). The qualities as distinctions and differentiations are recalibrated into national tables in which the submeasures and statistical distinctions disappear as macro-statistical categories about society and nation.

The comparisons are formed through secondary statistical measures that form a spectrum that rests, in turn, on a universal scale of calibration that we developed by normalizing several different international assessment scales of student outcomes discussed in the education literature. Our findings are not, however, the result of an abstract, statistical exercise. In addition to assessment and other quantitative data, they are “based on interviews with more than 200 system leaders and their staff, supplemented by visits to view all 20 systems in action” (Mourshed et al. 2010: 12–13).

Yet the standardizing and codifying to find equivalences, ironically, erase difference by establishing difference. The reduction of complexities to those of rational management “systems” makes it seem that “all” national systems can anticipate equality through the application of categories that recognize difference that inscribes difference. Differences entail comparisons through creating sets of equivalences among disparate databases. The paradox of the international comparisons is its inscription of difference that “makes” differences so that some can never be at the “top.”

16.4 Double Gestures: The Hope and Fears of Kinds of People

The mapping of the international assessment appears as about national development in a GPS whose ranking and lists seem about potentialities of what should be if only nations work hard and diligently through education. But the potentialities, as discussed above, are saturated with the potentialities of societies, people, and nations. There are hopes that simultaneously generate fears that are expressed as unless a nation makes “sufficient investments to develop capabilities in the present, students are unlikely to enjoy well-being as adults,” writes the OECD report (2017: 62). The potentialities that nations are to achieve are double gestures. Benchmarks and their “empirical evidence” embody the universals that paradoxically compare and divide. Lists and rankings in the international assessments, for example, compare secondary statistical measures that create “a universal calibration” in which a spectrum of norms defines equivalencies among subsets of data (Barton et al. 2013: 7).

The gestures of hope and fear that are generated in the statistical calibrations are about who people are and should be, as well as about who does not “fit” as part of

the universal. The characteristics of people who succeed and do not succeed form a continuum of value about the hope to actualize a desired future with fears of populations inscribed as dangerous to the system's harmony and consensus. Codifying and standardizing are not merely about achievement. The ranking and classification engender differences in those "civilized" and those different in degree from that advanced stage of civilization—the school systems and nations at the top!

The paradox of the change to include is to normalize differences—differences as a comparative logic of nations that also has comparative notions of society and individual embodied in the macro statistics. The irony and paradox of the systems principles is that its harmony and consensus morph into cultural practices of normalcy and pathology. The preferences embody prefigured divisions that entail the pathologies of populations dangerous to the system's models and pathways that are feared if not changed.

The comparison eliminates differences to produce distinctions that divide. If I draw on the OECD and McKinsey reports, effective education travels as the gesture of hope that forecasts the salvation themes of a good society, full employment, well-being, and the progress of the nation. The classifications and numbers connect to psychological categories of children's social and communicative patterns, such as family influence on children's achievement and the relation of education to employment. The social and psychological distinctions are about the hopes of future kinds of people. The hopes, however, simultaneously express the gesture of fear of the dangers and dangerous populations to that future. The fears are expressed as the kind of parent who does not enable the child's moral development for success in school and the kind of child who "lacks" motivation, well-being, and the proper modes of living. The delineating of stages of development are not only organizational factors but they also align with psychological qualities of youth that normalize what is functional and dysfunctional for employability, described through categories of disengaged, disheartened, well-positioned or too poor to study (Barton et al. 2013: 32–33).

16.5 “Follow Me!” Knowing the Future as Taming Uncertainty

The future is certain and the problem of measurement is to put nations and people on the highways to actualize the abstraction of the school system. McKinsey uses the highway metaphor, for example, to think about highways as not merely paths to the future. They embody the qualities and characteristics of the kinds of people who will inhabit that future. Not far away from the highways and pathways that are to “deliver better outcomes” for future harmony and consensus are fears of danger and dangerous people. To follow the models of change in reducing unemployment among ethnic, racial, and poor populations is as “to get rid of potholes, make educators and employers part of the solution by providing ‘signs’ and ‘concentrate’ on the patch of pavement ahead” (Barton et al. 2013: 54).

Benchmarks and “empirical evidence” are inscription devices that portray that the knowledge of the future is at hand for all nations to reach the top. The pathways posit social life as a mechanism or machine whose proper alignment (equilibrium) allows for it to administer system goals. The problem is how to tailor the highways individually so all can find the destination.

The mechanisms of change are universal. The proper alignment of these drives inaugurates the pathways to optimize systems goals. Change is the application of the universal “to navigate the challenges in their context and to use their context to their advantage” (Mourshed et al. 2010: 26). Innovation relates to how well the pathways are delineated to access the highways to success.

Finding the right highways also means recognizing that there are dangers and the dangerous people. The paradox of the pathways is the comparative reasoning of the system whose theoretical function achieves the optimum outcomes. For instance, a McKinney report expresses the dangers of not getting rid of potholes and the hope of “patching the pavement” for educators and employers to solve the future problem of unemployment (Barton et al. 2013: 54).

In all nine of the countries we studied, the road from education to employment is under constant repair. Signs are missing and the traffic is heavy. Drivers tend to concentrate on the patch of pavement ahead, not on the long haul. The result, ... only a small fraction of young people and employers reach their destination in a reasonably efficient manner. The situation is not hopeless. Not only do many educators and employers accept that they need to be part of the solution, but many also have proved distinctly ingenious in filling in some of the potholes. (Barton et al. 2013: 54)

The pathways and highways perform to achieve the optimum state of harmony and consensus. They are assembled and connected in the grid of principles that place the theoretical relation of equilibrium with disequilibrium as social and cultural distinctions in the assessments and numbers that rank, differentiate, and divide qualities and characteristics of children’s home environments, positioned as double gestures.

16.5.1 Some Concluding Thoughts

I began with the Siren’s songs as dangerous, enticing the mariners’ ships into the rock. In some ways, benchmarks and “scientific evidence” provide the contemporary temptations to the issues of development and progress. The beckoning today is expressed as benchmarks and “scientific evidence.” They embody salvation themes about national development and individual happiness that has particular limits in thinking about change and the making of people and society. The international assessments are anticipatory, a calculated rationality that has a utopic image but that image is within a particular historical configuration. The international assessments are anticipatory as the preferences are prefigured in the abstraction of the school as a system.

The irony and paradox of the system’s principles is that its harmony and consensus morph into cultural practices of normalcy and pathology. The comparing with

the universal norms and distinctions provided differences and divisions. The divisions were pathologies of populations dangerous to the system's models and highways and feared if not changed.

The numbers are not merely describing and correlating. They are anticipatory. The future is calculated as desires that have algorithmic formats that are prefigured in the abstraction of the school as a system. That future entails a comparativeness that differentiates normalcy and pathology as gestures of hope and fear.

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Chapter 17

A Comparativistic Narrative of Expertise: International Large-Scale Assessments as the Encyclopaedia of Educational Knowledge



Daniel Pettersson

17.1 Introduction

In his seminal book *The Postmodern Condition: A Report on Knowledge* (1984), Lyotard writes that ‘Data banks are the Encyclopaedia of tomorrow. They transcend the capacity of each of their users. They are “nature” for postmodern man’ (Lyotard 1984: 51). Lyotard’s prophetic notion relates to a discussion about how knowledge has changed when state and society switch from modernity to postmodernism. Here he observes an epistemic displacement (cf. Latour 1988) of knowledge, which, instead of being ‘hidden’ and managed by experts, is governed by what he calls ‘perfect information’ (Lyotard 1984: 52), where data is considered as the prime knowledge. In principle, when data becomes the dominant form of knowledge, it also becomes accessible to any expert to the extent there are no longer any ‘scientific secrets’ (Lyotard 1984: 52). The role of experts also changes. Instead of being ‘hidden’ to the common man, visualized data is open to everyone and it means that anyone can become an expert.

In this chapter, Lyotard’s notion serves as an intellectual framing of how a specific reasoning (cf. Hacking 1992a) develops within the educational sciences that eventually leads to the construction of international large-scale assessments (ILSA) and how this reasoning gains legitimacy within both science and policy embedded in a larger societal frame of meritocracy. To this end, this chapter historicizes some of the historical trajectories facilitating the construction of the first truly comparative assessment based on a positivistic inspired aggregation of numbered data. This first IEA (*the International Association for the Evaluation of Educational Achievement*) study was eventually followed by a multitude of different ILSA. In this, special attention is given to five important trajectories necessary for ILSA to

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311

occupy their present role in today's meritocratic system: (1) how the scientific revolution changed and framed epistemological beliefs, (2) how the role of experts and expertism (Popkewitz 1984) changed, (3) how the introduction of statistics facilitated new ways of demonstrating the world and 'reality', (4) how the long-forgotten work by the French empiricist Marc-Antoine Jullien was used for a longer and legitimate history of a special branch of comparative education and (5) how the governing of matter and minds has changed over time. All these trajectories are important for an understanding of how ILSA became intelligible in a meritocratic context.

17.2 Reasoning Embedded in the Frame of Meritocracy

We begin by elaborating on and explaining how meritocracy can be understood. In a critique of how liberal society constructs inequality through ideas of merit, British sociologist Michael Young's book, *The Rise of the Meritocracy*, published in 1958, is a well-known example. In fact, the concept had already been used some years before this in an article by Alan Fox (1956) that gave merit a function by discussing institutions and ideologies as reproducing and legitimizing social stratification (Littler 2013). According to Fox, meritocracy is a societal concept in which the talented, energetic and ambitious are favoured as a result of both their talents and the interconnectedness between education, merits and social benefits. It became apparent that in the emerging modern society, differences could no longer be legitimized by referring to birth, rank or economic prerequisites. It was also evident that in the nineteenth century, suspicion of privilege and meritocracy was introduced as a safely elitist form of democracy (Porter 1995) and meant that relationships between the individual and the society had to be rewritten.

In modernity, reasoning about meritocratic selection is normally justified by referring to equal opportunities. This is often interpreted as individuals with the same talents and a desire to make use of them should have the same opportunities in life. The only hierarchy that can be accepted is based on meritocratic ideas aggregated from evaluations of individual performance. Consequently, inequality is only based on who has access to education and social positions based on merit. As such, meritocracy is not blind to inequality, but defines inequality and equality differently. As equality depends on merit, merit can also lead to inequality. In other words, meritocracy is both an ideology and a state-sanctioned technology that promotes the elimination of a traditional heritage-based inequality, but at the same time legitimizes inequalities based on individual performance. In fact, Lemann (1999) criticizes this by stating that American meritocracy is a lie, in that socioeconomic background and ethnicity are still the most dominant predictors of the future of individuals. As can be seen in discussions about meritocracy, Lemann's observation is universally applicable. Meritocracy is a problematic and complex ideology, though. Michael Young and many others have pointed to some of the problems associated with meritocracy, for example, considering social and cultural heritage in

terms of access to merits (Bourdieu 1971). These descriptions are often tied to the many unspoken assumptions and styles of reasoning (Hacking 1992b) on which meritocracy is based, such as the conceptualization of talent/intelligence, the ability to discern what essential knowledge, skills and abilities are and whether they are measurable—preferably by means of standardized and comparable tests.¹ Others have criticized meritocratic technology for its inability to maintain the meritocratic ideal, the establishment of new hierarchies and that certain groups are systematically disadvantaged and discriminated (Bell 1972). Thus, here we note a combination of meritocratic reasoning related to categorizations or taxonomies of individuals or groups in criticisms of educational systems at work.

Consequently, rather like a gatekeeper, meritocratic technology affects and regulates the entrance to, passages in and outputs of education and the labour market (cf. Forsberg 2006). Within the education system, this is highlighted by administrative and pedagogical systems designed to assess, evaluate, document and compare students' achievements. In other words, meritocracy as a technology is a combination of equality and competitive ideals. In this perspective, meritocracy as a just injustice or a just inequality can also be highlighted (cf. Forsberg and Pettersson 2015). Meritocracy is as such the frame within which ILSA are made intelligible and uphold a position. In the following, five different trajectories and displacements are historicized in order to explain how the technology of ILSA has developed historically into a technology in line with the reasoning of meritocracy.

To describe these five displacements and make comparative assessments intelligible, Gaston Bachelard's notions of epistemological obstacles (*obstacle épistémologique*) and epistemological breaks (*rupture épistémologique*) (Bachelard 1938/2002) are used as intellectually organizing principles. The benefits of thinking about the developments in a Bachelardian way is that scientific and societal developments are never regarded as linear. Instead, Bachelard thinks about them as a constant process of obstacles and raptures continually involved in a process of legitimacy. But before historicizing these displacements, we need to explain what ILSA are and how they came about.

17.3 A Brief History of ILSA

Horkheimer and Adorno (1948) argue that civil society tends to make the incommensurable comparable by reducing it to abstract quantities. This strategy has been most visible in the field of international comparative research (e.g. Durkheim 1894/1938; cf. Steiner-Khamsi and Waldow 2012) in the humanities and social science traditions (Cowen and Kazamias 2009), including their long and intense controversies (see Rust et al. 2009). The practice and importance of comparison have

¹cf. '[...] most common definition of meritocracy conceptualizes merit in terms tested competency and ability, and most likely as measured by IQ or standardized achievement test' (Levinson et al. 2002: 436).

been described in different ways. For instance, Nóvoa and Yariv-Mashal (2003) regard comparisons more important than cases and variables in comparative studies. In turn, Schriewer and Martinez (2004) analyse periods in the development of the comparative field emphasizing a reflexive turn. A major issue today in the field of comparative education research is the emphasis on comparisons based on concepts and the problem of comparisons between countries (e.g. Schriewer 2009). One observation is that very few comparative studies within education integrate case and variable studies on a conceptual basis (e.g. Stiegler and Hiebert 1999) and that data from empirical studies in the field are under-analysed (e.g. Lindblad et al. 2015). However, nowadays, international comparative analyses are vital for the development of scientific discourse in education and for counteracting theoretical chauvinism (e.g. Archer 2013).

Comparative educational research has developed rapidly since the late 1950s in terms of research programmes, a number of studies in these programmes and the number of publications (e.g. Forsberg and Pettersson 2015). Comparative educational research has also been examined in a number of research reviews and handbooks (e.g. Rutkowski et al. 2014) and also as an ingredient in other research traditions, such as school effectiveness and improvement research (e.g. Reynolds 2007) or comparative education (e.g. Beech 2009). Conclusively, it can be said that comparative educational research as a scientific branch is based on at least two important premises—comparisons and data. In the late nineteenth century, the production of numbered data was used for new visions of the social and economic world. The new construction of epistemic references for defining ‘reality’ with the aid of data is linked to the creation and management of the development of the self-defined ‘democratic’ state. Numerical data also provide more than an ‘objective way’ of seeing reality, in that it ‘institutes’ reality by creating a ‘common cognitive space’ that can be both observed and described through data (Lussi Borer and Lawn 2013).

After the Second World War, data was considered as the most objective way of understanding ‘reality’ (Lussi Borer and Lawn 2013). The reorganization required a standardized system of accounting. One offshoot was the creation of ILSA of student learning outcomes. This development was guided by the vision that if custom and law define what is educationally permissible within a nation, educational systems beyond national boundaries suggest the educationally possible (Foshay et al. 1962). This vision was used to introduce the first international comparative pilot study in mathematics, which not only described the origins of an emergent field, but also foreshadowed the subsequent growth of comparative assessment studies (Owens 2013). Consequently, ILSA can be seen as creating a practice that shows what is educationally possible.

17.4 IEA: The Mother of All ILSA

The International Association for the Evaluation of Educational Achievement (IEA) was the first organization to be formally established for this kind of activity in the 1950s. The founders viewed the world as a natural educational laboratory, where different school systems experimented with obtaining optimal results in the education of youth. They assumed that if research could obtain evidence from different national education systems, the variability would be sufficient to reveal important relationships that would otherwise escape detection in a single education system (Pettersson 2014b). The purpose was said to determine intellectual functioning using multiple-choice items, test the feasibility of large-scale assessments and be exploratory (Foshay et al. 1962). The first IEA study differed from other contemporary comparative studies in that it sought to introduce an empirical approach into the methodology of comparative education, a field that is said to have initially relied on cultural analysis (Foshay et al. 1962). IEA embarked on the task with great enthusiasm and ran a pilot study (beginning in June 1959 and ending in June 1961) in which the researchers concluded that cross-national comparisons of educational performance could be made with comparable results (Foshay et al. 1962). Such findings were startling at the time, but even more important was the clear sense that a group of researchers from different cultures and educational systems could agree on a common approach to testing and evaluation (Purves 1987). The original aim of studying intellectual functioning was changed to include a more sharply defined curriculum base in the test items. David Walker (1962) contributed to this with the phrase ‘opportunity to learn’, which became one of the important items of study in the following IEA projects, even though Walker’s analysis in the pilot study found that individual ability accounted for more of the explained variance in the successful completion of an item than the teacher’s emphasis in class (Walker 1962).

In 1961, researchers from 12 countries met within the organizational frames of IEA to discuss the pilot study assessments in mathematics, reading comprehension, geography, science and non-verbal ability. The study was considered a success and plans for another study in mathematics took shape. It was agreed at the outset that the project should be a cooperative enterprise. The major purpose of the inquiry was to measure achievements in mathematics and to relate this achievement to relevant factors in the home, school and society. In determining these factors, the investigation had to rely on the findings of previous research. The project, called the First International Mathematic Study (FIMS), was said to be an attempt to assess the efficiency or productivity of different educational systems and practices (Bloom 1969). The final results of FIMS were presented in a publication by Husén (1967). In addition to the main study, various reports were published (e.g. Keeves 1968; Pidgeon 1967; Kuusinen 1967; Hultin 1968). In the study, it became evident that there was a difference between how a subject was actually taught in the classroom and how it was described in the curriculum, and that this was a good predictor of the differences in student performance. FIMS also showed that there was a lack of equity between different groups of students in how they performed. After this study,

IEA conducted a variety of studies on different subjects, time spans and periods (for a list of the different assessments conducted by IEA, see Lindblad et al. 2015).

17.5 OECD: The Queen of ILSA

The IEA studies led to many assessments being undertaken in various countries. The Programme for International Student Assessment (PISA) study, a project of the Organization for Economic Cooperation and Development (OECD), was similar to the IEA studies in many respects. Although OECD has primarily been concerned with economic policy, education has become increasingly important due to the fact that over the last 40 years' education has been reframed to include economic competitiveness in an economic discourse related to human capital and 'knowledge economy' (Pettersson 2008). Through statistics, reports and studies, OECD has activated a 'common sense' in political decision-making by saying that scientific 'proofs' are indisputable (Martens 2007).

Martens (2007) argues that OECD's greatest impact can be seen in its agenda with indicators and its role in constructing a global policy field of governance by comparison (cf. Grek 2009). Nóvoa and Lord (2002) state that comparisons like this may not be regarded as a method, but can in fact be seen as policy. The policy is driven by an expert discourse that, by means of comparative strategies, tends to impose natural or common-sense answers in national settings (cf. Pettersson 2008). While OECD serves national policymakers well with a comparable discourse in terms of statistics, it also provides them with a global policy lexicon concerning what education is and ought to be (cf. Pettersson 2014a). One way of creating this global policy lexicon is to look at what is measured in PISA. PISA provides comparisons of the competencies of 15-year-olds that are relevant to everyday adult life, rather than simply evaluating curricula-based knowledge (OECD 2001). It is also said that assessments that test curriculum only offer a measure of internal efficiency and cannot reveal how schools prepare students for adult life (OECD 2001). As such, PISA can be seen as a platform for policy construction, mediation and diffusion at the national, international and even global levels (Rizvi and Lingard 2006).

PISA assessments have been conducted several times. In every assessment, students' knowledge in reading, mathematics and scientific literacy is tested, together with interests and backgrounds. Innovative domains are also assessed, such as collaborative problem-solving, and there are also plans to incorporate what is called global competency from the 2018 assessment onwards. The emphasis on 'real-life' circumstances and the capacity to enter the labour market with the relevant skills has been said to shift the focus of PISA away from less explicit educational aims that are complicated to measure (Grek 2009). PISA also easily connects to the idea of the self-governance of active subjects, which expands governance into a system of individual self-regulation (Ball 1998). Even though PISA both is constructed and operates under a clear policy framework that is designed to improve future results, it is not just a testing regime. PISA should also be seen in the light of its ability to

improve and attract economic and human capital investments. For policymakers, PISA is therefore a two-sided coin in that it tests outcomes and attracts economic investment. In view of this, PISA can be said to have two functions—economic and educational—in the international policy discourse (Pettersson 2008). As these two aspects are interwoven and strengthen each other, they can hardly be analysed separately.

Through the 1980s and 1990s, ILSA proliferated in both type and design. IEA expanded its surveys from mathematics and science to include reading, pre-primary education, classroom environment, second language acquisition, technology and civics. However, while PISA imitated IEA's 1959–1961 study with the intention of evaluating student performance close to the end of schooling, the objective of the assessment actually evolved from curriculum-based learning to a new concept of literacy. Literacy was employed by PISA to signify a mastery of broad concepts applicable to life beyond the classroom (OECD 2001).

How can the development of ILSA for investigating educational knowledge be understood? This has been a long and ongoing process as society has changed into a meritocratic system. Some displacements in the reasoning of education have been necessary to change assessments into something more than students' scores in tests. Below, some of the displacements in the reasoning are elaborated on historically and discussed as raptures that made it possible to stage ILSA as intelligible for education and educational development on a large scale.

17.6 The Scientific Revolution

Has there been a scientific revolution? Revolutions are often understood as rapid occurrences in a short space of time. This is not the case when we talk about a scientific revolution—especially when discussing the evolution of science and how science became a dominant field of knowledge production. Normally when locating the development of modern science in time, we note that it happened somewhere around the sixteenth century and up to the early nineteenth century, which makes it an extremely slow revolution. Therefore, when the French historian Alexandre Koyré (1968) started to discuss the changes as a revolution in the 1930s and 1940s, he did it by saying that it was the most profound revolution achieved by the human mind since Greek antiquity. According to Koyré, the revolution was so profound that for centuries human culture was unable to grasp its bearing or meaning. The importance of scientific development can also be found in the work of the English historian Herbert Butterfield (1965) in the late 1940s, who states that the scientific revolution has outshone everything since the rise of Christianity and reduced both the Renaissance and the Reformation to mere episodes in history. He concludes that the scientific revolution is in fact the origin of modernity and modern mentality. The question of whether it was a revolution or not and whether it changed people's mentality and society is a matter for debate amongst historians. Instead of acknowledging the development as one long single event, historians instead talk about a diverse

array of cultural practices aimed at understanding, explaining and controlling the natural world, each of which had different characteristics and experienced different trajectories until they eventually started to be perceived as one single unit (for a discussion on these matters, see, e.g. Shapin 1996).

But why is the scientific revolution so important for understanding the construction of ILSA? The simple answer to this is because ILSA *is* science—although this *is* does not explain why ILSA are constructed as they are. For this, we have to begin by asking ourselves what science is and what the technologies developed within science are that make ILSA intelligible. This involves going back to the time when science was considered heretical: when religion, and to a lesser extent the monarch, was seen as the cultural and moral authority to decide what was true or false. Gradually, science occupied this position and instead of the church and the monarch defining ‘reality’, this was given to science. This started out with scientists like Galileo, Descartes, Huygens and Darwin, who began to question the Aristotelian cosmos sanctioned by the church. They did this by using a specific technology, which can be called a ‘mathematization’ of the study of motions (Shapin 1996). This mathematization of natural science became the method with highest legitimacy for investigating the natural order, which led to a dichotomy between what was considered subjective and objective. Here, objectivism evolved to the highest order in deciding what was true or false. Before this, the decision-making system had been perceived as far too subjective to have authority or legitimacy. Now, the mathematization method conducted by scientists was perceived as more objective and the ultimate authority for deciding falsehood or truth (Shapin 2010).

An early shift in this new way of using mathematization to say something about ‘reality’ is Marquis de Vauban’s suggestion to the French king, Louis XIV, of an annual census in 1686 for counting his subjects:

Would it not be a great satisfaction to the king to know at a designated moment every year the number of his subjects, in total & by region, with all the resources, wealth and poverty of each place; [the number] of his nobility and ecclesiastics of all kinds, of men of the robe, of Catholics and of those of the other religion, all separated according to the place of their residence? [...] [Would it not be] a useful and necessary pleasure for him to be able, in his own office, to review in an hour’s time the present and past condition of a great realm of which he is the head, and be able himself to know with certitude in what consists his grandeur, his wealth, and his strengths? (Cited from Scott 1998: 11)

What is shown here is a shift in the reasoning about governing to one in which data collected from the emerging scientific field is used to provide the monarch with important information. Before the scientific development of using numbers to describe the natural state, knowledge about the state had to be collected subjectively by the king or his administrators. In this new way of reasoning, numbers in terms of resources could be collected and calculated for different purposes. Scott (1998) states that certain forms of knowledge and control require a narrowing of vision and that censuses provide this. One advantage of a narrow view is that it brings certain aspects into sharp focus and helps to make sense of an otherwise complex and unwieldy reality. A further advantage is that it highlights some aspects of reality and

exaggerates their legitimacy, which in turn makes them even more susceptible to careful measurement and calculation. Consequently, what we measure is coupled with how we interpret ‘true’ reality. As such, what we choose to measure tends to constitute reality. However, quantifications and measurements of reality cannot just be seen as a social construction of reality, but can also be regarded as a specific technology of governing from a distance (cf. Porter 1995). A technology of numbers and quantifications minimized the need for intimate knowledge and personal trust, which had previously been regarded as necessary (Porter 1995). One reason for the development of governing at a distance is that quantifications are well suited for a communication that goes beyond the boundaries of the local community in that numbers are multilingual and can easily be adapted to different contexts.

The introduction of mathematization into the field of governing meant that the scientific revolution could also be discussed as a revolution in governing. The technologies that were developed and used in science also now interacted with society. Mathematization changed society in profound ways, for example, by making the connection between science and society institutionally stronger and changing people’s attitudes. Using science and numbers to govern became common sense. As such, ‘facts’ and ‘truths’ had to be based on science and science was usually described as resting on a strong objective foundation of quantifications and measurements. Overall, the experts who equated knowledge with authority and legitimacy changed with the scientific revolution—from the church and the monarch to scientists using a specific technology based on numbers.

17.7 Experts and Expertism

In order to fully understand the arguments and the ‘facts’ about ILSA, we need to acknowledge the changing roles of experts and how a specific discourse of expertism has developed in modernity. The term expert originates from the Latin *expertus*, the past participle of *experiri*—to try. If experts are defined in accordance with this archaic meaning, they will be seen as those who try to ‘convince’ others about alternative attitudes, ‘realities’ or common sense. As such, expertism can be understood as a social practice between different rival actors. Experts can thus be interpreted as agents of change (Popkewitz 1984) who identify the correct methods or procedures for getting other individuals to accept the call for change.

The role of experts is tightly interwoven with the rise of the scientific revolution as discussed previously. Before science developed into a hegemonic reasoning of how to gain and perceive knowledge, this position was occupied (at least in the West) by a sacred theory of knowledge in which God and his interpreters—the Church—had the exclusive right to define the only true knowledge. When nature no longer counts as God’s Truth, but instead has to be mathematized, the act of knowing is no longer seen as the imitation of otherworldly divinity. As such, the early development of natural science, with its mathematization of nature, led to a desacralized knowledge. The role of God and the Church as experts collapsed (Shapin

and Lawrence 1998) and instead scientists became the experts. With this profound change in who had the legitimacy to claim ‘facts’ and ‘truths’, the way opened for the construction of scientific methods and theories for change.

This changing perception of who the expert is can be regarded as one of the most important transformations into modernity. Before the scientific revolution, epistemological obstacles and raptures were managed by the Church in a discourse of divinity. After it, these obstacles and raptures were dealt with inside the field of science. Mathematization thus became the new divinity, this time within science, for making sense of nature. Consequently, mathematization had to be explained and developed for better accuracy and legitimacy. One of the responses to this was the science of statistics.

17.8 Understanding the World by Numbers

In order to understand the relevance of statistics for making ILSA intelligible, we need to be aware of a long-lasting philosophical controversy about the use of statistics. This controversy can be placed into two different categories depending on whether they concern measurement or the object itself. If the reality of the thing being measured is considered to be independent of the measuring process, the discussion hinges on the reliability of the measurement made. However, if the object to be measured is seen as a convention, discussions about the existence and definition of the object become necessary (Desrosières 1998). The tension between these two different points of view—one describing the objects to measure as real and the other describing objects as conventions—are important to bear in mind when talking about the development of ILSA. But it is not enough to say that ILSA considers the knowledge that is measured as real, even though this may be the case. Instead, we have to consider the interpretations of this knowledge as conventions (this is visible in OECD work on *indicators*) about what good education is or ought to be. As such, ILSA acknowledges an intercommunion between the objects measured as real and as conventions (*indicators* of something greater than just ‘knowledge’ or students’ performances). ILSA also makes statements about education at large and even future societal and economic developments.

The notions about statistics and ILSA are based on two different observations. The first is Durkheim’s (1894/1938) description of the central role of social science (in his case sociology) and the need to consider social facts as things. This can be read in two different ways: that ‘social facts *are* things’ or that ‘social facts must be treated *as if* they were things’ (cf. Desrosières 1998). Treating social facts *as if* they were things requires a specific scientific language—the language of statistics. The other observation is that statistical tools facilitate the discovery or creation of entities that support descriptions of the world and how we act in it. These objects are simultaneously treated both as real things and as constructed, but when they continue to be assembled and circulated they are cut off from their origins and treated as though they really *are* things (Desrosières 1998).

Against this background, the development of modern statistics from science and administrative practice makes sense when we consider science and administration as two different trajectories that eventually merged. In the administrative context, objects were mostly treated as things that could be measured for governing and administrative reasons. In the science context, the debate centred on how to treat objects methodologically and construct measurable objects. A specific discussion emerged about the differences between prescriptive and descriptive views of statistics. This discussion is especially relevant in the development of probability calculus, with its categorization of subjective and objective probability. Hacking (1975) characterizes these differences as either *epistemic* or *frequentist* probability. In the epistemic perspective, probability is characterized as a degree of belief. In a situation in which the future seems uncertain and our knowledge incomplete, probabilities provide us with rules of behaviour when information is scarce. On the other hand, the frequentist view emphasizes diversity and risk as part of nature and not as part of incomplete knowledge. According to this view, diversity and risk are external to mankind and, as such, part of the essence of things. Consequently, it falls to science to describe the frequencies observed. In both cases, statistics becomes a way of dealing with uncertainty. Here, the relationship between statistics and administrative practices becomes evident. The history of statistics is closely connected to the construction of the state (cf. Scott 1998) in which general forms are established—categories of equivalence—that change the singularities of individual situations into whole classes in a process of encoding. Defining classes of equivalence and encoding became central to the performance of statistical work (Desrosières 1998). The most important aspect of this process is that disparate things can be held together to generate a different order (Thévenot 1986).

In order to understand ILSA, we have to acknowledge the ambiguity of statistics as a history of probabilistic thinking and as an administrative technology for governing. In this, statistics strives towards knowledge, action and descriptive and prescriptive acts. Desrosières (1998) describes the two trajectories of statistics by saying that science and practice are linked, where the task is to objectify and making things that hold together, *'either because they are predictable or because, if unpredictable, their unpredictability can be mastered to some extent, thanks to the calculation of probability'* (ibid. p. 9). Managing uncertainty is the most important displacement that statistics can provide. When statistics are thought of in this way, ILSA can be interpreted as a way of acquiring knowledge and as leading to action, where the end results can be perceived as both descriptive and prescriptive. In this way, ILSA can be interpreted as a scientific and administrative activity. However, for this to happen, ILSA had to claim legitimacy from a historical tradition within science, namely comparative education.

17.9 The Claim and Construction of History

As indicated earlier, IEA was one of the first organizations to focus on large-scale assessments of students' achievements. The organization was created to conduct comparative educational studies in the late 1950s and staged its first assessment in the early 1960s (Pettersson 2014b). The first IEA study differed from other comparative education studies of the period in that it tried to introduce an empirical, number-based approach into a field dominated by cultural analysis (Foshay et al. 1962). Before the first IEA study was undertaken, education comparisons had been based on humanistic ideals. With the formation of IEA by scientists interested in psychometrics and educational outputs, the social sciences and behavioural science became the ideal on which comparative achievement tests rested (cf. Kazamias and Massialas 1982).

When comparative education is described as a scientific field, it is not clear what its methodological and theoretical roots are. When IEA introduced its first survey, it was made clear that it was a comparative study that challenged some of the epistemological beliefs in the field of comparative education. Instead of claiming heritage to the most common theoretical starting points within humanities, such as Constantin Ushinsky or Wilhelm Dilthey and their emphasis on cultural understanding, or *Verstehen* for performing comparative education (Epstein 2008a), it placed itself within the social sciences and used statistics to investigate the field. This challenged the fundamental beliefs within comparative education. To gain legitimacy, IEA claims to be the inheritor of a long-lasting tradition in comparative education stemming from the French empiricist Marc-Antoine Jullien, who in fact developed his ideas before Ushinsky and Dilthey (Epstein 2017). Jullien became a legitimacy claim for IEA in saying that its assessments were in fact part of comparative education and also the oldest tradition in this field.

But how was this made possible? In 1935, a newly discovered book written by Jullien in 1817 was donated to the International Bureau of Education in Geneva. The book was read by Pedro Roselló, who worked at the Bureau and who in 1943 published a text that presented Jullien as the father of comparative education (Roselló 1943). What Jullien tried to do in the early nineteenth century was to introduce positivism as the basis for all comparative studies. In this, numbers became objective facts that had to be gathered to verify educational claims. The first IEA study made it possible to connect to a long history of comparative studies based on numbers and to demonstrate the historical legitimacy that was so important in the 1950s and 1960s, especially in an American research context in which positivism gained important ground (cf. Anderson 1961). However, the presentation of Jullien as the founding father of comparative education was contested in the field of comparative education (e.g. García Garrido 1996; Noah and Eckstein 1969) and still today can lead to heated discussions about comparative education's roots and historical trajectories (e.g. Epstein 2008b). Nevertheless, Jullien's thinking was used to legitimize a study such as that undertaken by IEA as a science-driven endeavour and served to give it both a history and historical legitimacy. Another way of looking at

this problem is to suggest that IEA created something new in the history of comparative education. In short, it focused on an educational output that could be represented in numbers and created hierarchies of students, educational systems and nations based on these numbers, thereby creating a specific positivistic reasoning on education.

17.10 Governing Matter and Minds

Finally, we need to consider one last displacement to make ILSA fully intelligible, namely the changes in how matter and minds are thought to be governed. Foucault (2009) distinguishes between three different modalities in the history of power relations. First, we have the legal system, which defines itself through a normative code of what is considered legal and illegal. Second, the legal system establishes a system of disciplinary devices and techniques for the ordering, correction and modulation of subjects. Third, an apparatus of security is created. All these modalities coexist. Foucault identifies the origin of governmental technique in the Christian pastorate of ‘governing the souls’. This church hegemony started to be questioned with the scientific revolution and new forms of governing matter and minds sought. What came instead was the narrative of objectivity, where science, and especially the mathematization of observations, was considered as the highest order of things.

The language of science became the new *Lingua Tertii Imperii* (Klemperer 2011), in which ‘state simplifications’ (Scott 1998) determined how to govern with the opportunities provided by science, and especially the technology of mathematization. According to Scott, state simplifications have at least five characteristics. First, state simplifications are observations of aspects of social life that are of official interest. Second, they are mostly delivered in a written format and are often numerical and considered as documentary facts. Third, they are typically in the form of static facts, and fourth often aggregated facts in an impersonal assemblage of individual characteristics. Fifth, and finally, for most purposes, state officials need to group citizens in ways that permit them to make collective assessments. These aggregated facts, which can be presented as averages or distributions, must therefore be standardized facts. Even though the actual circumstances might be unique for individuals, it is the similarities and differences on a standardized scale or continuum that are of interest.

At least three steps are required for the use of these state simplifications. The first is the creation of common units of measurement or coding. The second step is that each item or instance in a category is counted and classified according to the new unit of assessment. The third step is the use of these classifications in various combinations to locate new illuminations of knowledge (Scott 1998). What is recognized in this discussion is the fact that science and state worked together to order society and people’s minds by using classifications that made a mathematization of social matters possible. When ILSA appeared, it was considered as an important

joint venture for societal, economic and scientific development. This gave ILSA the legitimacy to categorize individuals for governmental and scientific reasons.

17.11 ILSA as Encyclopaedic Knowledge

As stated earlier, Horkheimer and Adorno (1948) argue that civil society tends to make incommensurables comparable by reducing them to abstract quantities. Lyotard (1984) also maintains that these abstract quantities are—like data—transformed into an encyclopaedia of knowledge. This strategy is, to a large extent, based on a belief in numbers as more objective (Porter 1995). Porter illuminates that strict quantification through measurement, counting and calculation is one of the most credible strategies for perceiving objectivity—a strategy that has enjoyed widespread and growing authority for at least two centuries in, for example, science and the organization of the state. In education, this strategy was discussed in relation to reasoning linking political theories of government with notions of democracy and merit that began to appear in the nineteenth century about numbers providing narratives on equality and social progress. The emergence of merit tied to individual capabilities and qualities replaced manners and gentlemanly conduct as a way of thinking about truth and competency (Sapin 1994). However, reasoning about merit is not unique to modern society, but is embedded in different systems of reason that are not based on notions of individuality, agency and the temporality of progress. Historically, societies made trade-offs between merit, seniority, heritage and divinity's given orders when organizing the social order (Neves 2000). What the displacements presented earlier highlight is a notion of modernity that gives individuals their own history and the capacity to develop on merit. For instance, French philosophers talk about the need for an equal system of measurement for an equal society (see Popkewitz 2008; see Kett 2013). In this argument, we can begin to see the development of the idea that numbers are independent of human activity, but yet need to be applied in social arenas as procedures for correcting social wrongs and facilitating human equality in the organization of society.

Today, the use of numbers and statistical comparisons are taken for granted as ways of understanding how society grows and how schools respond to the social and political commitments associated with equality as expressed through ideologies of merit. Data from grades, examinations, student performances in national tests and regional and international knowledge assessments are aggregated and are now widely used to determine national results and make comparisons between them, thereby establishing a faith in numbers (Porter 1995) that affects both the reasoning and discussions about education. A way of presenting these results is through school or country rankings, which in turn often lead to discussions about reforms for achieving better performances.

How can the success of ILSA be explained today? To begin with, different aspects have contributed to making ILSA more relevant, most of which are embedded in an ideology of meritocracy. These include the changes that took place due to

the scientific revolution, the changing role of experts, the development of statistics as a way to giving knowledge legitimacy, stating legitimacy for ILSA by claiming an old history and a changing discourse on how to govern. All these aspects are important to understand why ILSA was perceived as more or less 'common sense' when introduced in the early 1960s. What is constructed in these historical trajectories is a specific narrative that describes how ILSA serves meritocracy as the dominant organizing principle. This narrative is dependent on the legitimacy of comparisons and a mathematization of humans and human actions for making sense of the world.

It is clear that as a representative of a specific and legitimate technology, ILSA is closely connected to state administration and science and is based on the presumption that society, its citizens and knowledge can be quantified by a system of meritocracy. Donna Haraway (1997) claims that science not only has social causes, but also causes society. As such, we could say that ILSA as a phenomenon partly constructs how we perceive knowledge in today's meritocratic society. We can also learn from Lyotard (1984), who maintains that when society changes, scientific knowledge also changes and can be understood as a kind of discourse. This discourse brings a certain logic, or reasoning, that determines what is accepted as 'knowledge statements', who is mandated to state them and why. We are in no position to claim that the knowledge measured by ILSA is the 'right knowledge', although we can raise questions about comparisons of ILSA knowledge and the mathematization and aggregation of data in the meritocratic system. The frequency and spread of ILSA results in contemporary policy indicates that ILSA is not only a part of how 'knowledge' is made and perceived, but also helps to construct how we perceive and understand "society".

This chapter describes how a public sphere is constructed when questions about social aspects and knowledge are debated publicly. This is made possible when the role of experts changes from being performed in closed societies by 'knighted' representatives who debate and construct knowledge into what is considered as more 'objective' formats and aggregate data as statistics. Statistics has made it possible for anyone to draw conclusions and make statements on the basis of the presented data. In fact, in modern times open and accessible data is appreciated as being necessary for democracy and enlightened debates (cf. Desrosières 1998) and as the basis of meritocracy. What is evident in this development is that the construction of a statistical system cannot be separated from the construction of equivalence that guarantees consistency and permanence in the political and scientific sphere, or from a social reasoning about the objects under discussion. As such, statistics create a common reference, or a common language, about objects that are highlighted as important phenomena. Statistics thus create societal and cognitive frames for what can be understood as 'social' or as 'knowledge'. Consequently, knowledge becomes something that can be measured and spoken about. The technology of ILSA is, to a large extent, based on this statistical language, where 'knowledge' is perceived as what is measured and calculated in the assessments. Consequently, ILSA illuminates some 'knowledge' and downplays others.

These two observations lead to our final conclusion. Encyclopaedia is etymologically derived from a Greek word meaning *complete instruction* or *complete knowledge*. This text both argues and criticizes that today ILSA is largely interpreted as the complete instruction or knowledge about education and plays a part in constructing education and ‘the world’. The knowledge derived from ILSA is not the only possible knowledge about education, although it can certainly appear to be if we only acknowledge international and national policies on education. By historicizing some of the trajectories in educational history, this chapter has shown how this was made possible and intelligible by specific displacements and raptures in some of the epistemological beliefs that are necessary for organizing society as a meritocratic state. As a consequence, ILSA has, to a large extent, been interpreted as the encyclopaedia of education due to the specific narrative that has been developed in the sphere of governing education, its comparative nature and a specific expertise in using the technology of mathematization embedded in meritocracy. This is true if we acknowledge the media and political coverage given to ILSA when it is presented in the international discourse on education.

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Chapter 18

Dangers of “Making Diversity Visible”: Historicizing Metrics of Science Achievement in U.S. Education Policy



Kathryn L. Kirchgaser

Widespread science and technological literacy will be critical to the economic well-being of the nation and the personal well-being of its citizens in the 21st century. Persistent science achievement gaps, however, imply that non-mainstream students will be increasingly disadvantaged in both job markets and civic decision-making.

—*Diversity and Equity in Science Education* (Lee & Buxton, 2010, p. 10)

[W]ithout the right skills, people will languish on the margins of society, technological progress will not translate into economic growth, and countries will not be able to compete in the global economy. It is simply not possible to develop inclusive policies and engage with all citizens if a lack of proficiency in basic skills prevents people from fully participating in society.

—*PISA 2015 Results: Excellence and Equity in Education* (Organization for Economic Cooperation and Development [OECD], 2016, p. 6)

Efforts to ensure that all citizens acquire a baseline of science literacy proliferate in international policy, research, and assessment programs alike. Those marked as “non-mainstream” or “on the margins” are asked to change themselves in particular ways in order to be recognized as having the right skills to fully participate in society. Science achievement scores operate as indicators of a student’s readiness to care for oneself and to contribute to one’s country as an informed, healthy, and productive citizen. Disaggregation of those scores permits claims that particular populations are disadvantaged by their own lack of science and technological

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literacy—presumed to threaten their “personal well-being,” prospects in “job markets,” and “civic decision-making.” This chapter explores how this notion of a demographic difference in science achievement became taken for granted as itself the inequality that must be remediated to allow for greater economic equality, political access, and social inclusion.

Recent calls for broadening participation in science, technology, engineering, and mathematics (STEM) education can be examined as part of a broader hope of the modern school to make the kind of person who is happier, healthier, and more productive (Diaz 2017; Ideland 2018; Miller 2017; Popkewitz 2008; Valero 2017; Zheng 2019). Transnational discourses in STEM education are not simply about improving learning outcomes or economic productivity; they also embody anxieties about the increasing cultural diversity ascribed to immigrants, refugees, and other marginalized groups (Bazzul 2014; Ideland and Malmberg 2014). This relationship is not new. For at least a century, science education has participated in making categories of self and Other through distinctions that divide scientific from superstitious and healthy from pathological, and which render citizenship into a moral and cultural qualification rather than an assumption (Kirchgasser 2017, 2018).

This chapter historically examines key conditions of possibility for dividing children by something called science achievement. Drawing on insights from science studies and curriculum studies, the argument explores how achievement data are not simply descriptions that represent a pre-existing reality with greater or less fidelity. Achievement metrics—assembled with policy objectives, curricular standards, psychological categories, and pedagogical techniques—act to shape that reality in multiple, indeterminate ways. This chapter analyzes present policy alongside past research in U.S. science education. This juxtaposition indicates that current efforts to include “diverse groups” by closing gaps in science achievement retain historical and cultural principles about the desired future citizen that unintentionally marginalize those projected as outside these norms. At stake is how the seemingly neutral categories, methods, and practices of education policy inadvertently generate new exclusions even as they seek to empower and include.

This chapter is organized as follows. As a starting point, I consider how the most recent U.S. science curriculum standards, called the Next Generation Science Standards (NGSS), respond to concerns that the prior standards had made diversity invisible and promoted a one-size-fits-all approach. I situate these concerns in relation to extant critiques of the role of achievement data in education policy, and outline the need for a new approach that treats science achievement as a historical object. Next, this chapter briefly examines how science achievement emerged in early twentieth-century U.S. science education research as a psychological category and a calculable attribute. Related techniques of research and pedagogy helped to make up different “kinds” (Hacking 2007) of science learners as needing different levels of science instruction. This chapter concludes by returning to the NGSS to consider key historical shifts in how science achievement operates to classify and order difference. The argument highlights limits and dangers in efforts to make diversity visible through science achievement. It also illustrates how science achievement itself acquires visibility through anxieties about the “nation’s increasingly diverse student population” (NGSS Lead States 2013a: 359).

18.1 Reevaluating the Premises of Invisibility and a “One-Size-Fits-All” Science Education

The recent U.S. Next Generation Science Standards (NGSS) aim to address inequity by “making diversity visible” (NGSS Lead States 2013a: 364). “Persistent achievement gaps” are taken to indicate that “non-dominant groups” have different learning needs and require instructional shifts (p. 359). The standards present case studies for seven categories of students. Contrasts appear in the pedagogical strategies recommended for some groups versus for others. The case studies for “economically disadvantaged students” and for “students from major racial and ethnic groups” recommend strategies to make science more accessible and concrete, such as multimodal representations to review below-grade-level material (NGSS Lead States 2013b, c). Meanwhile, those identified as gifted and talented are said to require instruction that is more open-ended and abstract, such as self-directed projects to explore above-grade-level material (NGSS Lead States 2013d). These contrasts beg the question: How did it become reasonable to advocate for distinct kinds of science education for socioeconomic, racial, and ethnic groups in the name of equity?

The NGSS’ framework (National Research Council 2012) cites critiques that prior standards had promoted a “dangerous discourse of invisibility” (Rodriguez 1997: 19) by failing to address critical issues of ethnicity, socioeconomic status, and gender. During the late 1990s, policy analyses outlined Science-for-All reforms as “egalitarian in theory,” but “difficult to actualize in practice” (Calabrese Barton 1998: 525). Accompanying these critiques were calls to close the research-practice gap by identifying specific strategies to support demographic groups historically overlooked in U.S. science education (Lee 1999). In other words, the concern was how to expand the “all” of Science-for-All to include students with disabilities (Mastropieri and Scruggs 1992), Mexican American students (Barton and Osborne 1995), bilingual students (Fradd and Lee 1995), girls (Shakeshaft 1995), and urban homeless children (Calabrese Barton 1998), among others. Such critiques emphasized that the problem did not lie with deficits within these groups, but with a curriculum that represented science in narrow, discriminatory ways and failed to respond to their ideas, interests, and everyday lives (see, e.g., Brickhouse 1994). A special issue on diversity in K-12 science education concluded in 2001 that, “It has become increasingly obvious that ‘science for all’ does not necessarily mean ‘one size fits all’” (Lynch 2001: 622).

Yet contrary to the premise of a “one size fits all” approach, U.S. science education has long distinguished between the curricula and pedagogies needed by some students versus by others. Efforts to differentiate science instruction for specific categories of students date back much further than 1990s discussions of multicultural science education (e.g., Atwater and Riley 1993; Hodson 1993) or the *Science for All Americans* report (American Association for the Advancement of Science [AAAS] 1990). A persistent preoccupation with difference is evident in titles of *Science Education* articles published over the years, such as, “The inner city child:

An attempt to improve his problem solving skills” (George and Dietz 1971), “Adapting science instruction in New York City junior high schools to the needs of Puerto Rican pupils” (Sanguinetti 1961), and “Teaching science to defective delinquents” (Schuyler 1940). While much has changed over the past century, the NGSS’ attempt to bring visibility to different groups of students and their science learning needs is not entirely new. Next, I consider the value of shifting the analytical focus from diverse groups to the “dividing practices” (Foucault 1994: 126) by which differences are seen and sorted in the classroom.

18.2 Not Just Rhetoric and Misrepresentation: Why Historicize the Making of Science-for-All

Science achievement data sit at the crux of nearly three decades of national and international reforms to promote Science-for-All (Hodson and Reid 1988; Linder et al. 2010; McEneaney 2003; Orion 2007). These initiatives have sought to raise the science achievement of all members of society, but particularly of those groups identified as historically underserved. The disaggregation of achievement data is envisioned to play a crucial role in revealing gaps, identifying effective strategies for specific demographic groups, and monitoring the success of pedagogical interventions. This logic, however, has come under sustained critique. While a review of this work is beyond the scope of this chapter, it is helpful to situate my approach in relation to work that interrogates the link presumed between achievement metrics and equity outcomes in terms of rhetoric and representation.

Prior education policy analyses have discussed: (1) Science-for-All reforms as *rhetoric*, and (2) the achievement gap as a *misrepresentation* of the capabilities and needs of diverse groups. Within science education, many have argued that the policy emphasis on Science-for-All is mere rhetoric that is not implemented in reality (e.g., Atwater 2000; Calabrese Barton 1998). Others have taken issue with the rhetorical justification of Science-for-All as the need to optimize human capital and economic competitiveness, rather than as a moral imperative (e.g., Basile and Lopez 2015; DeBoer 2013). Beyond science education, scholars have argued that the overwhelming focus on racial achievement gaps functions as a deficit lens that perpetuates stereotypes and detracts attention from systemic disparities (e.g., Gutiérrez 2008; Ladson-Billings 2006). Others have contended that education policies employ the rhetoric of data to lend a scientific veneer to achievement metrics, when in reality data-driven reforms tend to disadvantage marginalized groups and to compound inequity through educational triage (e.g., Booher-Jennings 2005; Horn et al. 2015; Sleeter 2007; Valenzuela 2005).

Critiques of policy-as-rhetoric raise concerns about how policy narratives elide, obscure, and exacerbate the educational exclusion of marginalized groups. However, there are several limits to analyses that presuppose a divide between policy rhetoric and classroom reality. First, the premise of a rhetoric/reality or text/context divide makes it more difficult to examine how techniques for seeing and ordering

difference circulate across domains of policy, research, and practice. Second, the tendency to interpret achievement discourse as a case of a broader ideology (e.g., neoliberalism, deficit thinking) omits scrutiny of the historical principles that made it possible to think about people as differing in science achievement in the first place. Third, the argument that achievement metrics misrepresent the real science capabilities and needs of marginalized populations risks reinscribing the notion that these groups constitute distinct types of learners whose capabilities and needs could be revealed objectively through the elimination of biased test items or through more culturally valid forms of assessment. Instead of debunking the science achievement gap as a false representation, a more pressing issue is to understand how it became a candidate for scientific truth or falsehood (Hacking 1992). In other words, how did science achievement itself become visible in national policy as a singular quality of mind, or as a metric of universal knowledge, practices, and reasoning that seems to vary in degree and appears to be distributed unequally between individuals, populations, and nations?

Rather than viewing the “all” of Science-for-All as an empty promise that is said but not done—or what Ahmed (2006) calls non-performative discourse—I am interested in how science education policy *does* perform, act, and impact educational inequalities. My research draws on scholarship from science studies and curriculum studies that examines how education policies comprise technologies that produce material effects. Popkewitz et al. (2018), for instance, discuss how benchmarks and notions of empirical evidence “perform as expectations about universal characteristics of society and people” that, ironically, generate difference through their statements of unity (p. 113). If I return to the opening epigraphs, the “all” of Science-for-All is not simply an egalitarian vision that is left incomplete or unfulfilled. Instead, that “all,” linked to frameworks of science literacy and metrics of science achievement, creates hierarchical distinctions through rules and standards of what each citizen must know and do. These universalized qualities come to appear necessary to secure one’s personal well-being, job market prospects, and civic decision-making. In so doing, the “all” inscribes differing needs onto the minds, attitudes, and home lives of students, which then appear to demand distinct forms of science instruction in response.

It is important to attend to this performative making of difference, because inclusion and exclusion are not just opposite phenomena (Popkewitz 2008). In a process called abjection (Butler 2011), those identified as needing to be included are classified as different from the norm (e.g., not-yet-scientifically-literate) and subjected to rescue and reform, where their inclusion depends on developing the qualities they are seen as lacking. Abjection directs attention to how scientific discourses and tools operate to “overrepresent” (Wynter 2003: 260) a historically peculiar and culturally particular genre of human thought and activity (e.g., the “basic skills” measured by PISA) as a generic baseline for human existence and a prerequisite for equal participation in society.

The point of historicizing science achievement, then, is not to debunk it as illusion or ideology. Instead of subtracting reality from achievement, I will attempt to add reality back to it by analyzing its historical shifts, political entanglements, and

material agency (Latour 2004: 232). Science achievement only appears as a scientific object through what Latour (2000) calls a historical network of production. Rather than seeking its definitive origins, I highlight a few of the countless events out of which science achievement formed as an unstable assembly of various strategies of knowledge production, social administration, and pedagogical intervention. Notions of science achievement, ability, potential, and talent have materialized in mutating configurations over the past century. While some appear today as timeless cognitive factors, each emerged at a particular moment in response to a perceived social problem that its measurement was intended to solve. As a history of the present (Foucault 1977), this chapter explores two such moments—the emergence of standardized tests of science ability and achievement in the 1920s, and the current linkage of achievement test data to issues of equity and diversity in the 2010s. My starting points of analysis include the science education journal, *General Science Quarterly* (*GSQ*), published from 1916 to 1929, and the Next Generation Science Standards (NGSS) and their accompanying documents.

This chapter is not concerned with the internal validity or reliability of test items used to assess science achievement, nor with the authors' intentions. Rather, I examine the scientific and schooling practices that make certain differences knowable and actionable in the science classroom. Prior to the 1920s, for instance, it was not possible to make scientific claims about students' capacities for science learning. The subsequent century has witnessed a proliferation of instruments for assessing how schoolchildren measure up to standards codified as science, and later for ranking demographic groups and nations. Over the past century in the United States, techniques for conceptualizing and measuring science achievement have acquired, discarded, and reformed linkages to other elements, including evolutionary theories, psychological categories, narratives of American exceptionalism, Piagetian stage theories, political discourses of accessibility, and protocols of data-driven decision-making. These partial substitutions and rearrangements make it hard to recognize that, while many elements have changed, today's network of "science achievement" still generates distinctions in both individualizing and racializing terms.

18.3 The Making of Science Achievement as a Measurable Attitude of the Mind (Early 1900s)

Denaturalizing notions of science achievement requires briefly returning to a moment before it became natural to think of children's minds as possessing distinct amounts of scientific understanding. In the mid nineteenth-century United States, truth about human difference was established through religious doctrines about the soul. Societal problems were attributed to cities as sites of moral contagion where virtues dissipated and vices spread (Boyer 1978). Physiology courses in the common schools sought to combat the vice of ignorance, fostering moral character through teaching obedience to God's laws in nature (Mann 1867). By the early

twentieth century, the explicit aims of school science began shifting from moral character to a mental attitude.

The notion of science as a mental quality of the child emerged at a moment in the United States when hopes of scientific progress were coupled with fears of racial degeneration. In the early 1900s, popular narratives of national identity highlighted America’s inventive genius and technological progress as the height of modern civilization (Nye 1999). The social sciences brought principles of scientific planning to problems of human improvement. Of utmost concern was the Social Question, which attributed the perceived moral disorder of U.S. cities to the Great Migration and to the immigration of “foreigners” from southern and eastern Europe (Popkewitz 2008). Societal problems were imputed to the mental habits of these racialized populations, and mass schooling took on importance as a site of their rescue and reform. Hopes were placed in education, and the new educational sciences, to “Americanize the masses” by fostering desired characteristics among future citizens. Given the central role of science in concurrent narratives of American exceptionalism, science education could see itself as having a special role in transforming immigrants of “unscientific mind” (Woodhull 1918: 3) into “straight-thinking Americans” (Whitman 1921: 88).

A “scientific attitude of mind” emerged as a new object of empirical investigation through psychological techniques (Barber 1917: 108). Yet in the shift from soul to mind, moralizing judgments of social behavior did not disappear. Bad moral habits, such as poor hygiene, were still attributed to the ignorance of the urban masses. However, this ignorance was now construed not as a spiritual vice but as a product of the mental immaturity of immigrants, such as “inferior southern European stocks” (Grier 1920: 47). The new goal of developing scientific attitudes sought to bring moral order to these pupils’ daily lives as they learned to follow scientific recommendations concerning physical, mental, and sexual hygiene.

Reconfiguring science as a mental trait relied upon and reiterated long-circulating assumptions of “lower races” as less capable of scientific reason. Drawing on recapitulation theory, scientific thinking was argued to be the upper anchor of human evolution, exemplified by the “best American stocks” (Grier 1920: 47), and was defined and discriminated against the unsystematized thinking attributed to the “savage” (Dewey 1910: 16). Yet the new notion of science—as superior reasoning, civilized living, and national belonging—was not part of the curriculum in existing courses. Psychological theories suggested that the rapid expansion of public schooling had yielded populations of pupils for whom existing forms of science teaching were inadequate. According to Thorndike’s Law of Readiness, demanding that all students take physics and chemistry would be an attempt “to force nature,” forgetting that the requisite attitude develops “relatively late in youthful minds as in that of the race” (Woodhull 1918: 49).

This “recapitulatory point of view” made it possible to reorganize science education as a differentiated, developmental progression (Downing 1925: 74). At the top of the trajectory was knowledge of physics and chemistry—now designated as “specialized sciences” suitable only for the few judged capable of quantitative abstractions. At the bottom of the developmental trajectory, a new course called general

science would help “immature minds” acquire the scientific attitude seen as a prerequisite for more advanced, abstract thinking. Recapitulatory principles thus provided the grounds for defining scientific minds in opposition to allegedly immature minds and for differentiating the curriculum for these new categories of pupils. In the historical shift from religious moralization to psychological normalization, then, what got constituted as a “scientific attitude” continued to embody moral principles about who the child was and needed to become, and who was construed as furthest from these norms.

So far, I have considered the emergence of a notion of science as a mental quality differentiating kinds of people. But how did it become a quantifiable attribute—not merely inferred, but empirically measured? Around the same time as the general science course was spreading across the country, the intelligence quotient (IQ) test and other psychological instruments began entering U.S. schools. It soon became “self-evident that the first thing one must do is to find out the exact mental equipment of his [*sic*] students” (Woodhull 1918: 83). In part, this demand was tied to the perception that those entering high schools were no longer homogeneous, but “a mongrel lot of pupils of all races” whose foundations for science learning had to be assessed rather than assumed (p. 224). Like their overall mental capacity, pupils’ abilities for learning science were assumed to vary by “sex, age, environment, [and] heredity” (Hunter 1920: 385). The standardized tests developed over the next decade would materialize science ability as a measurable attribute that varied in degrees from a norm and could be used to compare distinct categories of pupils.

In these early standardized science tests, what became codified as science ability or achievement (terms often used interchangeably) was not simply a subset of the natural sciences, but the mental qualities presumed lacking in the masses. Sociological studies of the time defined scientific thinking in opposition to the “folk beliefs” of the “Southern Negro” (Puckett 1926), and the “superstitions” of the “Italian” and “Jew” (Jones 1904). Sociologists classified particular religious practices, such as the hanging of rosary beads or of the *mezuzah*, as “superstition,” and identified adherents of Roman Catholicism and Judaism as less science-minded than those of Protestantism, which was upheld as a model of independent thinking (i.e., for purportedly having emancipated itself from the constricts of Old World religious traditions) (p. 77). Since general science aimed to free American citizens from superstition (Whitman 1921), early tests of science ability generated questions to assess “common superstitions or beliefs arrived at through unscientific thinking” (Maxwell 1920: 444). For instance, one question on a test of scientific reasoning asked whether the date Friday the thirteenth was unlucky (p. 449)—a belief classified by sociologists of the era as a “Negro Taboo” (Puckett 1926: xii). Part of what the tests constituted as science ability, then, was pupils’ rejection of beliefs presumed to distinguish racialized Others from allegedly rational Americans.

The theoretical object of science ability was reconfigured further through the operation of its measurement, such that—like intelligence (Danziger 1997)—science ability became that which science achievement tests measured. The instruments made it possible to conceptualize each mind as having a stable degree of future capacity for science learning. Early science ability tests were designed to

distribute individuals along a bell curve, keeping only those items that “differentiate bright pupils from dull ones” (Whitman 1920c: 50). The validity of the test could only be secured through an alignment with pre-existing appraisals of what constituted a mature scientific thinker, which required pre-determining which pupils were bright and which were dull. Such judgments were supplied by calibrating the tests against either IQ tests (Dvorak 1926) or teachers’ grades and rankings (Ruch 1920). In particular, test designers asked teachers to rank their students by qualities such as “diligence, classroom behavior, personality of the pupil, punctiliousness with assignments, neatness, spontaneity, and many others” (p. 17). Such categories were not neutral but embodied specific social values and norms. Consider “spontaneity,” a positive intellectual quality presumed to distinguish the American both from the “Frenchman” characterized as “bound by tradition, inert and pessimistic” (Downing 1925: 174), and also from the random impulsivity imputed to the “savage” (Dewey 1910: 14). Cultural norms of belief, conduct, and expression came not only to serve as universal indicators of scientific ability, but also as signs of American exceptionalism, expressed as “our own buoyancy, alertness, and ability to tackle forcefully and efficiently the changing problems” of society (Downing 1925: 174). The external validity of standardized science tests, like other psychological instruments (Rose 1985), relied upon registering as subnormal those individuals who had already been designated as problematic by institutions like schooling.

Stabilizing science content on standardized tests spatialized difference along a numerical scale. In generalizing a particular performance as a personal attribute, the notion of scientific thinking—already racialized through recapitulation theory, and culturally specified through sociological studies of foreign superstitions—became quantifiable. Statistical techniques sorted individual scores by pre-determined categories of difference (e.g., sex, heredity, environment), and demographic averages became inscribed as personal traits. This statistical style of reasoning made available new types of truth claims, such as test data suggesting that girls have more difficulty acquiring science knowledge than boys (Dvorak 1926), or that students from “typical Chicago high schools” do not grasp fundamental science concepts (Downing 1925). Through the rendering of such claims as empirical “findings,” numerical data reordered pupils and populations, marking their distance from social norms that were, in the process, abstracted and universalized as science knowledge and conceptual understanding.

At the same, the standardized test did not enjoy universal acclaim. Some scholars in *GSQ* expressed dissatisfaction that the standardized test revealed only the most “mechanical aspects” of science learning (Kilpatrick 1921: 281). Additional techniques would be necessary to capture the “wider gamut of achievement” in terms of the ideals and habits associated with a scientific attitude of mind (p. 282). Besides science achievement tests, evidence of a scientific attitude could also be displayed through inventories of science-related interests (Lyon 1918), questionnaires of what children collected and why (Hunter 1919), home surveys of fire hazards (Whitman 1920a), and neighborhood surveys of sanitary conditions in local grocery stores and meat shops (Bayer and Clark 1920; Andress and Evans 1925). Embedded in these survey techniques were categories, guidelines, and normalized values that would

allow teachers (and pupils themselves) to identify “both the defects and the good features of both home and community,” so that those defects could “naturally” give rise to project work and classroom discussions (Whitman 1920b: 30). In this way, what scholars identified as the “danger” of the standardized test—as an overly narrow measure of science achievement (Kilpatrick 1921: 282)—could be mitigated through its linkage with other emerging practices of research and pedagogy.

Moreover, the numerical precision of standardized tests afforded a “more secure basis” for distributing pupils into different levels of science education (Ruch 1923: 196). They offered a single measurement that could be used to index past educational experiences, indicate present levels of proficiency, and predict degrees of readiness to access a particular educational objective or pedagogical approach. By claiming to reveal natural differences in a mechanical way, the tests promised an objective basis for segregating “low grade mental types” (Hunter 1920: 382), differentiating science courses into fast- and slow-moving sections (Ruch 1923), and guiding students toward vocations for which they appeared mentally fit (Whitman 1922). The tests’ numerical precision made it possible to classify students into a growing range of course levels and sections, whose pacing and pedagogical approaches could be calibrated along a clear, linear (or, recapitulatory) progression.

Through the concrete practices of designing and validating the first standardized science tests, a transformation can be observed. Extant theories of racialized differences in group beliefs, behaviors, and IQ became sedimented in tests of science ability. The tests assessed the degree to which an individual adopted information codified as scientific, adapted to the social norms of the classroom (e.g., spontaneity), and rejected those views labeled as superstitious (e.g., Friday the 13th). By calibrating standardized tests to teachers’ assessment of pupils’ personalities, specific cultural values gained momentary visibility in methodological discussions before becoming embedded and effaced through statistical procedures of quantification and correlation. What became codified as “science achievement” had less to do with the natural sciences than with social science practices of classifying mental qualities of populations to guide their proper education, Americanization, and sexual differentiation. The data generated by these assessments effectively produced the differences that they purported to reveal. Fabricated distinctions between biological races and sociological types became tethered to and reconfigured as a split between scientific and unscientific minds—one that could now be measured as degrees of science ability or achievement.

The standardized test, coupled with the developmental scale and survey techniques, offered a new mode of producing and sorting difference in the science classroom. In projecting science ability as a set of universal ideals, difference could only be seen as deviation from norms of sound reasoning, correct knowledge, and healthy habits. Standardized science tests made new differences visible, calculable, and governable, ordering individual pupils and subpopulations along an evolutionary trajectory and matching them with distinct levels of instruction. In the presumed symmetry between psychological and civilizational development, science achievement operated as a “dense transfer point for relations of power” (Foucault 1990:

103)—a site for ranking individual merit, delineating national belonging, and regulating racialized groups deemed unready for democratic participation.

It is significant that notions and metrics of science achievement were assembled at a particular historical moment, one in which today’s concepts of equity and diversity did not exist. As discussed, the explicit goals of early twentieth-century U.S. science education included sorting the leaders from the led, separating out the feeble-minded, teaching girls their place in the domestic sphere, and assimilating immigrant groups (e.g., Hunter 1920). This history matters, because theories and techniques invented in the early 1900s have become blackboxed (Latour 1999) and continue to circulate in modified forms within science classrooms today.

The next section outlines a few shifts that appear to separate current U.S. science education policy reforms from the early 1900s premise of a natural hierarchy of science ability. Gradually, terms like intelligence, science capacity, and aptitude were dropped in favor of achievement. Over decades, equity-oriented concerns arose in terms of the underrepresentation of women and racial minorities in scientific fields (e.g., Crowley 1977). National policy reports began to argue that racial and gender gaps in performance were not signs of an inevitable evolutionary order (as presupposed earlier), but rather evidence of unjust disparities facing groups that had “largely been bypassed in science and mathematics education” (AAAS 1990: xviii). Despite this important shift, many of the early twentieth-century practices that projected a demographic difference in science achievement had, by the mid- to late-twentieth century, been reconfigured but not replaced.

18.4 The Next Generation of Science Achievement (Early 2000s)

The recent U.S. Next Generation Science Standards (NGSS) formulate equity as a technical problem of “making diversity visible” to differentiate instruction for various demographic groups (NGSS Lead States 2013a: 364). The historical analysis above has indicated that making diversity visible is not a neutral, passive reading of social reality. Embodied in school science are cultural norms that are productive of new distinctions. Setting aside the question of authors’ intentions, I focus here on the classificatory techniques that make certain differences appear as objective entities to which teachers must respond—given in current policy as the “learning needs of the nation’s increasingly diverse student population” (p. 359). Following Latour (2004), rather than subtracting reality from science achievement, the purpose of historicizing is to add reality back to it by identifying tethers once linked to its historical network of production. This section will highlight a few clear differences in how science achievement appears in the NGSS versus in *General Science Quarterly* (*GSQ*), which can be thought of as discarded tethers. It also highlights a few resemblances in how science achievement is seen and ordered. Since this is not an evolutionary history, these resemblances may not be continuities, but rather “partial reinscriptions, modified displacements, and amplified recuperations” (Stoler 2016:

27). The point is to open up this taken-for-granted category of science achievement for further investigation so as to ask what it “*authorizes*, and what precisely it excludes or forecloses” (Butler 1993: 7, emphasis in original). By recognizing science achievement as a historical artifact, it no longer appears natural or inevitable.

Unlike *GSQ*, the NGSS reject hereditary notions of mental ability and refute deficit stereotypes by asserting the capability of all students to learn science. “[R]eports continually highlight that when provided with equitable learning opportunities, students from diverse backgrounds are capable of engaging in scientific practices and constructing meaning” (NGSS Lead States 2013a: 359). The absolutist language of incapacity is out. This is also the case in international assessment programs. Science literacy—in contrast with older notions of science ability, talent, or potential—is viewed “not as an attribute that a student has or does not have, but as a set of knowledge and skills that can be acquired to a greater or lesser extent” (OECD 2016: 1). These statements suggest that the field has dismissed past definitions of science achievement as one fixed trait in favor of science achievement as a malleable, multidimensional set of understandings and practices that everyone can (and therefore, should) be supported to acquire.

Nevertheless, current notions of science achievement still produce distinctions. Although today’s science assessments may be understood as indexing multiple dimensions of science-related knowledge, practices, and dispositions, they continue to register proficiency in science as a single number. Similar to *GSQ*, the NGSS take standardized tests as objective measures of something called scientific thinking. Psychometric techniques transfigure the heterogeneity of the scientific disciplines into “science” as a universalized quality of mind—one that differs in degree and appears unevenly distributed in the population. Achievement data array individuals and demographic groups onto a numerical scale assumed to reveal relative amounts of scientific knowledge, conceptual understanding, and reasoning. Statistical techniques, combined with populational reasoning, make it possible to identify a person or a group of people as high-achieving or as underperforming in science. Science achievement continues to be posited as a feature of the mind that operates as a “potential site of unity” (Baker 2013: 38)—one that divides and subjects some as not-yet-qualified for inclusion with in that unity.

In spite of the repudiation of deficit thinking, what persists is talk of *relative* differences in students’ current capability, or readiness, to access a certain level of cognitive demand:

[A]chievement gaps in science and other key academic indicators among demographic subgroups have persisted . . . As these new standards are cognitively demanding, teachers must make instructional shifts to enable all students to be college and career ready . . . [and] to ensure that the NGSS are accessible to all students. (NGSS Lead States 2013a: 359)

In name, the focus has shifted from a problem within the child (e.g., cognitive deficit) to a problem with the curriculum (e.g., cognitive demand) (see Brickhouse 1994). Yet because raising cognitive demand is presented as key to national competitiveness, the problem is not ultimately located in the curriculum, but in the mismatch posited between subpopulations of students and the (necessarily) demanding curriculum.

Moreover, the historical accumulation of data points reinscribes distinctions between non-dominant groups that “traditionally struggled to demonstrate mastery [on] less demanding standards” versus “those who can and should surpass the NGSS” (NGSS Lead States 2013a: 359). Trends in achievement data make it appear sensible to promote a “two-pronged approach” to K-12 science education (p. 370), where “low-performing at-risk groups” must be elevated to the baseline of the standards through pedagogies that make science more accessible and “concrete” (NGSS Lead States 2013c: 6), while “our future innovators” need access to science instruction that is more advanced and “abstract” (NGSS Lead States 2013d: 2). Data fabricate a division between certain racial and ethnic groups as requiring interventions to meet the standards, and their unmarked peers as deserving opportunities to exceed this baseline. In effect, rather than critiquing tracking as an equity problem, the stratification of science coursework becomes naturalized as a reasonable response to the distinct achievement, or readiness, ascribed to racialized groups.

As in *GSQ*, the NGSS operate within a developmental logic that divides children and curricula into different kinds ordered along a hierarchical scale. The case studies that accompany the NGSS depict “gifted and talented students” as above grade level and “economically disadvantaged students” as below grade level (NGSS Lead States 2013b, d). Being located above or below on this scale is then linked to different curricular content and pedagogies. The gifted and talented are matched with more abstract, open-ended, and complex pedagogies (NGSS Lead States 2013d). In contrast, economically disadvantaged students and major racial and ethnic groups are said to require pedagogies that connect science to the physical dimensions and tangible problems of their local community (NGSS Lead States 2013b, c).

Of course, there are crucial differences between the developmental scales in *GSQ* and the NGSS. Rather than presuming racial categories to differ by nature as in recapitulation theory, distinctions now appear through numerical data taken to indicate that not all are ready for the same level of instruction. Moreover, the politics have changed. Whereas *GSQ*’s locally-focused project method was discussed as Americanizing the unscientific masses, the NGSS’ place-based, project-based approach is offered as empowering for students from historically underserved groups. Yet, in this effort to empower, local and applied aspects of science are nevertheless positioned as compensatory strategies for making science accessible to traditionally underperforming groups, and as contrasting with the pedagogies designated for children labeled as gifted and talented. A danger is that pedagogies intended to close achievement gaps may inadvertently reiterate a century-old pattern in the United States—treating those racialized as non-White as not-yet-ready for the more “abstract” instruction designated for those seen as “potential scientists” or “future innovators.”

Another important difference from the past is the repudiation of claims of cultural superiority linked to evolutionary stages of civilization that were widely taken for granted in the early twentieth-century U.S. social sciences. Whereas *GSQ* scholars relied on sociological studies to identify the superstitions of less evolved groups, the NGSS reject the tendency to focus on the deficits of “non-dominant” groups and instead call for valuing these students’ diverse backgrounds. Nonetheless, because

the standards conceptualize science as a universal set of concepts and practices derived from the disciplines, not all backgrounds become equally valued. Specifically, the NGSS contrast the “academic backgrounds” of dominant groups with the “cultural knowledge” of non-dominant groups (NGSS Lead States 2013a: 359), where only the latter must be filtered for connections and disconnections with science (p. 364). Here, the standards have already stabilized the science from which (dis)connections can be seen, and elevated the backgrounds of dominant groups as more closely corresponding with a universal science and thus as rising above culture (i.e., as academic rather than cultural). Despite calls to value cultural diversity, the NGSS articulate the purpose of school science as supporting non-dominant groups to “transition from their naïve conceptions of the world to more scientifically based conceptions” (p. 363). As Brown (2006) observes, where once culture was elevated as the unique property of civilized societies (versus primitive groups cast as closer to nature), today those marked as “cultural” are typically those populations positioned as furthest behind or as yet to enter the global knowledge economy. This dangerous logic presumes that while a cosmopolitan “we” may have culture, culture *has* “them” (p. 151).

The past is not repeated in the present, but new assemblies of tools and theories continue to codify science as a universal ideal that generates cultural distinctions, dividing students and the science instruction they appear to demand. At issue is how it became possible to conceive of human beings as different types of thinkers, of students as more or less ready for a particular “level” of thought, and of science instruction as existing in discrete but developmental forms (i.e., concrete to abstract) that correspond to these types of minds. These notions are not natural, but emerge from a network of heterogeneous theories and techniques, and the epistemic, political, and moral principles they carry. To reduce all of these elements to a psychologized problem of deficit thinking within the mind of the teacher would be to obscure how the ordering strategy functions. As comparative distinctions, science ability and achievement depend on the production of abnormal Others as lacking in ability or behind in achievement.

Consequently, a paradox appears in current efforts to promote equity through the paradigm of achievement. As measures of science achievement interact with developmental trajectories of school science, they fabricate different “kinds” of students and match them with hierarchical levels of science education. Passed down through the decades of the twentieth century, the psychological construct of science achievement has already expunged the dynamic variation within and between the sciences, as well as erased any obvious trace of the sociological taxonomies, racial and religious hierarchies, and cultural normativities that once assembled to stabilize science achievement as both a criterion of the ideal American citizen and a universal standard of comparison. Numerical distance from that fabricated and universalized ideal would become one of the primary differences inscribed and reinscribed in science classrooms, research studies, and policy reports; in effect, it would become the “diversity” made most visible.

This chapter highlights how diversity is not simply the recognition of representational categories of people. Rather, there is a need to examine more closely how

central characteristics of U.S. science education—its goal of fostering independent thought and individual agency through scientific methods, its egalitarian emphasis on making science relevant to populations’ varied needs, and its pragmatic focus on designing solutions to local community problems—emerged in relation to concerns about the nature of the child, reason, and democracy that were entangled historically with racializing distinctions. This analytical approach calls attention to the limits of current discourses of “making diversity visible” in understanding the paradoxes of inclusion and exclusion in schooling today.

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Chapter 19

Imagining School as Standards-Driven and Students as Career-Ready!

A Comparative Genealogy of US Federal and European Transnational Turns in Education Policy



John Benedicto Krejsler

19.1 Introduction

This chapter maps in a comparative perspective the complex genealogies of the US federal and the European transnational turns in school and education policy. It maps how particular truth regimes were gradually produced which discursively linked school and education to the performance of the economy by means of discursive imaginaries and associated ideas about optimization of human capital, whereby discourse about the purpose of school and what counts as public good were fundamentally transformed. It identifies the driving discursive force at work on both sides of the Atlantic Ocean in the form of a so-called Knowledge Economy discourse that motivates by telling the story about fierce global competition where a nation will fall behind if it does not optimize its human capital, that is, produce “employable” or “career-ready” subjects for the economy (Apple 2006; Bridges and McLaughlin 1994; Cerny and Evans 1999; Cuban and Shippis 2000; Drucker 1969; Gibbons et al. 1994; Henry et al. 2001; Keating et al. 2013; Larner and Walters 2004; Meyer and Benavot 2013; OECD 1996; Rizvi and Lingard 2010). Consequently, imaginaries about school, education, and their purpose are increasingly negotiated according to a format of comparability in the United States as well as in Europe, as national economies become increasingly interconnected in so-called global Knowledge Economies (e.g., Furlong et al. 2009a; Grossman 2003; Popkewitz 1998, 2008). This format has brought about a proliferation of power technologies of parameters and procedures by which these two globally dominant regions mutually compare and rank their constituent member subjects, that is, states and nation states, in order to determine who is in the lead and who is lagging behind, and what ideas of public

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good are at play in these processes (Cerny and Evans 1999; Larner and Walters 2004; Lawn 2013; McGuinn 2006; Rizvi and Lingard 2010).

This chapter aims at identifying the genealogies of these new relationships between federal and state levels in the United States as well as the only recently created relationships between transnational organizations (the Organisation of Economic Co-operation and Development [OECD] and European Union [EU] in particular) and European nation states in relation to school and education. In both cases, the federal and transnational levels have traditionally mainly dealt with economic cooperation, whereas school and education have until recently been issues that were taken care of in the United States by the state and in Europe at nation state level (Department 2009; Diamantopoulou 2003; Henry et al. 2001; Keating et al. 2013; Nóvoa and Lawn 2002; Rhodes 2012).

One could question with ample justification, however, whether you can compare two such disparate entities like the United States and the European Union or Europe (e.g., Diamantopoulou 2003). The United States is a nation consisting of a federation of states, where much responsibility is located at the state level, including school and education. Europe consists of a large number of big and small nations representing a complex patchwork of different languages, histories, and national identities. Nonetheless, most of the nation states are organized together in the European Union. The EU is not a government, but an intergovernmental set of institutions, strong in economic matters but relatively weak in matters of school and education. This makes the relation between central and local levels of education policy difficult to compare. Furthermore, there are basic differences in the political and administrative regulation of education and schooling in the United States and in Europe. In the case of the United States school (K-12¹) and education policy has been since the 1960s a narrative about increasing federal influence that implies considerable reference to the constitution and traditions of American government as a continuous struggle between federal and state interests (e.g., Department 2009; Manna 2010; McGuinn 2006; Rhodes 2012). Nonetheless, the discursive processes that states and federal authorities engage in in the United States, between compelling and voluntary elements that eventually combine in deepening collaborations, resemble similar developments between nation states and transnational levels in European school and education policy as European national education policy formats are increasingly, since the 1990s, negotiated in transnational forums such as the OECD, EU, and the Bologna Process (advancing the European Higher Education Area) (e.g., Hopmann 2008; Krejsler et al. 2012, 2014; Lawn and Grek 2012; Nóvoa and Lawn 2002). Another argument for comparing the United States and Europe (or,

¹In the United States school debate and policy discourse is usually framed within the term K-12, that is, primary, lower, and upper secondary or high school. In a European context, however, similar debates and discourse are usually confined to primary and lower secondary school, that is, grades 1 through 9. Upper secondary or high school is usually debated in a discursive category of its own. I shall refer to the European debate with the terms comprehensive school or primary and lower secondary school when referring to grades 1 through 9, or in a few cases as K-12 when upper secondary/high school is included.

in our case, the European Union) is that the developments on both sides of the Atlantic Ocean have been closely intertwined since the 18th century; they both have developed liberal democracies and overwhelmingly support pluralism and market economies. European integration would have been hard to understand without the genealogy of American-led collaboration since World War 2 in the forms of the Marshall Plan, NATO and so forth. Both regions are of comparable size in terms of GDP and populations, with the United States having a population of 328 million and a GDP of US\$20.5 trillion, and the European Union a population of 445 million (before Brexit) and a GDP of US\$18.8 trillion (data.worldbank.org/indicators (2019)). So, in recognizing the obvious differences in institutional setup and levels of integration between the United States and Europe and the ensuing limitations to any direct comparisons, I shall pursue the thesis that considerable insight can be gained by opposing the genealogies of two dominant global regions where regulation, policy-making, and implementation in education are characterized by shifting balances between US federal and state levels and between European transnational and nation state levels in continuously deepening collaborations.

19.2 Theoretical Approach

This chapter draws on the work of Michel Foucault and post-Foucauldian traditions (Dean 1999, 2007; Foucault 1971; Pereyra and Franklin 2014; Popkewitz 1998, 2008; Popkewitz and Brennan 1998). The point of departure is the issue which Foucault called a *problematic*, that is, a way of making the present in its taken-for-granted status problematic by asking questions such as: How has it come about that researchers, policy-makers, and practitioners today make school and education problematic in terms of “comparability,” “standards-based education,” “excellence,” “evidence,” and so forth?

Inspired by Nietzsche, Foucault wanted to state that any history will always be a *history of the present* in the sense that it more or less explicitly looks to the past from the mess of current problems in order to make sense of this mess. What we do when we make genealogies is trying to map the trajectories of developments to their particular beginnings in order to make sense of how they were woven together from each their disconnected location, in order to produce the current situation as something that emerges as self-evident. This is also a method of alienating oneself from the self-evident taken-for-granted-ness that gives to the present its convincing objective character which often, on closer inspection, appears to be the result of myriads of previously non-interrelated events and developments which, over time, were tied together to produce this new dominant present.

Within a Foucauldian approach, one is also interested in making the taken for granted character of dominant regimes of knowledge problematic by demonstrating how they are turned into truth regimes by making some ways of speaking and acting possible while excluding others. As any other discursive regime, the school and education policy regimes explored in this chapter are also constituted as patterns of interconnected statements that reciprocally refer to one another, thereby continually reinforcing

the totality of the discourse (Foucault 1971). The immanent logic thus construed forms strategic spaces wherein a number of different subject positions emerge to be occupied by willing individuals. Obviously, one must subject one's self to the discursive regime in question in order to be included as a legitimate subject within this regime.

Foucault argued that a discourse must be measured by the extent to which it matches and mirrors the formation of dominant and less dominant discourses that set the boundaries and the truth regime for how individuals can think and act at a given time and in a given space in history (Foucault 1993, 1997). Foucault thus considered it his task to chart, via a genealogical method, the topological contours of the battlefields within different discursive fields (e.g., the fields of madness, reason, imprisonment, subjectivity, sexuality, and so forth).

I also draw inspiration from Mitchell Dean's sociological approach to governmentality analyses and its framing of four elements that can fruitfully be applied to analyses of practice regimes (Dean 1999), *in casu* the making of school and education policy: A practice regime implies (1) certain ways of making a particular field *visible* and making it an object of knowledge. This is closely intertwined with (2) particular ways of conceptualizing and agreeing upon procedures for arriving at *the proper production of truths*. From this follows (3) *forms of power*, that is, certain mechanisms and technologies to act upon, intervene in, and govern the field in question, in order to ensure that (4) fitting *subject positions* are construed as the obvious ways for individuals to conceive of legitimate subjectivities.

Thus, my focus is to identify, at a policy level, how the field of school and education is made visible as a particular practice regime in two different global regions. I shall demonstrate how wide-reaching policy processes produce a proliferating canopy of truths and political technologies serving to frame the conduct of subjects involved in school and teacher education and their self-governance. Within a Foucauldian framework, political technologies signify procedures that "...advance by taking what is essentially a political problem, removing it from the realm of political discourse, and recasting it in the neutral language of science" (Dreyfus and Rabinow 1982: 196).

19.3 From Federal "No-Go" over *Civil Rights* to *Standards-Based Education* Discourse (1950s–2000)

After World War 2, K-12 and education policy discourse in the United States have experienced a number of defining transformations in terms of increased federal influence that would, previously, hardly have been imaginable. A civil rights genealogical trajectory dating back to the 1960s and a standards-based education trajectory dating back to the 1980s have, in particular, contributed to producing a policy practice regime that has reshuffled how education policy discourse can be exercised (DeBray-Pelot and McGuinn 2009; Department 2009; Hamilton et al. 2008; Hess and McGuinn 2002; McGuinn 2006; Owens 2015; Patterson 2001; Rhodes 2012; Sunderman 2009).

The US constitution as the key discursive document in legal terms does not mention school and education. And what is not mentioned in the constitution is, by the

logic of the constitution, the prerogatives of the states and, in this case, local educational authorities. Basic schooling as well as teacher and higher education discourse have historically emerged and developed at local levels according to local needs (Jeynes 2007). This is why today we still see considerable differences in how schooling and teacher education are handled in different states. K-12 schooling gets the bulk of its funding from local property taxes and from state level, which often levels out between rich and poor districts, and very little from the federal level.² Consequently, discursive forces advocating that purpose and content should be determined at local and state levels are strong. In recent decades, however, the federal level has become increasingly active as the collective subject position for setting the agenda for K-12, teacher education, and educational research (Department 2009; U. S. D. O. Education 2004, 2011; Manna 2010; Sunderman 2009).

Until the 1960s, federal involvement in education was negligible (Jeynes 2007). The Northwest Ordinance 1787 and the Morill Land Grants 1863 and 1890 mainly had to do with providing land for education. In 1867, a non-cabinet level Office of Education was established, but with meager manning, funding, and powers. The Servicemen's Readjustment Act (GI Bill) of 1944 provided funding for veterans who pursued a degree at a university or college, and so on. When, in 1957, the Soviet Union put a satellite in orbit around the globe, a loud discursive event was produced, the Sputnik Shock, which contributed at a national level to stirring up fear and concern that the United States was falling behind the Soviet Union technologically. As a collateral effect, this produced at a federal level some interest in education, support for students learning foreign languages and so forth, which was enshrined in the National Defense Education Act (NDEA) in 1958.

The big leap, however, and the launch pad for what was to develop into a dominant *civil rights discourse* and spur a hitherto unseen inroad for federal influence on school and teacher education, came during the office of President Lyndon B. Johnson and his Great Society and War on Poverty programs (Patterson 2001; Silver and Silver 1991). In 1965, the Elementary and Secondary Education Act (ESEA) was passed together with associated laws like the Economic Opportunity Act (1964) which brought about federal programs like Head Start to assist low-income families and their children in the pre-school to school transition and the like. ESEA was instrumental to encouraging desegregation discourse by producing arguments and political technologies to supporting ethnic minorities—African Americans in particular, but also disabled and less privileged students. ESEA programs such as Title I and others supported schools with high percentages of poor children by demanding and aiding with federal legal authority and funding a truth regime that facilitated discourse about desegregation, alleviation of poverty, affirmative action, and so forth. This happened in the wake of the landmark *Brown vs. Board of Education* (1954) decision by the US Supreme Court,

²In the 2004–2005 school year, 83 cents out of every dollar spent on education were estimated to come from the state and local levels (45.6% from state funds and 37.1% from local governments). The federal government's share was 8.3%. The remaining 8.9% came from private sources, primarily for private schools. This division of support remains consistent with the historical reliance on local control of schools. <http://www2.ed.gov/about/overview/fed/10facts/index.html?exp>.

ruling that segregation by race in schools was unconstitutional (Patterson 2001). Desegregation discourse was slow to dislocate deeply engrained race and ethnic separation discourse. By 1965, however, ESEA and the years of civil rights events leading up to it had set off an avalanche of events and discourse to eventually produce a new truth regime on how race, ethnicity and equity could be legitimately talked about. A civil rights and desegregation discourse had evolved into a dominant policy discourse that would, with ESEA as a decisive discursive monument, have a lasting influence on schooling, teacher education, and educational research. It would also, which was hard to predict at the time, gradually move federal agenda-setting powers from the aid of marginalized groups to entering the mainstream debate and organization of K-12 education as such. It was not, however, until 1979, by the end of the Carter administration, that federal education discourse would become institutionalized to the level of establishing, for the first time ever, a federal Department of Education at cabinet level which would in time come to constitute a strong collective subject advancing federal influence on education (McGuinn 2006; Rhodes 2012).

The next big leap in federal influence would gain momentum from 1983 and eventually contribute to producing the *standards-based education discourse*, which was to dislocate and finally subsume the civil rights and desegregation discourse. This new amalgamated discourse would produce a flow of dominant signifiers such as “excellence,” “high-stakes testing,” and “accountability,” while simultaneously legitimating such discourse by civil rights talk about “closing the achievement/opportunity gap” in order that “no child should be left behind” (Hamilton et al. 2008; Rhodes 2012). This trend still holds as the dominant truth regime in education today. The iconic discursive event that would spark off this turn happened during the Ronald Reagan administration, which was otherwise suspicious of what was called “the federal infringements upon states” rights. The event was triggered by the proverbial report *A Nation at Risk: The imperative for educational reform* (1983), which was published by the presidential National Commission for Excellence in Education. The report and the event it triggered would become iconic in heralding another round of “Sputnik Shock”-like deep concern that American students were falling behind their peers in an increasing number of competing countries. The report staged the crisis by referring to declining results in SAT testing (Scholastic Aptitude Test) from 1963 until 1980, as well as declining NAEP results. NAEP (the National Assessment of Educational Progress) is a national political technology, today known as the Nation’s Report Card, which can arguably be seen as an early US forerunner to the Program for International Student Assessment (PISA), the Trends in Mathematics and Science Study (TIMSS), and the Progress in Reading Literacy Study (PIRLS)³ (Kim et al. 2009; NCES 2004; Peterson et al. 2011). It was put on track and tested in 1969 for

³These are political technologies in the form of international comparative surveys:

PISA (the Program for International Student Assessment) is a triennial survey test administered by the OECD to 9th grade students in literacy, math and science versions.

IEA (the International Association for Evaluation of Achievement in Education) administers TIMSS (Trends in Mathematics and Science Study) and PIRLS (Progress in Reading Literacy Study) to 4th and 8th grade students.

the first time, and has since then documented students' literacy, mathematics, and science results. By discursively linking economic growth and school results with reference to these comparative testing surveys, the report could produce fear and concern that the United States was losing its leading role in the world, this time with Japan and Germany as the upcoming contenders.

This chain of events made *A Nation at Risk* the nodal point for building up a coalition of dominant subject positions of very different orientations in relation to K-12, teacher education, and educational research in the United States (McGuinn 2006; Rhodes 2012; Sunderman 2009; Vinovskis 2009). From surprisingly different discursive positions, ranging from conservative to business and liberal civil rights orientations, this coalition began promoting debate on excellence in education that would amalgamate into a hitherto unseen national public discursive platform for debating school, teacher quality, and evidence about what works in education. This process served to pave the way for a stronger federal role in K-12 and teacher education policy to an extent that had never been seen in a US context. Entrepreneurial and big business subject position holders gathered in forums demanding a comprehensive national effort to ensure excellence in school achievements that would ensure a workforce qualified for a global knowledge economy fearing Japanese as well as German efficiency and innovation. A bipartisan group of southern governors, including Bill Clinton (D-Arkansas) and the two future secretaries of education, Lamar Alexander (R-Tennessee) and Richard W. Riley (D-South Carolina), and others, saw an overhaul of an outdated education system as essential to boosting weak southern state economies. Civil rights and liberal subject positions, the latter gathering around Massachusetts democratic senator Ted Kennedy and others, would join this debate on standards, tests, and accountability as ways to further more systematically efforts to deal with equity and social justice issues, achievement, and opportunity gaps. From a conservative discursive position, important subject holders like Diane Ravitch (key advisor under G.H.W. Bush and Clinton administrations) and Chester Finn (president of the influential Fordham Foundation think tank) established the Educational Excellence Network in the early 1980s, which argued strongly for a standards and accountability-based education system on a strong content and curriculum oriented base (Finn Jr. 1993). A similar conservative discourse supported the excellence argument by bemoaning the dropping standards, blaming the laissez-faire pedagogy and indifference to quality that had supposedly come with the permissive multicultural stance that anything goes. According to this position, this was undermining attachment to the Western and European roots that America had developed from, which was in turn connected to a *canon* of quality in literature, science, and the arts. This argument was most explicitly put forth by Allan Bloom in his bestseller *The Closing of the American Mind* (Bloom 1987).

Altogether this situation was new in that it gathered republicans and democrats, conservatives and liberals, business people, and others around building an excellence and standards-based education discourse from widely different points of departure. However, there were strong forces and discursive positions opposing this change in the education policy agenda. Conservative forces feared infringement upon the rights of states from federal levels in Washington, with strong references

to constitutional discourse. Initially, the position of teacher unions (the National Education Association and the American Federation of Teachers) expressed concerns that nonprofessional subject positions would capture the agenda for what should happen in schools at local levels and impose standards and accountability measures that would make teachers' work harder without involving the teachers.

This emerging standards-based education discourse gradually gained momentum (Brown 2015; Finn Jr. 1993; Hamilton et al. 2008; Kosar 2005), and education increasingly became an issue at a presidential level. Republican George H.W. Bush and Lamar Alexander, his secretary of education, pushed forward *America 2000: A national education strategy*, a discursive monument that was explicitly presented as a national strategy, rather than a federal program, in order not to stir up conservative resistance. It was the result of an unprecedented summit on education which took place in Charlottesville, Virginia, in 1989, involving the nation's state governors and other key national subjects. According to Heise, this constituted a landmark in the federalization of US education policy (Heise 1994). Lamar Alexander formulated the initiative by means of four discursive objectives, which he labeled "four giant train stations": (1) better and more accountable schools, (2) a new generation of American schools, (3) a nation of students continuing to learn throughout our lives, and (4) communities where learning can happen. It consisted of six key goals to be pursued over the course of the 9 years leading up to the turn of the millennium.

Democratic President Bill Clinton and his secretary of education, Richard W. Riley, who were both among the original Southern States governors to push this excellence and standards-based discursive platform, elaborated a similar initiative, however, more ambitious in detail and funding. In 1994, Clinton thus signed the *Goals 2000: Educate America Act*, labeled as a standards-based outcome reform which was by many seen as a major inroad for federalization of education policy and a predecessor to *The No Child Left Behind Act* to come (Heise 1994). During the 1990s, the surging global knowledge economy discourse and its cries for highly qualified students and updated teachers were, furthermore, boosted by the IT and computer revolution which produced an increasing awareness of an incipient, radically different economy of knowledge that was inherently connected to education and lifelong learning perspectives. Resonating well with the *A Nation at Risk* discourse, the Clinton administration thus established the *Technology Literacy Challenge Fund (TLCF)* which introduced competitive grants as a political technology to encourage teachers and schools to become proficient regarding the so-called information superhighway.

19.4 The Pre-Millennium Shifts in European Developments (1945–1999)

Altogether, post-World War 2 collaboration among Western European countries tended to focus upon largely US-initiated measures to ensure economic growth. It took off with the US-funded Marshall Plan and the associated Organization for European Economic Co-Operation (OEEC) in 1948 in the wake of massive World

War 2 destruction. During the same period, the European Coal and Steel Community (1951) evolved, and was with the Treaty of Rome (1957) linked to the European Economic Community (EEC) and the European Atomic Energy Community (1958), which put on rails, what would eventually develop into the European Union (1993), which today comprises 27 nation states (after Brexit). These developments took place under the US-led security umbrella of the North Atlantic Treaty Organization (NATO), which was established in 1949 in order to deal with the security challenge to Western Europe posed by the Soviet Union and its allies in the Warsaw Pact (1955) during what was to be known as the Cold War.

In a European context, school and education at all levels remained, with a few exceptions, an exclusively national matter up until around 2000. Only then did knowledge economy and lifelong learning discourses finally enter education policy discourse at a transnational level emphatically with political technologies such as PISA, TIMSS, and PIRLS, and emerging new truth regimes such as the Bologna Process and the EU Lisbon Agenda, as key movers (Hopmann 2008; Krejsler et al. 2014, 2017; Nóvoa and Lawn 2002). The only transnational organization that had until then had any durable and measurable interest in education was UNESCO, which dealt more with development in third-world countries than among industrialized countries. However, IEA (the International Association for the Evaluation of Achievement in Education) did start developing international comparative surveys in the 1950s and gradually developed—among other achievements—what would from 2001 become PIRLS (Progress in Reading Literacy Study) and from 1995 TIMSS (Trends in Mathematics and Science Study) to measure literacy, numeracy, and science knowledge and skills among 4th and 8th grade students in an increasing number of industrialized countries, initially mainly in Western Europe.

In order to understand today's dominant regime of truth regarding education in Europe, it is therefore imperative to understand how the discursive link between the economy and education was established on a larger scale. And here the OECD plays a key role. In 1961, the OEEC transformed into the OECD, which has since then been a key player in producing dominant discourse and policy advice to member states about economic development. OECD's interest in *human capital* and its impact on economic well-being and development of member states gained impetus in the 1960s and led to the 1969 establishment of the Center for Educational Research and Innovation (CERI) with support from the Ford and Shell foundations (Henry et al. 2001). The OECD, however, did not succeed in spreading this discourse to national member states until the 1980s, which obviously coincided with the release of the ominous *A Nation at Risk Report* in 1983. The cocktail of economic crisis and the fear that nations would not succeed in supplying sufficiently skilled manpower to national economies spurred interest in education. This took place at a time when market-oriented, neo-liberal economic discourse was on the rise with the republican Reagan administration in the United States (1981–1989) and the conservative Margaret Thatcher government in the UK (1979–1991), which obviously involved OECD discourse as well. New Public Management reforms of the public sectors in member states flourished, praising public solutions that drew inspiration from the private sector.

These reforms discursively staged public services in quasi-market conditions as organizations that mutually competed to ensure efficiency by effective use of limited public resources under strict accountability to consumers, as defined by the state (Hood 1995; Sahlin-Andersson 2001). Ideas like giving parents vouchers in the hope that they would use them to choose the best schools and hereby intensify competition gained ground. But that would only be possible if schools and their students' achievement were made comparable, so parents would have an informed overview from which to choose. The idea gained ground that even national economies would prosper if comparative surveys could show whose education systems had most quality and were most efficient. All these factors and many more coincided to increase American pressure in particular on the OECD to develop a comparative survey to determine which nations succeed or fail, in order to be able to identify where to look for inspiration to enhance one's national education system and create better results (e.g., Lawn 2013: 22). This demand met resistance among European collaboration partners within the OECD, but eventually prevailed, and in 2000 the Program for International Student Assessment (PISA) was launched, which was, subsequently and ironically, to become the most agenda-setting transnational discursive technology for national European education policies, but not for US policies (Hopmann 2008; Meyer and Beavot 2013).

In 1996, the OECD published the report on *Knowledge Economies*, and in 2001 it finally established an independent Directorate of Education, which iconically underlined how much education had risen on the agenda for securing successful economies among global Knowledge Economies (Henry et al. 2001; OECD 1996).

In an EU context—similarly to the US constitution—education falls under the discursive principle of subsidiarity as stipulated by the Maastricht treaty of 1992. The principle of subsidiarity signifies that competence is delegated to the level closest to actual practice, which typically means the nation state level or, in some cases, like that of Germany, at the level of the Bundesländer. This applies in particular to K-12 education, which is typically closely associated with nation-building and national identity discourses that easily stir up strong sensitivities in many European nation states. The EU Maastricht treaty, however, simultaneously performs a breakthrough for EU influence on education agendas by means of a particular discursive maneuver which opened up for the EU commission to maintain a coordinating role between member states concerning national education policy issues, especially those that were deemed key issues in supporting economic growth in the form of qualifying labor and similar issues (EC 1992). Linking education to economic concerns thus opened up for making education a transnational concern, which makes it the predecessor to the game-changing EU Lisbon Declaration of 2000 and the ensuing Lisbon Agenda that extol a discourse “to make Europe the most dynamic and competitive among global knowledge economies by 2010” (EC 2000). The EU commission was thus to become after the turn of the millennium the key discursive operator, in collaboration with the OECD and the Bologna Process, in merging policy discourse about economic growth and education by means of knowledge economy, human capital, and lifelong learning discourse (Nóvoa and Lawn 2002).

In conclusion, transnational impact on European national school and education policy discourse was rarely seen before the turn of the millennium. Nonetheless, there were strong seminal signs of changes to come which bore striking resemblances to the developments that had begun in the United States in the wake of *A Nation at Risk* in particular.

19.5 No Child Left Behind: The Climax of a Truth Regime

On January 8, 2002, the *No Child Left Behind Act of 2001 (NCLB)* was signed by President George W. Bush, inaugurating the climax and institutionalization of the standards-based education discourse. Its full title is “*An act to close the achievement gap with accountability, flexibility, and choice, so that no child is left behind.*” It was a reauthorization of the [Elementary and Secondary Education Act](#), which included [Title I](#), the government’s flagship aid program for disadvantaged students (U. S. D. O. Education 2002; Hess and Petrilli 2006). The Act was first and foremost an argument for a [standards-based education reform](#) (Hamilton et al. 2008). As a political technology, it was based on framing a particular discourse about how setting high standards and establishing measurable [goals](#) can improve student outcomes in reading and math. The bill was passed in the [US Congress with overwhelming bipartisan support: 384 in favor versus 45 nays in the House of Representatives; 91 in favor versus 8 nays in the senate](#). It was proposed by President Bush and coauthored by highly influential congressional subject holders, Representatives: [John Boehner](#) (R-OH) (House Republican Minority Leader or Speaker from 2006–2015) and [George Miller](#) (D-CA), and Senators: [Judd Gregg](#) (R-NH) and [Edward Kennedy](#) (D-MA), who represented the span from very conservative to very liberal discursive positions.

NCLB installed a comprehensive truth regime with a panoply of political technologies that would transform K-12 policy discourse in terms of intensifying federal powers considerably in relation to states and local authorities, in terms of school organization and evaluation procedures, and in terms of how you can produce knowledge about what works (Apple 2006; Department 2009; U. S. D. O. Education 2004, 2011; Hess and Petrilli 2006; McGuinn 2005, 2010).

NCLB as a master discourse with bipartisan federal backing demanded all public schools that received federal funding to administer annually a statewide [standardized test](#) to all students, implying that all students must take the same test under the same conditions. Schools that received Title I funding had to make [Adequate Yearly Progress](#) (AYP) in test scores, that is, students at a given grade level between three and eight had to do better on standardized tests than the previous year’s students at the same grade level. If a school performed poorly, it would become subject to a series of increasingly tough measures that would, it was presumed in the discourse, ensure improvement.

The motivation or punishment measured out by the discourse were as follows: schools missing AYP for 2 consecutive years were publicly labeled “in need of improvement” and had to develop a 2-year improvement plan for the subject the

school was not teaching well. In the meantime, students were given the option to transfer to other schools within the school district. Upon 3 years of missing AYP, the school would be obliged to offer supplemental education services and free tutoring to students in need. Upon 4 consecutive years of missing AYP, the school would be labeled as requiring “corrective action,” which would typically include replacement of staff, introduction of a new curriculum, or extending the amount of time students spend at school. Upon 5 consecutive years of missing AYP, a restructuring of the entire school would be planned, which would be executed in case the school would fail to comply with AYP for a sixth consecutive year. Such a restructuring would include closing down the school, turning the school into a [charter school](#), hiring a private company to run the school, or asking the state office of education to run the school directly.

According to this truth regime, it was claimed that analyses of state accountability systems that were in place before NCLB indicated that outcomes accountability led to faster growth in achievement for the states that introduced such systems (Hamilton et al. 2008). The direct analysis of state test scores before and after enactment of NCLB also supported its positive impact according to the criteria for success set by this discursive regime. A primary criticism from counter-discourses asserted, however, that NCLB reduced effective instruction and student learning by causing states to lower achievement goals and motivate teachers to “teach to the test,” that is, it would encourage teachers to teach narrow subsets of skills which the school believed would increase test performance, rather than focusing on deeper understanding of the overall curriculum. Because each state could produce its own standardized tests, a state would be able to make its statewide tests easier to increase scores (Berliner 2009; Labaree 2014; Nichols and Berliner 2007; Ravitch 2010). The NCLB truth regime and its proponents claimed, nonetheless, that standards-based goals and increased accountability would help teachers and schools to realize more systematically the significance of their functioning within the school system and hereby help students, communities, and ultimately the nation. Other discursive positions, however, claimed that punishment and corrective action would only demotivate schools and, by implication, undermine student performance, and even exacerbate inequality (Apple 2006; Dee and Jacob 2010; Hursh 2007).

In summary, NCLB constituted a dominant truth regime that came about as the genealogical trajectories of numerous influential discourses, representing business, conservatives and liberals, were woven together to become a dominant nodal point which reconfigured into a coalition the bulk of key legal, market and political discursive players in society. NCLB could be seen as the climax of the standards-based education discourse that was initiated in the wake of the *A Nation at Risk* report in 1983. Further, NCLB could be seen as a game-changer in the sense that it had become institutionalized in policy and school practice, whereas previously it was more of a policy discourse of intent. And, in our context, NCLB—by using the legal frame of ESEA—expanded the federal role in public education through the introduction of annual testing, criteria for adequate academic progress and teacher qualifications, report cards, and funding changes (DeBray-Pelot and McGuinn 2009; U. S. D. O. Education 2004, 2011; Manna 2010; McGuinn 2006; Rhodes 2012; Vinovskis 2009).

19.6 NCLB in a European Perspective

In the European arena, there was nothing that vaguely resembled the level of institutionalization into a dominant truth regime which NCLB had achieved, with the aid of ESEA funding, in terms of making a federal policy initiative set the dominant discourse and reform agenda widely at a structural level for school and teacher education in states and local school districts. Nonetheless, the post-millennium tendencies have become similar in Europe in the sense that national education policy discourse is increasingly negotiated in transnational forums where political technologies, in the forms of comparative surveys and standards, are established to increasingly make national systems comparable and demand increased compliance (Krejsler et al. 2014, 2017; Meyer and Benavot 2013; Nóvoa and Lawn 2002).

In primary and lower secondary school policy discourse, PISA, TIMSS, and PIRLS surveys (see foot note 2) have increasingly become the political technologies by which educational success in literacy, numeracy and science is measured and ranked. They set the discursive criteria for what counts as truth when it comes to establishing whether a European nation state's primary and lower secondary school system is successful or not, with considerable policy consequences in their wake, including recurring pressure demanding school and teacher education reform. The creation of a comprehensive European truth regime on education has furthermore been accelerated by the growing volumes of additional political technologies, including regularly published statistics and comparative overviews from the OECD, Eurostat and Eurydice, for example, OECD publications such as *Education at a Glance*, OECD country reports, OECD's Teaching and Learning International Survey (TALIS), and so forth (e.g., Antunes 2006; Henry et al. 2001; Lawn 2013; Lawn and Grek 2012).

One of these OECD country reports, commissioned by the Danish government in 2003, could serve as an illustrative example of a discursive technology employed to ensure compliance with a new regime, that is, the standards-based education regime. It was commissioned to assess the evaluation culture in Danish comprehensive school (grades 1 through 9). Upon comments from the Danish government, the OECD group, led by leading school effectiveness representatives, issued its report with the main conclusion that Danish school lacked a systematic evaluation culture, with probable losses in student performance as a likely consequence. In the wake of this country report and a simultaneous one from the Danish Evaluation Institute, a number of sweeping reforms of comprehensive school were undertaken: mandatory student plans were introduced and ten national test were introduced in a school where testing had hitherto been taboo; municipalities were required to work out annual quality reports in response to OECD critique of having been too permissive in their monitoring of Danish schools; and, inevitably, a reform of an allegedly insufficient teacher education was announced (Ekholm et al. 2004; Krejsler et al. 2017). The proliferation of such technologies and the multitude of measures would eventually ensure that national school and teacher education regimes became increasingly integrated under the umbrella of transnational productions of truth.

The 2000 EU Lisbon declaration stands as a key discursive document and event in reinforcing relations between economy and education. Here, EU's heads of government pledged to make Europe the most competitive and dynamic region among global Knowledge Economies by 2010. The solemn inauguration of this truth regime was forcefully followed up by the accompanying Lisbon Agenda defining EU policy guidelines, and an increased focus on the importance of education for ensuring economic growth follows (Colignon et al. 2005; EC 2000, 2010; Lawn and Lingard 2002). "Competences," "lifelong learning," and "employability" became dominant discursive signifiers to permeate national strategies for successful economies, all the way down to reformed descriptions of education courses at all levels.

Parallel to this development, the Bologna Process was put on track as another formidable truth regime in 2000 as a larger European process that would eventually comprise 48 countries. The Bologna Process solemnly pledged to establish a *European Higher Education Area* (EHEA) by 2010 (Keeling 2006). It would comprise higher education, including teacher education, and be aimed at making European higher education systems comparable and establishing common standards that would enable student and teacher mobility across borders and different education systems. Formally and abiding by dominant discourses of democracy, freedom and diversity, the Bologna process would claim to be all voluntary. Nonetheless, it had grown by 2009 to become a formidable discursive giant administering a truth regime with an increasingly compelling set of political technologies. This included ten performance indicators and a score card system ranking the compliance of participating countries, including the European Credit Transfer System (ECTS), mutual recognition of diplomas, a bachelor-master-PhD format (3 + 2 + 3), quality assurance formats concerning higher education, including teacher education, across borders, and so forth (Krejsler et al. 2012).

Further integration took place as the two dominant and giant truth regimes of the EU and the Bologna Process would increasingly integrate their truth production and political technologies in order to optimize education in what was called a Lifelong Learning perspective (Keeling 2006). As the EU developed its political technology of the European Qualification Framework (EQF), which was later duplicated into National Qualification Frameworks (NQF), lifelong learning from pre-K up to PhD was partitioned into 8 levels, where the Bologna Process bachelor-master-PhD cycles were integrated as levels 6, 7, and 8 (EQF 2008). This all served to make participating countries and the education systems ever more comparable and skills—or rather competences—ever more transferable.

19.7 Evidence: A New Regime for Producing Knowledge About What Works

The *No Child Left Behind Act*, understood as a practice regime, has changed what counts as acceptable truth production about school and student performance. This discursive turn was accompanied by a considerable tightening of the educational

research that could obtain federal funding. It even impacted state funding of educational research, if that funding was associated with additional federal funding. The NCLB act thus instituted a discourse according to which schools would rely on [scientifically based research](#) for teaching programs and methods. The act defined scientifically based research as “research that involves the application of rigorous, systematic, and objective procedures to obtain reliable and valid knowledge relevant to education activities and programs” (U. S. D. O. Education 2002; Hess and Petrilli 2006; Zucker 2004). This meant scientifically based research results in “replicable and applicable findings” from research that would use appropriate methods to generate persuasive, empirical conclusions. Non-scientific methods—in this understanding—would include following tradition, personal preferences, and non-scientific research, such as research based on [case studies](#), [ethnographies](#), personal interviews, [discourse analysis](#), [grounded theory](#), [action research](#), and other forms of [qualitative research](#). The latter would no longer be seen to form an acceptable basis for making decisions about teaching children under the act. What counted as scientific and legitimate within this truth regime would be narrowed down to research that qualified according to neo-positivist or similar, so-called evidence-based or -informed methodological approaches to researching what works in education, with the Randomized Controlled Trial, statistical meta-analyses and systematic reviews as methodological ideals (Darling-Hammond and Youngs 2002; Hamilton et al. 2008; Krejlsler 2013, 2017; Pawson 2006; Prewitt et al. 2012; Zucker 2004). This would put immense pressure on school and teacher education programs across the nation to adopt a new truth regime and its associated political technologies, in order to remain legitimate in federal, state and public eyes (U. S. D. O. Education 2004, 2011; Hargreaves 2007; McGuinn 2010; Policy 2003).

This groundbreaking change in what counted as rigorous educational research, worthy of public support, became institutionalized in the Institute of Education Sciences (IES). IES was created as part of the [Education Sciences Reform Act of 2002](#) as the primary [research](#) body of the [United States Department of Education](#). It was divided into four major research and statistics centers: (1) *The National Center for Education Statistics* (NCES), which conducts the [National Assessment of Educational Progress](#) (NAEP: The Nation’s Report Card); (2) *The National Center for Education Research* (NCER); (3) *The National Center for Education Evaluation and Regional Assistance* (NCEE), which operates the [National Library of Education](#), the [Education Resources Information Center](#) (ERIC) and the What Works Clearinghouse (WWC); and (4) the *National Center for Special Education Research* (NCSER).

The IES would propagate this new truth regime by conducting and supporting [randomized controlled trials](#) in schools (RCT) to find practical answers to questions such as whether some textbooks were better than others and whether certain [professional development](#) programs for teachers would improve student achievement. The What Works Clearinghouse, which was established with generous federal funding and scientific support from the hardcore evidence-oriented Campbell Collaboration, was given the central task of producing the systematic reviews of research about What Works according to a neo-positivist evidence methodological approach (Boruch and Herman 2007; Krejlsler 2013).

This policy discourse was backed up by a proliferation of powerful policy-sensitive bodies, including *the Coalition for Evidence-Based Policy*, which gathers in its advisory board key figures from the Campbell Collaboration, for instance Robert Boruch (<http://coalition4evidence.org/>). The Coalition describes itself as “a nonprofit, nonpartisan organization, whose mission is to increase government effectiveness through the use of rigorous evidence about ‘what works’”. Since 2001, the Coalition has worked closely together with US Congressional and Executive Branch officials who have advanced evidence-based reforms in US social programs, which have been enacted into law and policy. The Coalition claims to have “no affiliation with any programs or program models, and no financial interest in the policy ideas it supports, enabling it to serve as an independent, objective source of expertise to government officials on evidence-based policy.” However, such mission statements contradict the close association with a particular regime of knowledge that implies narrow understandings of objectivity, rigor, methodology, and so forth and are conveniently compliant with the dominant understandings of rigorous policy-relevant science at the policy and decision-making levels.

19.8 Evidence Regimes in a European Context

In a European education policy context, the evidence and what works truth regime never acquired a uniform and thorough implementation, in terms of institutionalization, that is comparable to the American developments. On the other hand, the OECD and IEA surveys certainly do follow an evidence for what works format that privileges large quantitative surveys which adhere to a neo-positivistic and school effectiveness paradigm and does not leave much room for other paradigms, in particular qualitative or post-positivist research paradigms (Burns and Schuller 2007b; Hammersley 2007; Oakley 2007; OECD 2007). Further, at national levels, a number of evidence discourse producing institutions have been established which resemble more or less the US What Works Clearinghouse, with considerable inspiration from the Campbell Collaboration, although typically with more room for inspiration from other scientific and methodological paradigms (e.g., Hammersley 2007, 2013; Hattie 2009; Meyer 2004). In the UK, one could point to the *Evidence for Policy and Practitioner Information Centre* (EPPI), which was established in the 1990s to assist policy makers in making evidence-based (or -informed) priorities and as a *What Works* repository for practitioners to consult (Oakley 2007; Wells 2007). In Denmark, an OECD report on Danish R&D resulted in the 2006 establishment of the Danish Clearinghouse for Educational Research, which was explicitly advised to look for inspiration from the US What Works Clearinghouse and EPPI (OECD/CERI 2004). Similar developments are seen in other European countries, and are increasingly influencing how school and teacher education programs can be framed in terms of legitimate knowledge and skills base (Krelsler 2013, 2017).

In 2004, the OECD hosted a meeting in Washington which focused on evidence and education, that is, how to understand the new conditions for producing knowledge

about what works. Here, the US delegation proved the most hardcore in defining evidence for What Works, in terms of privileging Randomized Controlled Trials primary studies, statistical meta-analyses of intervention studies, and elaboration of systematic reviews of research. It disregarded qualitative studies, case studies, and other non-experimental studies as irrelevant to producing valid knowledge about which interventions work. At the other end, the Nordic countries represented a different voice that stressed the importance of employing various paradigms when it comes to deciding what works (Boruch and Herman 2007; Burns and Schuller 2007a; Hammersley 2007).

Altogether, one can say that the evidence and What Works truth regime has been advancing on both sides of the Atlantic. Systematic implementation across the school, teacher education, and educational research systems of a particular evidence regime with very specific definitions of what counts as scientific has been, however, considerably more pervasive in the United States than in Europe. This is hardly surprising considering the far more profound integration that characterizes the relation between the federal and state levels in the United States, as opposed to the far feebler and more volatile character of the transnational organizations within which European nation states collaborate. The latter cannot make nation states commit and comply beyond what is possible in terms of voluntary commitment, be it guided by self-interest or peer pressure (e.g., Diamantopoulou 2003; Labaree 2014).

19.9 The Standards-Based Education Regime and Its Further Advances During the Obama Administration (2009–2015)

The NCLB truth regime and its associated standards, high-stakes testing and accountability technologies, driven by conspicuous reward and punishment systems, had long contributed to building up counter-discourses among subject positions representing alternative and broader ideas of schooling and its purpose, as well as among research paradigms that were excluded by the narrow evidence for what works paradigm (Apple 2006; Hursh 2007; Nichols and Berliner 2007; Ravitch 2010). Consequently, the inauguration of the presidency of Barack Obama in January 2009 produced high expectations and hopes for a discursive dislocation of the NCLB regime, or at least reverses or considerable reforms. Many discursive adversaries to NCLB were expecting—or hoping—that Linda Darling-Hammond from Stanford University would be the choice for secretary of education, the decisive discursive position for advancing dominant federal discourse. She had been central in the build-up of the Obama campaign education discourse and represented a broader capacity building discourse than the current NCLB and evidence regime (e.g., Ravitch 2013). However, the choice of Arne Duncan, which disappointed many NCLB-adversaries among teachers and in the educational research community, and the policy regime that was put on track, showed that this administration would follow the *No Child Left Behind* truth regime of standards, high-stakes testing, and accountability (Ravitch 2010; Schneider 2015; Sunderman 2009).

The Obama administration took over an economy in tatters in the wake of the financial crisis of 2007–2008. They started out in 2009 by seeking to redress this desperate situation with an enormous bail-out package, *The American Recovery and Reinvestment Act*. The act pledged 823 billion US dollars in a Keynesian or New Deal economic discursive move by pumping federal money into infrastructure projects, loans, and so on that would boost demand, create jobs, and get the economy going. An approximate 100 billion US dollars were reserved for education in the recovery act to counter, in particular, massive cuts in state school budgets, teacher layoffs, and so on.

The NCLB truth regime and its discourse were acclaimed by the Obama administration and its intended reauthorization of NCLB in the name of the *ESEA Reauthorization: A Blueprint for Reform* in 2010. This key discursive document of the Obama administration included priorities such as a focus on “producing college- and career-ready students through higher standards for all students, improved assessments, and a more broad academic program”; “recognizing, encouraging, and rewarding excellence”; fostering equality and opportunity for all students through “rigorous and fair accountability”; raising standards and rewarding excellence via [Race to the Top](#); and expanding charter schools (U. S. D. O. Education 2010). Polarized power relations between republicans and democrats in congress upon the mid-term elections, however, made it impossible to have the reauthorization approved.

Nonetheless, the Obama administration went along with the NCLB regime. The three political technologies that have received most attention have been the *Race to the Top* (RttT) and its competitive grants; the *Common Core State Standards* (CCSS), which strictly speaking was not a federal initiative but an interstate collaboration that was strongly supported by the federal administration; and the continuation of the *Teacher Incentive Fund* (approved by congress 2006) as competitive grants to encourage, in particular at state and local levels, the improvement of teachers and principals in high-needs schools where shortages of math and science teachers in particular have been a serious problem (Brown 2015; Owens 2015; Schneider 2015).

As a political technology, *Race to the Top* (RttT) was part of the [American Recovery and Reinvestment Act](#). More than four billion dollars were spent on competitive grants meant to commit states and local school districts to K-12 reforms and innovation. States were awarded points for adopting a number of particular policies such as common curriculum standards; giving preference to STEM subjects; performance-based evaluations for teachers and principals; turn-around of low-performing schools; developing systematic data systems; and expanding [charter schools](#).

As states were keen get their hands on part of these big competitive grants, a number of states actually changed their education policies to make their applications more competitive. And *Race to the Top* did become a strongly supportive incentive, encouraging states to adopt Common Core State Standards (see below). Adoption of CCSS was not an explicit requirement as such, although something similar was required in case of non-adoption. In addition, the federal government supported CCSS by funding the development of assessments aligned to the common standards with 350 million dollars. RttT included the development of a political technology, an Annual Performance Report (APR), to map how successful applicants implemented reform plans and met goals for student outcomes. In that sense,

RttT was very much a political technology in the Foucauldian sense that it would take what was basically a political problem and recast it into the neutral language of science (Dreyfus and Rabinow 1982: 196).

The Common Core State Standards (CCSS) was a comprehensive political technology initiative to develop standards for what K-12 students should know in English language and mathematics (Owens 2015; Schneider 2015). In its own discursive language, CCSS would only specify standards for what students should know at each grade level and describe the skills that they would have to acquire in order to achieve “college or career readiness” (www.corestandards.org/). It would cater to state and local interests by stressing that it was the individual school district that would be responsible for choosing and specifying curriculum based on the standards. In its own discourse, the stated purpose of the initiative was to “provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them.” The standards were supposedly designed to be “robust” and “relevant” to “the real world,” reflecting the knowledge and skills that students would need for “success in college and careers.” This should, allegedly, place American students in a position where they would be able to compete in a global economy. In its discourse, CCSS stated that it was developed by teams of academics and educators from across the United States who led the development of the standards, whereas additional validation teams approved the final standards. The process claimed broader legitimacy by including public feedback from various stakeholders, which was incorporated into the standards.

The Next Generation Science Standards were launched in April 2013 as a seemingly separate political technology to cover the sciences that were not covered by CCSS. However, even these standards have been adopted by many states, and the standards and their content have been constructed so as to be easily compatible with the mathematical and English Language Arts standards of CCSS.

The political technologies intended to assess CCSS have been created by two consortiums, each of them regrouping some 20 states by voluntary choice of the state education agencies. *The Partnership for Assessment of Readiness for College and Careers* (PARCC) would focus on computer-based “through-course assessments” in each grade, together with streamlined end-of-year tests. The second consortium, called the *Smarter Balanced Assessment Consortium* (SBAC), would focus on creating “adaptive online exams.” In their own discursive presentations, both these leading consortiums would distance themselves somewhat from the mainstream standardized testing formats by proposing computer-based exams that include fewer selected and constructed response test items. This could be seen as a discursive move to placate criticism that NCLB testing had been carried out too rigidly according to templates that favored multiple-choice and rote learning, whereas these new templates would work to be more amenable to higher-level skills thinking needed to succeed in global knowledge economies.

Furthermore, the Common Core regime exhibits a genealogy of how a particularly dominant configuration of policy and corporate big business interests merged their discursive positions to support the evidence and standards-based education discourse and, subsequently, succeeded in becoming the architect behind numerous

policy initiatives that pushed this agenda forward. The CCSS genealogy thus gained impetus in 1996 with the establishment of *Achieve, Inc.* (www.achieve.org), which today encompasses the [National Governors Association](#) (NGA) and the Council of Chief State School Officers (CCSSO), together with corporate giants like Intel, IBM, and Prudential Financial, attracting financial support from the [Gates Foundation](#), the Pearson Publishing Company, and others (Owens 2015; Schneider 2015). In its discourse about itself, Achieve Inc. would state that it is a bipartisan organization aimed at raising academic standards and graduation requirements, improving assessments and strengthening accountability. In particular, it would highlight the work on developing standards linking what students were expected to know and be able to do at each grade level with assessments designed to measure whether students actually met those standards. Being a product of this genealogy, the Common Core as a truth regime and as a political technology could be presented as an interstate (not a federal) initiative in formal terms. The CCSS process thus sought to cater to sensitivities that cherished the rights of states, although, in practice, it was perceived as closely linked to the federal agenda. As mentioned, states were given an incentive to adopt the Common Core State Standards through the linking of CCSS to the Race to the Top competitive federal grants. And although states could adopt other college and career-ready standards (as did, e.g., Texas and Virginia), they were awarded extra points in their Race to the Top applications if they adopted CCSS. Again, it is obvious that dominant political technologies such as CCSS and the Next Generation Science Standards, as well as the regimes set up to measure them, would exert a dominant pressure upon the direction of school and teacher education programs (U. S. D. O. Education 2011; Krejsler 2018).

There is considerable need for transparency about the span of activities and dominant discursive positions that collectively make up organizations like *Achieve Inc.*, in order to evaluate what are federal and what are state interests, and what is public good and what are private market interests. This need grows even bigger when one considers that Achieve Inc. also manages the *Next Generation Science Standards* and is a so-called Project Management Partner in the development of *PARCC*. Altogether, this rightly brings forward the question posed by Mercedes K. Schneider in her book *Common Core Dilemma: Who owns our schools?* (Schneider 2015).

As the NCLB truth regime approached its target year 2014, it became clear that its discourse and political technologies were running out of steam, which gradually paved the way for competing discursive regimes concerning school and education. It became increasingly clear that a growing number of states would not succeed in complying with the NCLB aims—that all children should have proficiency in basic numeracy, literacy, and science knowledge and skills. Gains seemed to have been made during the first years of NCLB, but sustaining this and making sure that no children were left behind appeared impossible. After 2010, this gradual undermining of the NCLB truth regime was countered, when the Obama administration embarked upon the repair strategy of still keeping states committed by offering them the option to apply for so-called NCLB waivers and

still keep federal ESEA funding such as Title 1 funding. In its own discourse, the political technology of waivers would soften up demands and allow for more flexibility, but still require states to come up with plans that maintain the direction of NCLB.

As mentioned previously, another issue has been the difficulty in having the NCLB truth regime reauthorized, in particular during the second Obama term in office (2013–2017). Here, a republican majority in both houses of congress, coupled with increased enmity between republicans and democrats, and even more so between congressional republicans and the white house, would sour so much that agreements have been very difficult to negotiate at all. In fact, it appeared almost impossible to come to an agreement to reauthorize the long overdue NCLB act, which has forced the Obama administration to act according to executive orders and emergency measures ever since the 2010 mid-term elections where republicans captured a majority in the House of Representatives.

A third—but associated—issue has been that the impressive coalition of dominant subject positions that had previously warranted the NCLB regime would begin to evaporate. An increasing number of subject positions, representing the various strong discourses that initially made the standards-based education discourse so strong, came into increasingly severe doubts about whether the incessant focus upon high-stakes testing actually works, and whether the federal waiver technology is actually warranted at the expense of more power to states, local educational authorities, and so forth. Altogether, this would materialize into enhanced enmity at state and local levels against the considerably increased influence of the federal level upon K-12 education (Krejsler 2018; Manna 2010; Ravitch 2010).

By the end of 2015, what started out as a counter-discourse initiative among republicans such as Lamar Alexander, the previous secretary of education, had finally been negotiated into a bill which could summon bipartisan support and, in the end, be signed by President Obama under the name *the Every Student Succeeds Act (ESSA)* (House 2015). By avoiding contentious issues, such as launching school privatization political technologies (e.g., transforming federal aid into vouchers for parents), and by making the necessary compromises, an act had thereby been passed that finally meant the reauthorization of ESEA in a form that formally brought the *No Child Left Behind Act* to an end. Surprisingly, the ESSA act was interpreted as a victory by all major factions within congress as well as by the White House. Republicans claimed they had put a brake on secretary of education Arne Duncan and the Obama administration, reversing a situation where the federal level had achieved too much power to control states with the NCLB waiver programs and emergency executive orders. Democrats and the White House, on the other hand, claimed that ESSA would ensure federal funding for expansion of pre-school facilities and preserve important national standards. In summary, ESSA as a political technology promises that more authority will be given back to states and local authorities, while still retaining a minimum of federal authority to ensure civil rights, basic testing, and so forth (Berman 2015; House 2015; Strauss 2015; Weiss and McGuinn 2016; Wong 2015).

19.10 Consolidation of a European Truth Regime of a More Opaque Kind

A comprehensive truth regime and an array of political technologies have been consolidated and expanded in the increasingly frequent and commitment-based relations between transnational organizations and European nation states. *Horizon 2020* (2014–2020) has been the latest version of the EU flagship political technology of so-called 7 years framework research funding programs which, together with a number of other political technologies, are aimed at ensuring that research, including educational research, will be integrated into the overarching dominant truth regime of *the Lisbon Agenda* and its latest formulation in *Europe 2020* (Colignon et al. 2005; EC 2010, 2014; Keeling 2006). As elaborated earlier in this chapter, this truth regime mainly operates through a discourse about EU and Europe becoming a dynamic and competitive region among global knowledge economies, driven by the fear of falling behind. Consequently, EU political technologies operate by means of central templates like *Horizon 2020* and the European Qualifications Framework that are increasingly copied in member states' national school and teacher education policy and so forth, including national research councils and funding bodies (EQF 2008; Krejsler et al. 2014, 2017; Olsson et al. 2011). EU research and education policy discourse is developed in terms of keywords such as “competitiveness,” “excellence,” “life-long learning,” and “employability,” where STEM areas—like in the United States—increasingly outclass social sciences and humanities, which include educational research (Moos and Wubbels 2014; Moos et al. 2015).

European transnational policy discourse concerning primary and lower secondary school has not yet transformed into an institutionalized truth regime comparable to NCLB in the United States or even the Bologna Process concerning higher education, including teacher education. The discursive alignments that do take place, and the political technologies that have been adopted, have come about in more indirect processes. This has happened in terms of national policy-making and debates which increasingly have had their discourse shaped by transnational technologies, including the PISA, TIMSS, and PIRLS international comparative surveys, OECD country reports, and policy advice. Further, such impact has manifested itself as effects upon policy makers, researchers, and professionals, in that the subject positions they inhabit in a new truth regime have been increasingly shaped by their participation in transnational networks and events (Hopmann 2008; Meyer and Benavot 2013). This kind of commitment has mainly thrived on the motivating effects of aligning with one's partners in the dominant regional transnational regimes (the OECD, EU, and the Bologna Process), to ensure that one's nation would remain comparable, and thus eliminating the risk of being excluded—or excluding oneself—from the mainstream processes.

Since 2000, *the Open Method of Coordination* has increasingly become the political technology format for collaboration to advance consensus in largely voluntary transnational policy processes. This method works by gradually advancing consensus instead of making decisions by voting, which had proved untenable for securing efficient collaboration among too many different nation states in transnational forums that

could only count on voluntary adherence. The efficiency of the Open Method of Coordination works by producing peer pressure in the competition for success in comparisons among nations, according to agreed templates and standards; the naming and shaming of not being successful according to those measures; and—not the least—the fear of being left behind, or—even more so—being left outside. The Open Method of Coordination is the official method of collaboration of the European Union and the Bologna Process. Nonetheless, it resembles so much how collaboration takes place in even the OECD, where one usually talks of *Multilateral Surveillance*, that policy researchers increasingly find it useful to use the term to cover this particular kind of collaboration more broadly among transnational bodies (Colignon et al. 2005; Gornitzka 2006; Krejsler et al. 2014, 2017; Schäfer 2004). The acceleration of this consensus-advancing and peer pressure driven kind of collaboration took off in education policy in particular upon the launches of PISA and the Bologna Process, continuously aided by the similar, albeit not so publicly well-known, IEA surveys of TIMSS (from 1995) and PIRLS (from 2001). Since the first PISA survey was launched in 2000, the discursive effects of so-called PISA shocks have been regularly administered to different member nations and with resounding effects on their self-perceptions and policy agendas. Germany has had PISA shocks that have changed the agenda for thinking school and teacher education policy (Hopmann 2008; Waldow 2009). Among the Nordic countries, Sweden and Denmark used to believe that they had world class progressive school systems, and that it was Finland which was traditionally somewhat behind (Hopmann 2008; Telhaug et al. 2006). Having become dominant political technologies, PISA, as well as TIMSS and PIRLS, have reversed such perceptions thoroughly, notwithstanding the often forgotten caveats that PISA, TIMSS, and PIRLS—like NCLB—represent a narrow set of subjects (literacy, numeracy and science) as well as narrow ways of measuring, and an emphasis on testing and numbers with inherent limitations (Hopmann 2008; Labaree 2014; Meyer and Benavot 2013). This again produces incessant criticism of teachers and teacher education for not being sufficiently fit to produce the next generation of highly skilled lifelong learners, which is followed up by further teacher education reforms (Furlong et al. 2009a, b).

This current state of affairs has produced counter-discourses questioning whether aligning with such comparable templates quenches the diversity of school systems that correspond to the diversity of, and among, European nation states. Proponents of some discourses have even argued that a major part of the competitive advantage of Europe and the EU may be jeopardized by the political technology of aligning all to the same comparative templates. Researcher subjects of PISA and IEA discourse have often responded by claiming exasperation when policy makers and the public misuse their surveys for ranking. They have claimed surveys are meant to highlight possible problems and subsequently inspire to learn from each other, taking into consideration that any inspiration from apparently successful countries must always be considered according to criteria regarding whether they are compatible or even desirable in terms of what a given nation aims at with its particular school system. School serves many purposes that go well beyond basic literacy, numeracy, and science skills or competences (Henry et al. 2001; Hopmann 2008; Krejsler 2017; Meyer and Benavot 2013).

19.11 Summary of Genealogy of US K-12 and Education Policy Discourse

The genealogy of US K-12 and education policy demonstrates that conditions have been dramatically reconfigured since the 1980s with the *No Child Left Behind* Act and the ensuing standards-based education regime as an iconic and dramatic culmination (Brown 2015; DeBray-Pelot and McGuinn 2009; McGuinn 2006; Rhodes 2012; Sunderman 2009; Vinovskis 2009). In spite of education being a state responsibility in constitutional terms, strong national and even federal education discourse and practice regimes have clearly been established (Department 2009; Manna 2010; McGuinn 2005, 2006; Sunderman 2009). This turn towards a stronger federal presence in education policy discourse has been a gradual development. It gained impetus in the 1960s, when civil rights discourse found common ground with constitutional discourse and gained US supreme court approval in putting desegregation of schools and alleviation of student poverty on the education policy agenda at a federal level (Patterson 2001). This base was initially exploited, but took a turn with the influential *A Nation at Risk* report (1983). From then on, civil rights and desegregation discourse would gradually merge into the emerging standards-based education discourse. School and education policy at a federal level would gather momentum and create a drive towards standards-based education at a national level. This was made legitimate via reference to phrasings such as “no child was to be left behind,” “the achievement gap had to be closed,” and, not the least, the fear of “the nation falling behind” (Hamilton et al. 2008; Kosar 2005; Rhodes 2012).

What started out as a discourse about dwindling standards, poor student results and fear of decline in American economic and political power grew to become a dominant configuration of leading subject positions representing a plethora of diverse discourses, including conservative education researchers, business coalitions, civil rights groups, southern governors, and liberals. During the 1990s, the standards-based education discourse was consolidated and gained momentum at presidential and congressional levels with the America 2000 and Goals 2000 initiatives introduced by the Bush senior and Clinton administrations, peaking with the bipartisan adoption of the *No Child Left Behind* truth regime. The NCLB regime has succeeded in launching political technologies in terms of standards, high-stakes testing, accountability, and waiver measures that transcended individual states without being, in a formal sense, direct federally governed models as such. Aided by the incentive (aka pressure) mechanism of limited federal ESEA funding, the NCLB regime has been surprisingly successful in creating today a unity among the K-12 systems of 50 states—something that is unprecedented in the history of the United States. The Obama administration has—more or less—faithfully followed the overall intentions of the G.W. Bush administration and the NCLB truth regime (Brown 2015; Owens 2015; Ravitch 2013).

As this truth regime proliferated, it became simultaneously more compelling, unless a state wanted exclude itself by making itself irrelevant to the increasingly national mainstream debate that has come to govern the gradual on-going consensus-

building. Officially, the processes that composed this reconfiguration were never—or seldom—explicitly federal: the states would comply with NCLB but made their own testing systems; the waivers would offer flexibility but required federal acceptance of alternative ways to comply with NCLB targets and so forth. The federal subject would officially exercise an arbiter and motivator role as the player that harbored the institutional capacity that none of the single states in themselves would have or could be motivated to take upon themselves. And, most importantly, the federal level would know how to use ESEA and collateral federal funding as bait to motivate states to align.

In an exemplary way, the political technology of the Common Core State Standards (CCSS) illustrated how this discursive process moved along to strengthen the NCLB truth regime (Owens 2015; Schneider 2015). The CCSS was clearly defined as an interstate (rather than a federal) collaboration, with the dominant subjects at state level leading the production of discourse and technologies, that is, National Governors' Association and the Council for Chief State School Officers. The CCSS could be seen as a way of deepening the standards and assessment objectives of the federal NCLB Act, which never forced any state to adopt anything that was not demanded by the Constitution and/or Supreme Court orders. The NCLB regime was officially a framework inspiring interstate collaboration on a voluntary basis in order to secure the future of the American economy by ensuring education provisions that made students college and career ready and so forth. The Race to the Top initiative was another exemplary political technology case that showed how the federal NCLB regime assigned more than four billion US dollars from the American Recovery and Reinvestment Act, which was adopted under the exceptional circumstances of the major 2007–2008 financial crisis turmoil, to a competitive grant mechanism which presupposed that states adopted the CCSS without explicitly demanding so. Hereby, the federal and the state levels became increasingly tied up with each other in processes where the federal subject would coordinate what became increasingly compelling albeit still voluntary (Owens 2015; Schneider 2015).

Recent developments show, however, that this is no straightforward and linear development. Disappointment regarding a high-stakes testing technology that has gone too far, as well as NCLB punitive measures that did not work as well as anticipated, has led to a backlash among subjects and discourses that were—from the outset—allied with the standards-based education discourse and the NCLB truth regime (Labaree 2014; Manna 2010; Owens 2015: 708; Ravitch 2010, 2013). Conservative anti-federalists, parents groups, liberals, and others have now gathered in opposition to a federal involvement that was perceived by many as being too intrusive. This eventually ended in a discursive battle where the NCLB truth regime was formally dislocated by the Every Student Succeeds Act (ESSA) in a bipartisan compromise that promised a reverse towards more power to states and local educational authorities (House 2015; Strauss 2015; Weiss and McGuinn 2016).

It will be interesting to see whether ESSA, the Trump administration and Betsy DeVoss, its outspoken Secretary of Education, will inaugurate a new truth regime that will reverse the federal influence which has been growing since the 1960s, and

in particular since 2002, or whether it will just be a less important bump on the road towards building a national K-12, teacher education, and educational research system with a strong federal core.

19.12 Conclusion: Two Regions Moving in Similar Directions Along Different But Compatible Pathways

In conclusion, we can say that there are commonalities as well as considerable differences to be seen in how school and education policy discourse has developed in these two influential regions of the world. Many of these differences can be accounted for by the different levels of internal integration of the United States and Europe (Diamantopoulou 2003). Nonetheless, the tendencies and responses to the challenges of globalization and knowledge economy discourse do run in very similar directions, and mutually influence each other to some extent, even though it is not always very notable in state or nation state debates, because federal or transnational intrusion is often unpopular and triggers local sensitivities (Henry et al. 2001; Meyer and Benavot 2013; Nóvoa and Lawn 2002; Owens 2015; Rhodes 2012; Rizvi and Lingard 2010).

In an illustrative article, David Labaree showed how some of these key differences have been worked out in education policy discourse, persuasively comparing how the truth regimes of NCLB in the United States and PISA in Europe have responded to different background contexts (Labaree 2014). In short, Labaree argued that NCLB represented the shrinking aims of education. It largely reduced K-12 education to producing college and career-ready students according to standards-based education discourse that only measured lower-level reasoning in terms of knowledge and skills within a narrow conception of knowledge, that is, literacy, numeracy, and science skills, and largely according to what could be measured by multiple-choice high-stakes testing that eschewed higher-level reasoning. Paradoxically, however, NCLB was successful in that such political technologies (with federal funding as bait) succeeded in keeping states accountable and making them adapt their state systems to be compatible with federal demands. This, as a result, has indeed made states comparable. PISA, on the other hand, has measured higher-level reasoning and what was claimed to be necessary competences in order to be employable in twenty-first century knowledge economies. According to Labaree, however, it measures what no one teaches. Out of necessity, the OECD has constructed a political technology for comparability that cannot coerce member states into alignment, rising from the fact that the OECD has no authority over very diverse national school systems among member states and even less so over their curricula. His conclusion is that both NCLB and PISA measure what no one teaches, yet have, by means of their thorough and widespread proliferation into school and education policy discourse, developed into truth regimes that now largely define how success in student performance is measured. This, by implication, reflects back

on federal and transnational success in defining and reducing the purpose of school and teacher education, as states and nations tend to prioritize the subjects measured and prepare for the tests that will determine whether a state or a nation ranks as successful or as falling behind.

Labaree's argument encapsulates in a number of aspects the differences and similarities that this chapter has made visible by mapping the genealogies of school and education policy discourse in the United States and in Europe. The genealogy of US K-12 and education policy is a specific evolvment with references to the constitution and traditions of American government as a continuous struggle between federal and state interests. This is a narrative of the increasing federalization of education policy: the federal level started out from having almost no power over education (cf. US constitution), to gradually assuming considerable power as civil rights and desegregation discourses gained strength, and culminating in those discourses merging with the standards-based education discourse, which eventually reached its climax in the NCLB truth regime. The genealogy of European school and education policy discourse is, on the other hand, a specific evolvment that refers to a number of different nation states with particular histories, identities, and animosities towards each other, including their attempts at increasing mutual integration by way of transnational bodies whose legitimacy and authority are opaque at best. It is a narrative about how collaboration among independent nation states gradually institutionalized transnational bodies such as the OECD, EU, and the Bologna Process. It started out as an economic collaboration between war-torn countries after World War 2, but gradually deepened to cover more portfolios, including school and education. It was always an uneasy process with continuous backlashes. The Open Method of Coordination signifies as a truth regime how different nation states have gradually learned to integrate even their school and education systems more and more.

Nonetheless, as demonstrated, the discursive processes and the struggle towards establishing truth regimes that are compatible with the demands of global knowledge economy discourse bear striking similarities in these two regions, emphasizing keywords such as "employability," "competences," and "lifelong learning" in Europe, and "college and career-ready students," "standards-based education" and "excellence" in the United States. Both genealogies are narratives about moving ahead in struggles between federal and state power, or between transnational and nation state power, towards shared truth regimes, by engaging in voluntary—yet compelling—policy processes, which, over time, sediment in the form of increasing collaboration and, by consequence, transform school, teacher education and educational research regimes.

However, these are ongoing processes that are sensitive to more general political developments. And how they will be affected by recent developments and political turbulence on both sides of the Atlantic since 2016 remains to be seen. Here it will suffice to mention the surprising and potentially groundbreaking events of Brexit, the election of the Trump administration, rising populism in Eastern Europe, Italy, and elsewhere, and the spillover effects of these on policy-making in the United States, in Europe and beyond.

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