



# LINKING RESEARCH AND TRAINING IN INTERNATIONALIZATION OF TEACHER EDUCATION WITH THE PEERS PROGRAM: ISSUES, CASE STUDIES AND PERSPECTIVES

Jean-Luc GILLES (Ed.)

Peter Lang

The PEERS program proposes international exchanges adapted to the context of teacher training institutions wishing to take advantage of internationalization in order to link training, research, and practice. PEERS is based on the completion of Research and Innovation (R&I) projects during the academic year, during which international groups of professors and students from teacher training partner institutions collaborate remotely as well as during two placements of one week. For the students, the PEERS program aims to develop competencies in distance collaboration with the help of Information and Communication Technology (ICT), the management of intercultural groups, and the continuous improvement of their activities through reflective thinking and the spirit of research. For the professors the PEERS program aims to better link research and training, to reinforce their skills in the management of international research projects and to foster opportunities for international publications.

The aim of this collective book is to give an overview of the Issues, case studies and perspectives of the PEERS program. The first section entitled “Issues, Opportunities, and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural, and Connected World”, focuses on the foundations and general features of PEERS projects, as well as the context of globalization in the intercultural and connected world in which it is situated.

The second section, “Case Studies and Lessons Learned from the PEERS Project in Southern Countries” constitutes a series of chapters presenting case studies on PEERS projects focused on innovation and cooperation in the developing world. The third section, “Results of Research-Oriented PEERS Projects,” considers the results from PEERS projects that have enabled the implementation of theoretical and practical educational research, generally taking the form of small-case research studies or innovations in the design of teaching units. Finally, in the conclusion we propose to present the key points of the three sections that make up this book “Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives”.

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Since 2011 until 2017, no less than 81 PEERS projects have been carried out involving the participation of nearly 500 students and over a hundred professors.

**Linking Research and Training in  
Internationalization of Teacher Education  
with the PEERS Program:  
Issues, Case Studies and Perspectives**



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**PETER LANG**

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I would also like to thank the members of the Scientific Committee and of the Extended Expert Committee – their names are mentioned on two special pages of this book – their support throughout the editorial process was extremely valuable and the chapters gained in quality thanks to their suggestions.

We are also grateful to the Executive Committee of HEP Vaud, composed of Dr Guillaume Vanhulst, rector; Mr Cyril Petitpierre,

- 
- 1 Mrs Carla Gutmann, now retired, was the Mobility Program Coordinator of the University of Teacher Education of State of Vaud at the time of the official establishment of the program in 2011–2012. Her energy and kindness are still present in the memories of all those who participated in the PEERS program.
  - 2 Mr Biagio Tedesco was Director International Department at the DGES (Board of Higher Education) of the State of Vaud and has supported the PEERS program from 2010 to 2015.
  - 3 Mr Emilio Aliss was the first PEERS partner professor of an institution of the South, the Simón I. Patiño University, Cochabamba in Bolivia, and subsequently also Developing Countries Fundraiser Officer at HEP Vaud until 2016.

director of training; and Mr Luc Macherel, director of administration. Their support and trust were essential for the successful development of this innovative program combining research, innovation, and training in the field of the professions of teaching and life-long training.

We direct our most heartfelt thanks to the General Director, Mrs Chantal Ostorero, of the Board of Higher Education of the State of Vaud which assisted in the financing of the PEERS projects and provided its expertise, allowing us to develop an international network of reliable institutional partners.

But above all, it is worth pointing out that this PEERS program could not have been brought to fruition without the commitment of the professors and the students who have been its actors. Between 2011 and 2017, almost 500 students and more than one hundred professors and training professionals have been involved in the projects of the PEERS program! Upon reading the following chapters, the reader will easily understand that the implementing of this program dedicated to future teachers at the start of the twenty-first century was a wonderful human adventure, and that the first individuals to strike out on their own were true pioneers who paved the way for those who followed. The projects they carried out, their personal testimonies, and the results they achieved were, for us, the first lessons from which we went on to draw the invaluable knowledge that allowed us to improve the program.

To all PEERS projects professors and students in the four corners of the world, it is to you that this international program belongs. It is, henceforth, up to you to pass on the torch of the spirit of research and humanism with which your PEERS projects are imbued and upon which our globalized, intercultural and connected world depends so much. Thank you!

Prof. Dr Jean-Luc GILLES  
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June 2017

# Preface

For teacher training universities, as for all university institutions, the internationalization of higher education is an issue of great strategic importance. It covers a wide variety of aspects, including in particular student and staff mobility, cooperation in research and knowledge transfer, virtual mobility, and collaborative online learning. Promoting the adaptability of individuals, organizations, and curricula in diverse and changing conditions of human activity represents a major challenge for these institutions, now more than ever. It takes on a particular character, however, in the case of university institutions providing professional training. At first sight, the need to promote increased student mobility may seem less important for individuals who are training to practice a professional activity, such as teaching, in a pre-determined environment. In other words, the adaptation required for this defined context might suggest that the adaptability pursued by internationalization takes on secondary importance. This is not the case, however, since adaptation and adaptability are not opposing characteristics: quite the contrary, in fact, for experience shows that the ability to understand how a system works, in order to fit into it, largely rests on meeting and being confronted by other systems.

Nevertheless, the internationalization of professional teacher training poses a particular challenge due to the central place accorded within the curriculum to external practical placements. Although it is relatively easy to facilitate exchanges between university faculties due to their comparative equivalence, it becomes much trickier when other institutions outside the world of higher education are also involved. European research and education programs, primarily the ERASMUS+ program, provide a form of exchange that is only marginally relevant to teacher training universities. Imagination and the creation of new exchange methods are therefore required. Under the initiative of Jean-Luc Gilles, the University of Teacher Education of State of Vaud (HEP Vaud) has

contributed to such efforts since 2011, with its implementation of the PEERS (*Projet d'Étudiants et d'Enseignants-chercheurs en Réseaux Sociaux* or Student and Teacher-Researchers Social Networks Project) program, to which this book is dedicated.

PEERS projects have several interesting characteristics that contribute to their relevance and effectiveness in the context of teacher training programs. Firstly, the length of engagement required from the participants. Each project is designed to take place over the course of a whole academic year, which requires considerable commitment from those involved, but also permits a division of labor that is compatible with the other demands of the curriculum. Secondly, the small size of the project teams, which favors collaborative learning in an environment conducive to personal engagement and accountability. Thirdly, each project is linked to an innovative research approach, led by a teacher-researcher who is directly involved, which requires students to be analytical, critical, and reflect upon their own journey. Considered as a whole, these features demonstrate the profoundly experiential nature of the PEERS approach, which makes it a prominent choice in the real-life student curriculum.

The integration of PEERS into a perspective of research and innovation presents other advantages for HEP Vaud, contributing to its institutional development. The direct participation of students in research activities involves methodological objectives that are key to their training, such as critical thinking and the process of objectivation. Building external links and implementing interinstitutional collaborations contributes to the visibility of HEP Vaud in the eyes of its foreign partners, in communication, and in knowledge transfer, and enables participants to encounter a large variety of economic, social, and cultural contexts. Finally, the use of social networking during the project introduces participants to the focused use of information and communication technologies in a context linked to their training and with the goal of facilitating collaborative working.

It remains only for me to note that the PEERS program constitutes, for HEP Vaud, an approach of potential benefit for the whole research community, including teacher-researchers and students. This form of

mobility is in itself a subject of interest and research, and is helping the HEP Vaud to contribute toward provision, creation, and invention in the context of what a recent European Parliament report defines as an “*open dialogue about rationales, benefits, means, opportunities, and obstacles in this ongoing process of change*” (European Parliament, 2015, p. 31).

Such is the subject of the present book, and I would like to congratulate and thank all its contributors. I sincerely hope that their work will receive the attention that it deserves.

Prof. Dr Guillaume VANHULST

Rector of the University of Teacher Education of State of Vaud  
Lausanne, Switzerland





## Foreword

This collective book is the first to describe the origins, foundations, and early projects of the international exchange program entitled “Projets d’enseignants-chercheurs et d’étudiants en réseaux sociaux” (PEERS) [the Student and Teacher-Researchers Social Networks Project]. This program was created in 2011 by the University of Teacher Education, State of Vaud in Switzerland, in collaboration with its network of partner institutions in North America, South America, Europe, and Singapore.

The PEERS program was conceived with a view to meeting the needs of teacher training institutions seeking a new form of internationalization that combines research and training and develops students and professors mobility. The formula is relatively simple, consisting of bringing together small international groups of students and professors from two partner institutions to work on research projects investigating educational theory and practices over the course of an academic year. These international groups are generally composed of six students from the two institutions and the two professors training them. They work together on an R&I (Research and Innovation) focused project whose results are published in a report, and this is generally followed by one or more academic communications such as publications in academic journals or professional periodicals. As part of this project, the students and professors begin by communicating online with the help of Information and Communication Technology (ICT) and social networks supported by the tools of Web 2.0. A one-week visit to the partner institution then takes place during the first term of the academic year. The international group generally benefits from this moment in order to finalize the objectives of their project and to formalize the work schedule and the division of labor over the following months. After this first visit, collaboration continues via remote communication over the second term, until a return visit where the partners who first went abroad host their counterparts in turn. This second exchange visit enables the structure of the report to be formalized

before it is then finalized during the closing weeks of the project. An average of six students and two teacher-researchers form an eight-person team that is highly engaged in a project whose shape they have themselves defined. For trainee teachers, these visits to partner institutions are also an opportunity to visit school establishments with their hosts, allowing them to gain an understanding of educational realities that are often very different from their own. Sociocultural activities are also organized between project work, and these constitute further opportunities for intercultural exchange and discovery at group level. Online collaborative work also provides real-life experience of ICT use in the context of international cooperation. This brief description indicates the innovative character of the PEERS program in comparison with traditional mobility programs, which most often consist of spending one or two terms abroad.

In the first, introductory section of the work, *“Issues, Opportunities and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural and Connected World,”* three authors describe the foundations and characteristics of the PEERS program. The contextual and transversal aspects of the different projects are put into perspective with the issues and objectives of internationalizing teacher education. In the second section, *“Case Studies and Lessons Learned from the PEERS Project in Southern Countries,”* the authors present the first case studies of projects from the PEERS program in Africa and South America. The cases presented derive from partnerships with institutions in Bolivia, Burkina Faso, Madagascar, and Mozambique. In the third section, *“Results of Research-Oriented PEERS Projects,”* the authors present the results of a series of projects with a more particular focus on R&I. These R&I projects, led in partnership with institutions in Europe, the USA, and Singapore, cover various topics including physical and sports education, special needs education, education for sustainable development, language learning, and the teaching of marginalized pupils. Finally, in the concluding section, *“The PEERS Program: A New Way to Internationalize Teacher Training,”* we return to the characteristics of the PEERS program in the light of the projects previously presented.

Each chapter of this collective book has undergone a systematic peer review process involving two experts – one internal, and one external –

who completed evaluation forms that were then shared with the authors. This review process thus enabled the quality of the text to be improved through the notes and suggestions of the experts. This work therefore constitutes the first collection of quality texts illustrating different types of PEERS projects while putting them into perspective with the issues posed by a globalized, intercultural, and increasingly connected world – a world of transformation in which the teachers of today are being trained to educate the citizens of tomorrow. We hope that this book inspires its readers to improve the practices and tools of internationalizing teacher education, to the benefit of future generations.

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*Part 1*

*Issues, Opportunities and Challenges for the  
Internationalization of Teacher Training in  
a Globalized, Multicultural and Connected World*



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# Chapter 1: Origin, Foundations, Objectives, and Original Aspects of the PEERS Program Linking Research and Training in Internationalization of Teacher Education

## **Abstract**

The PEERS program proposes international exchanges adapted to the context of teacher training institutions wishing to take advantage of internationalization in order to link training, research, and practice. PEERS enables international groups of students (6–8) and lecturers-researchers (2) from two partner institutions to carry out research and innovation (R&I) projects in connection with professional practice environments. Collaborative work is carried out remotely using Web 2.0 resources and face-to-face sessions during two one-week visits to partner institutions. For the students, this approach aims to develop skills in intercultural management and distance collaboration. It also fosters the emergence of a culture of continuous improvement in their professional activities. For lecturers-researchers, PEERS offers a new way of articulating research and training, as well as supporting the development of international networks, and broadening research experience.

## 1. Introduction

At this moment, at the beginning of the twenty-first century, profound societal transformations are affecting the entire planet. These are characterized notably by the increase and diversification of international migrations, the exponential expansion of the flow of information worldwide

due to the development of Information and Communication Technology (ICT), the strengthening of product trade on a global scale, and the increase in financial transactions without borders. Throughout the history of humanity, we have never known such socioeconomic interconnection across the globe. This phenomenon of interdependent economies and the expansion of human interactions in a connected world has become known as “globalization.” The term has become a catch-all but should be properly defined, as indicated by Bernard Charlot (2014). Charlot quotes the Director of Development Policy at the World Bank to give a definition of globalization that he summarizes as: “*the increasing integration of the economies and societies across the world, due to the greater flow of goods, services, capital, technology, and ideas*” (Dollar cited by Charlot 2014, p. 479). Others, like David Held & al. (1999), provide a complementary definition that captures the transformational and multidimensional aspects of the phenomenon:

(Globalization is) [...] a process (or set of processes) which embodies a transformation in the spatial organization of social relations and transactions – assessed in terms of their extensity, intensity, velocity and impact – generating transcontinental or interregional flows and networks of activity, interaction, and the exercise of power (Held & al., p. 16).

The term “globalization” also describes the unprecedented high degree of interconnection and integration of human activities, of which the cultural impact is undeniable:

We now live in a universe where the link between the local and the global is an inescapable fact of the present. The cultural consequences of this situation cannot be underestimated (Abélès, 2008, p. 133).

Indeed, the socioeconomic transformations resulting from globalization influence our social interactions and in some cases tend to weaken feelings of belonging to states and national cultures, as discussed by Hirst and Thompson (1996):

It is widely asserted that we live in an era in which the greater part of social life is determined by global processes, in which national cultures, national economies,

and national borders are dissolving. Central to this perception is the notion of a rapid and recent process of economic globalization (p. 1).

Globalization impacts upon our lives and our societies, and its consequences are both positive and negative. On the one hand, globalization offers opportunities for positive change thanks to the high-speed transfer of technologies on a global scale. Information now circulates rapidly, helping, for example, to accelerate the growth of democratic movements where they are beginning to take hold. Human rights abuses can be brought to light and exposed to the entire world, embarrassing totalitarian governments and, with time, reducing their hold over the populations who are their victims. Another clear consequence has been the incredible acceleration of economic trade. Some of the poorest peoples have been able to seize the opportunities of a globalized world with and improve their living conditions. Over the last few decades, millions of people have thus been able to escape from poverty in the nation-continent of China and India. Globalization may contribute to bringing people together, and to strengthen solidarity, for example during large-scale natural catastrophes where victims are aided by non-governmental organizations and charities who work in every continent. These influential organizations are growing in power and are unaffected by borders. Little by little, a collective conscience is emerging of belonging to one planet. We are becoming citizens of the world, aware that what affects our neighbors, be they near or far, is likely to affect us too one day. Globalization is not of course only a phenomenon of inclusion, interdependence, and an idea of the world as a collection of idyllic economic, cultural and supportive global exchanges. From another point of view, it is also unfortunately characterized by phenomena of exclusion across regions, nations, or even continents such as Africa and Latin America, to the benefit of parts of the world that are already strong and prosperous. The continent of North America, the European Union, Japan, and the “Asian Tigers” have increased their trade and have been strengthened in a globalized world (Phtiaka, 2002; Michalet, 2004, 2007; Moreau Desfarges, 2016). The effects of globalization are not positive for all: in certain parts of the world, not uniquely in the southern hemisphere,

globalization leads to offshoring, employment downturns, poverty, and violence. In certain cases, under the pressure of multinationals attempting to dictate their behavior, or world powers interfering with the internal affairs of other nations, the governments of some countries are persuaded to take measures against their own citizens, sometimes even by cutting investment in education.

Globalization therefore has both a benign and a shadowy side in all areas of human activity, whether in the economy and employment, health, communications, social interactions, or public policies. Education is no exception to this rule of both risk and opportunity. As educators, we have a duty to help minimize the risks, and to seize the opportunities offered to us by globalization. This means working on improving the living conditions of the inhabitants of a globalized, multicultural, and connected world, with particular focus on the younger generation, and to contribute to putting a quality education within the reach of everyone.

It is within this context that international exchanges in the areas of training, research, and services have done nothing but grow in higher education since the middle of the twentieth century. The developments in student mobility have been stunning over the last decades, in particular in Europe with the Erasmus+ program.

## 2. Internationalizing the Training of Teachers in a Changing Globalized World: the Origins of the PEERS Program

The internationalization of higher education has not escaped the phenomenon of globalization briefly described in our introduction, as outlined by Altbach, Reisberg and Rumbley (2009) in their report to the UNESCO World Conference on Higher Education, “Trends in Global Higher Education: Tracking an Academic Revolution”:

Globalization, a key reality in the 21<sup>st</sup> century, has already profoundly influenced higher education. We define globalization as the reality shaped by an increasingly integrated world economy, new information and communications technology (ICT), the emergence of an international knowledge network, the role of the English language, and other forces beyond the control of academic institutions. Internationalization is defined as the variety of policies and programs that universities and governments implement to respond to globalization. These typically include sending students to study abroad, setting up a branch campus overseas, or engaging in some type of inter-institutional partnership (p. 5).

For these authors, the internationalization of higher education is both an integral part of the phenomenon of globalization, and is helping develop solutions to the flow of knowledge and the exchanges of researchers and students in a globalized world.

In Europe, the Bologna Accords, signed by forty-five European state members, have considerably contributed to harmonizing and internationalizing higher education, helping with the mobility of students and researchers. At the same time, the European Union (EU) has developed “key competences”, a set of: “*knowledge, skills, and attitudes that will help learners find personal fulfillment and, later in life, find work and take part in society.*”<sup>1</sup> These key competences cover communication in one’s mother tongue, foreign language proficiency, digital skills, and basic skills in math and science, as well as “horizontal” competences such as learning to learn, civic and social responsibility, initiative and entrepreneurship, cultural awareness, and creativity. It is in this context that cross-border mobility and co-operation are currently seeing enormous growth across Europe. The objective is ambitious: with the Erasmus+ program, the European Council has decided to increase by 20 % the number of students studying abroad by 2020<sup>2</sup>.

In Switzerland, participation in EU training programs represents one of the priorities of the international strategy for training and research. The Swiss Secretary of State for Training, Research and Innovation (SEFRI), emphatically supports these international exchanges: “*Thousands of*

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1 <[http://ec.europa.eu/education/policy/school/competences\\_fr.htm](http://ec.europa.eu/education/policy/school/competences_fr.htm)>.

2 <[http://ec.europa.eu/education/policy/higher-education/mobility-cbc\\_fr.htm](http://ec.europa.eu/education/policy/higher-education/mobility-cbc_fr.htm)>.

*young Swiss students have been able to enrich their training in recent years with a placement abroad, and thousands of young foreigners have been able to undertake a training placement in Switzerland. As of 2013, mobility programs have opened the door to other European countries for more than 7000 young Swiss people*<sup>3</sup>. At the present time, following the positive approval of the initiative against mass immigration on February 9, 2014, negotiations for Swiss membership of the Erasmus+ program have been suspended, and Switzerland is now considered to be a third country by the EU. However, the Swiss authorities wish to maintain their alignment with the European goals regarding mobility: the “Swiss Universities’ Strategic Plan 2017–2020”<sup>4</sup> adopted by the body representing university rectors on, December 10, 2014, also has a 20 % increase in student mobility as a target by 2020: “*The promotion of the mobility of students is one of the principal objects of the Bologna Process. It has been decided, during the ministerial conference of 2009, that at least 20 % of students should be mobile by 2020*” (p. 17).

To try to meet this objective, a specific program has been put in place: the Swiss-European Mobility Program (SEMP), which offers conditions similar to Erasmus+ for the exchange of students and teachers.

Teacher training is also undergoing profound changes in line with the “universitarization” of institutions. Vanhulst, Petitpierre and Macherel (2012) highlight this in the introduction to the strategic plan 2012–17 of the University of Teacher Education of State of Vaud (HEP Vaud): “*The universitarization of teacher training is now clearly evident in western countries*” (p. 11). At the same time, these teacher training institutions, like other university institutions, are also now concerned with the internationalization of their training offers, and their support for the development of research and innovation.

In this environment of change, the HEP Vaud, a teacher training college in Lausanne, Switzerland, wishes to actively promote international

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3 <<http://www.sbf.admin.ch/themen/01369/01689/index.html?lang=fr>>.

4 <[https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Kammern/Kammer\\_UH/Strategische\\_Planung\\_17-20\\_CRUS\\_franc%CC%A7ais-210115.pdf](https://www.swissuniversities.ch/fileadmin/swissuniversities/Dokumente/Kammern/Kammer_UH/Strategische_Planung_17-20_CRUS_franc%CC%A7ais-210115.pdf)>.



exchanges. Its action plan for 2012–17 contains a strategic goal entitled “*Opening up more to the outside world*”. This is introduced as follows:

We intend to develop international relationships and the mobility of teachers and students to ensure that the training and research programs of the HEP Vaud are enriched, to promote its research output, and to reinforce its presence in the international arena (Vanhulst, Petitpierre & Macherel, 2012, p. 44).

In this spirit, the HEP Vaud integrated into its training offer a program of semesters abroad supported by the SEMP program, but after a few years it became apparent that the institution would not meet its target of 20 % student mobility by 2020 with this single program alone. During the first decade of the century, few student teachers were willing to undertake a placement abroad for a semester. This observation triggered discussion about diversifying the mobility offer, and about new forms of exchange that would be different from traditional semesters abroad, and more adapted to the present challenges of teacher training. This resulted in the creation by Gilles, Gutmann, and Tedesco (2012a, 2012b) of the PEERS program (the *Projets d’Etudiants et d’Enseignants-chercheurs en Réseaux Sociaux*, or Student and Teacher-Researchers Social Networks Projects), which has been in place since 2011–12 at the HEP Vaud in collaboration with its network of partner institutions. As we will see in the following sections, the PEERS program represents a real innovation regarding international exchanges within the domain of the training of teachers.

We will describe the key aspects of the program in the rest of this chapter, which begins the introductory part of our collective book “*Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*”. With two others introductory chapters this chapter is part of Part 1, “*Issues, Opportunities, and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural, and Connected World*”. Concrete examples of PEERS projects will then be presented in the six chapters of Part 2, “*Case Studies and Lessons Learned from the PEERS Project in Southern Countries*”, and in the next seven chapters of Part 3, “*Results of Research-Oriented PEERS Projects*”. Finally, to conclude, we will return to the innovative

characteristics in Part 4 with the last chapter, “The PEERS Program: a New Way to Internationalize Teacher Training”.

### 3. Characteristics and Original Aspects of the PEERS Program

The PEERS program was born out of a reflection upon new forms of the internationalization of teacher training, taking into account a series of fundamental challenges that will be detailed in the following section of this chapter. PEERS aims to offer an original and coherent institutional framework to support the mobility and international projects of both teachers and students within the context of teacher training at a university level.

From a very pragmatic point of view, it equally aims to counteract the difficulties that future teachers meet when they wish to benefit from an international experience during their training journey, but experience real difficulties in moving away from their environment for several months and separating themselves from their training institution program (traditional studies and placements). This is the reason why we have preferred a concept of program internationalization relying on the one hand upon two short one-week placements with a partner institution during periods of the academic year when teaching is suspended, and on the other upon remote collaborations between these placements. The program as a whole is based upon the completion of international collaborative projects focused on Research and Innovation (R&I).

In its foundations, PEERS is inspired by Dewey (1897, 1899) and Kilpatrick’s (1918) project method and influenced by the development of projects approach in vocational education (Knoll, 1997) and also by contemporary adaptations of the method especially in the context of higher education (Pecore, 2015), with the particularity that here the trainer, the teacher-researcher who is supervising the students, is an integral part of an international R&I project group. PEERS encourages trainee teachers to experience a degree of autonomy that may vary from one project to

another, but which always remains very high. The autonomy and the collaborative atmosphere apparent in these R&I educational projects, where everyone is a stakeholder, is a strong motivator. In the majority of cases groups are made up of six students and two partner institutions, with three students from each institution (but this can be as many as six), supervised by two teacher-researchers, one from each institution.

We also wanted to reduce as much as possible the cost of the two one-week placements in the partner institutions by having the rule that the members of the international group stay with one another. Most of the time participants pair up naturally: one student welcomes another student from a partner institution at his home. Teacher-researchers also abide by this rule and it is recommended that they host one other in their own homes. Besides reinforcing links within the international group, this practice naturally encourages the development of intercultural competencies.

At the University of Teacher Education of State of Vaud (HEP Vaud) where the PEERS program was created, every academic year since 2011–12 a series of international groups, most often made up of eight people, have formed in this way following the initiative of pairs of teacher-researchers who are working in similar fields of research. In most cases, teacher-researchers know each other already through their work and exchanges (Gilles, Gutmann & Tedesco, 2012a).

With regard to the running of a PEERS project, during the preparation phase, the very first task for the teacher-researchers is to establish an R&I topic in education and to inform their students of the possibility of participating in an international project linked to this topic within the framework of the PEERS program. Each teacher-researcher then makes a selection among the candidates.

Once the international group has been formed, the first contact between members is made with the help of available Web 2.0 tools (social networks, email, instant messaging, etc.). During this second stage the initial discussions usually take place by videoconferencing, with the goal of getting to know one another and to outline the topic. This is the time when the R&I project is defined and analyzed. The international group then takes time to clarify research questions and hypotheses before drafting objectives, methods, and the work schedule. All kinds of questions relating

to the management of the project are raised at this stage and must be resolved through remote collaborative work with the help of ICT, with all the intercultural complexity of these interactions, sometimes in a second language, and this is why English is therefore preferred. A record of decisions and activities is kept in shared online storage. This phase of the project is a kind of “team building” and analysis stage.

The third stage is the first one-week placement with the partner institution. This placement will have been prepared previously through remote discussions. The program for the week includes activities linked with the project, but also activities for learning about the education and training system (visits to schools, training centers, and places connected with the training of students). Cultural visits and recreational activities are also proposed outside of the work program. This first face-to-face week is obviously very productive from the point of view of project progress, but also with regard to learning and intercultural exchange.

Following this placement with the partner institution, the project is generally implemented in the field during the fourth stage and data collection can begin based on what has been planned. The collaboration with the international group does not stop there however and continues with the help of ICT. The PEERS program thus involves an alternation between periods of face-to-face work with periods of online exchange, and therefore the tools of Web 2.0 are an absolute necessity for these real-life situations of distance collaboration.

The fifth stage is the second one-week placement, which takes place during the second semester of the academic year, when the partners who had been invited in the fall become hosts in their turn to the other members of the international group. As with the first placement, the program for the week is prepared in advance and is composed of three elements: activities linked with the current project, sociocultural activities, and recreational activities. Generally, discussions revolve around the analysis of data and the structure of a report, or even an academic paper.

After this second placement comes the sixth stage, the final period of remote collaboration. This involves the group completing the analysis of data and collectively drafting the final publication that will present the

results of the PEERS project. The table below summarizes the stages in creating a PEERS project.

Table 1. Stages in Creating a Project Within the Framework of the PEERS Program.

	<i>Stage</i>	<i>Description</i>
1.	Preparation	Before the beginning of the academic year, two teacher-researchers from partner institutions agree on a theme and define a student audience. These are then contacted and a selection is made.
2.	Team building and analysis	At the beginning of the academic year the students from the international group get to know one another with the help of ICT and Web 2.0 tools. They discuss the theme, refining this with the teacher-researchers, and prepare the first placement.
3.	First one-week placement	The first placement in the partner institution usually occurs at the end of October. Three kinds of activity are organized: work on the content of the project, sociocultural activities, and recreational activities outside of work.
4.	Remote collaboration	Between the end of October and the second placement collaboration is online with the help of ICT and Web 2.0 tools. Activities are organized according to the objectives and the work schedule.
5.	Second one-week placement	A second placement during the spring semester enables the international group to continue their collaboration face-to-face. As with the first placement, three kinds of activities are organized with a focus placed on the analysis of data collected, and the drafting of the structure for the final report.
6.	Remote analysis of results	The remote collaboration aims to present the report for the end of the project in its definitive form. When time allows: preparation of presentations and communications, and ideally plans to publish an academic paper.

An opportunity to share results and practices has been organized at the end of the academic year from the very first session of the PEERS program in 2011–12. This event, called the “PEERS Summer Symposium”, occurred for the first time in June 2012 during the 17<sup>th</sup> Congress of the World Association for Educational Research (WAER) at the University of Reims in France (Gilles, Gutmann & Tedesco, 2012b). In following years, the

PEERS Summer Symposium was organized in different countries: in July 2013 in the United States at the San Diego State University, in July 2014 in Belgium in partnership with SwissCore<sup>5</sup> in Brussels, in June-July 2015 in Switzerland at the HEP Vaud in Lausanne, and in May-June 2016 in Turkey as part of the 18<sup>th</sup> Congress of the WAER at Anadolu University in Eskisehir. On each occasion, these PEERS Summer Symposiums have allowed teacher-researchers interested in this approach to share their results and to reflect on the supervision and management of the international groups at the heart of the PEERS program.

Since the academic year 2011–12, no fewer than 81 PEERS projects have taken place following the initiative of the HEP Vaud. Up until 2015–16, the HEP Vaud has always been a partner in each project. From 2011 until 2017, more than 480 students have been involved in the PEERS program. The table below shows the evolution of PEERS partners since the HEP Vaud began the program in 2011–12.

Table 2. The Evolution of PEERS Partners 2011–2017.

<i>Partner Institutions of the HEP Vaud, Switzerland</i>	<i>Partner Countries</i>
<u>In 2011–12, 4 PEERS projects with 3 institutions in 2 countries:</u> Humboldt State University (HSU), San Diego State University (SDSU), Universidad Simón I. Patiño (USIP).	Bolivia and USA.
<u>In 2012–13, 8 PEERS projects with 6 institutions in 5 countries:</u> Ecole Normale Supérieure de Koudougou (ENSK), Humboldt State University (HSU), Lesley University (LU), National Institute of Education (NIE), San Diego State University (SDSU), Universidad Simón I. Patiño (USIP).	Bolivia, Burkina Faso, Singapore and USA.

5 SwissCore is the Swiss Contact Office for European Research Innovation and Education. It acts as a bridge between Swiss and European knowledge institutions and supports Swiss participation in European knowledge programs (<[www.swisscore.org](http://www.swisscore.org)>).

<i>Partner Institutions of the HEP Vaud, Switzerland</i>	<i>Partner Countries</i>
<p><u>In 2013–14, 9 PEERS projects with 9 institutions in 7 countries:</u>            Ecole Normale Supérieure d’Antananarivo (ENSA), Haute École de Liège, Catégorie Pédagogique (HEL-P), Humboldt State University (HSU), Lesley University (LU), National Institute of Education (NIE), San Diego State University (SDSU), Universidade Pedagógica de Maputo (UPM), Universidad Simón I. Patiño (USIP), Universitat Ramon Llull – Blanquerna (URL-B).</p>	<p>Belgium,            Bolivia, Spain,            Madagascar,            Mozambique,            Singapore and            USA.</p>
<p><u>In 2014–15, 15 PEERS projects with 13 institutions in 13 countries:</u>            Ecole Normale Supérieure d’Antananarivo (ENSA), Ecole Normale Supérieure de Koudougou (ENSK), Ecole Supérieure du Professorat et de l’Éducation de l’Université de Bordeaux (ESPE UB), Haute École de Liège, Catégorie Pédagogique (HEL-P), Humboldt State University (HSU), National Institute of Education (NIE), San Diego State University (SDSU), Universidade Pedagógica de Maputo (UPM), Universidad Simón I. Patiño (USIP), Universitat Blanquerna Ramon Llull (UBRL), Université Cadi Ayyad (UCA), University College South Denmark (UC SYD), University of Eastern Finland (UEF Joensuu).</p>	<p>Belgium,            Bolivia,            Burkina Faso,            Spain, Finland,            France, Ireland,            Madagascar,            Morocco,            Mozambique,            Singapore and            USA.</p>
<p><u>In 2015–16, 19 PEERS projects with 17 institutions in 13 countries:</u>            Dublin City University (DCU), Ecole Normale Supérieure d’Antananarivo (ENSA), Ecole Supérieure du Professorat et de l’Éducation de l’Université de Bordeaux (ESPE UB), Ecole Supérieure du Professorat et de l’Éducation de Versailles (ESPE Versailles), Haute École de Liège, Catégorie Pédagogique (HEL-P), Haute École Galilée (ISPG), Humboldt State University (HSU), Laurea University of Applied Sciences (LAUREA UAS), Universidade Pedagógica de Maputo (UPM), Universidad Simón I. Patiño (USIP), Universitat Blanquerna Ramon Llull (UBRL), Université Cadi Ayyad (UCA), Université de Caen-Normandie (UNICAEN), Université du Québec à Montréal (UQAM), Université de Tirana (UNITIR), University College South Denmark (UC SYD), University of Eastern Finland (UEF Joensuu).</p>	<p>Albania,            Belgium,            Bolivia,            Canada,            Denmark,            Spain, Finland,            France, Ireland,            Madagascar,            Morocco,            Mozambique            and USA.</p>

<i>Partner Institutions of the HEP Vaud, Switzerland</i>	<i>Partner Countries</i>
<p><u>In 2016–17, 25 PEERS projects with 15 institutions in 11 countries:</u>            Dublin City University (DCU), Ecole Supérieure du Professorat et de l'Éducation de Bretagne (ESPE Bretagne), Ecole Supérieure du Professorat et de l'Éducation de Versailles (ESPE Versailles), Ecole Supérieure du Professorat et de l'Éducation d'Aquitaine (ESPE Aquitaine), Haute École de Liège, Catégorie Pédagogique (HEL-P), Humboldt State University (HSU), SUPSI Ticino, Universidade Pedagógica de Maputo (UPM), Universitat Blanquerna Ramon Llull (UBRL), Université Alexandru Ioan Cuza, Iasi (UAIC Iasi), Université de Caen-Normandie (UNICAEN), Université du Québec à Montréal (UQAM), Université Catholique de Louvain-La-Neuve (UCL), University College South Denmark (UC SYD), Winchester University.</p>	<p>Belgium,            Canada,            Denmark,            Spain, France,            Great Britain,            Ireland,            Mozambique,            Romania,            Switzerland            and USA.</p>

We should also highlight the great diversity of themes covered. These have included, for example, the “Lesson Study” approach in mathematics, the comparison between different sports in Physical Education, multicultural education, bilingualism in core teaching, Freinet’s pedagogy, the grading and assessment of the transfer of learning during training, musical pedagogy and psychology, education for sustainable development, and the role of the teaching of science on the learning of marginalized students, etc.

Aside from the various reports produced from each project, the PEERS program has also resulted in a number of different publications and communications (Gilles, Gutmann & Tedesco, 2012a, 2012b; Gilles, 2014; Gilles & Soldevila, 2014a, 2014b; Gilles, 2015; Gilles & Soldevila, 2016; Chochard, Gilles & Rupp-Nantel, 2016), which have led to interest from European and North American associations who are active in the domain of international exchanges, such as ERACON, Comenius, NETT, and CBIE.



## 4. Six Basic Challenges for the PEERS Program

For some twenty years, the internationalization of higher education has become a field of study in its own right for researchers and practitioners seeking to analyze, explain, and propose internationalization strategies within institutions (Bohm, Davis, Meares & Pearce, 2002; Agarwal, Said, Schoole, Sirozie & de Wit, 2007; Townsend & Bates, 2007; Cornelius, 2012).

The world of teacher training has not escaped from this trend, notably due to a growing awareness that teachers are the actors at the center of a high quality education for all who must encourage children and adolescents to gain the essential knowledge and skills for social and economic integration in a globalized and changing society (Mahon, 2010; Sieber & Mantel, 2012; Leutwyler, 2014).

### *4.1 Developing the Intercultural Competencies of Future Teachers*

The effects of globalization put back at the forefront the question of the intercultural competencies of future teachers (Pease, 1993; Davis, 1997; Kitsantas & Meyers, 2002; McCormack, 2004; Lewis & Niesenbaum, 2005; Reyes & Quezada, 2010). In a European context, Dooly and Villanueva (2006) have this to say on the subject:

The European Union has recognized the need for promoting social and political change through education. Special emphasis has been placed on the role of schools in personal and human development, along with the need for greater understanding of the diversity, which makes up the European Union and throughout the world. This means that teachers are now expected to involve learners in the process of acquiring knowledge of their own culture(s) as well as other cultures (p. 223).

In the same vein, following a large review of the literature aiming to identify the advantages offered by international exchanges during teacher training, Leutwyler (2014) indicates that it is commonly accepted that three facets of intercultural competencies of future teachers are affected:

knowledge concerned with an understanding of the influence of culture on teaching, an awareness of the cultural diversity within the world of education, and finally the feeling of personal effectiveness when managing a multicultural class. Leutwyler (*op. cit.*, p. 112) also notes that some studies show a greater motivation to teach after an international exchange. Some positive effects on the competencies of future teachers with regards to the intercultural management of classes have also been observed in the literature (Deardorff 2006; Dooly & Villanueva, 2006; Parkes & Griffiths, 2008; Kissock & Richardson (2010); Quezada, 2010). As with most international exchange programs, the PEERS program offers the possibility for trainee teachers to develop their intercultural competencies, which will be particularly useful when they are faced with managing groups of multicultural learners.

#### *4.2 Training Future Teachers to Work Collaboratively at a Distance Through Real-Life Situations in a Globalized Connected World*

Another facet of the globalized world in which we live is the omnipresence of ICT in the activities of citizens from the majority of developed or emerging countries, or even in developing countries when the telecommunications infrastructures and access to the internet allow for this. The youngest among us who were born after the digital revolution at the end of the twentieth century could easily even forget that the advent of digital networks and the web are recent inventions. On the other hand, their older counterparts, who were born and lived before this digital era, have difficulties mastering the codes, and the technical and sociocultural changes in what seems to be a new world. Some feel that they are falling behind the new “plugged in” generation. This turmoil and rapid evolution has an impact on our educative systems that were thought out and organized during the last century. Now, at the beginning of the twenty-first century, teachers are confronted with children and adolescents who are constantly connected “Digital Natives”, as they are termed by Prensky (2001), who claims that there has been a radical change at the heart of student populations:

It is amazing to me how in all the hoopla and debate these days about the decline of education in the US we ignore the most fundamental of its causes. Our students have changed radically. Today's students are no longer the people our educational system was designed to teach [...]. A really big discontinuity has taken place. One might even call it a "singularity" – an event, which changes things so fundamentally that there is absolutely no going back. This so-called "singularity" is the arrival and rapid dissemination of digital technology in the last decades of the 20<sup>th</sup> century (p. 1).

To learn to effectively teach the young people who have been born during the digital era, we must re-think our approach to the training of future teachers. It is crucial for them to have real-life experiences of collaborative work at a distance and to allow them to develop competencies in this domain so that they become more effective and credible when they are managing pedagogical activities with their "Digital Native" students. Working in a team at a distance with the help of ICT is a strong component of the PEERS program which offers the opportunity of a real-life experience of online collaboration within the framework of a collective research focused project. This aspect of the PEERS program is original and innovative, and distinguishes it from the majority of other international exchange programs.

#### *4.3 Developing a Culture of Continual Improvement of Didactic and Pedagogical Activities Through the Reflective Thinking and the Spirit of Research*

The "continuous quality improvement" approach, theorized and put in practice within organizations, as discussed in the work of Edward Deming (1986) deserves, in our opinion, to be discussed and developed within the contexts of training and the practices of trainers and learners. The idea that it is better to adopt processes that generate quality, rather than control assessments after the fact, can be applied to all kinds of activities, including teaching and training. The process of the acquisition and implementation of competencies within the context of learning pathways fits well with a continuous improvement approach when we propose implementing an approach of reflection and self-

evaluation with regard to the quality of knowledge acquired during training and its transfer to professional activities. This approach is in fact commonly practiced in teacher training institutions, when reflective thinking, as outlined by the reflective practice approach, is recommended to teacher trainees (Schön, 1993). These reflective exercises are also recommended by a number of researchers who highlight their importance (Day, 2001; Paquay & Sirota, 2001; Zay, 2001; Wentzel, 2008; Dervent, 2015). Within such a framework, it seems essential to us that student teachers are actively involved in the research of the teacher-researchers who are training them. The position of Sayac (2013) illustrates our view in this regard very well:

The initiation into research proposed to teachers in the context of their initial training is not, in itself, a specific part of training, but it targets the same objective of the development of reflective analysis through placing in parallel or within a co-construction the position of the reflective practitioner and the position of the researcher who we want to initiate the students (p. 3).

In a similar vein, we agree with the position of Schön (1993, p. 25): “*the knowledge from experience in class and at school builds into a spirit of research that develops the exercise of reflective analysis*”. Beyond the initiation into research and the co-construction of new knowledge, by allowing them to participate in an international R&I project, we are reinforcing these training practices during the learning pathways of our students. It is a question of allowing trainee teachers, through the PEERS program, to begin to take the steps of the continuous improvement of their pedagogical and didactic activities based on reflective practices and guided by the spirit of research that they acquire progressively in the course of the project, and of which they are active participants alongside their teacher-researchers within the international group.

Parallel to the aspects that we have just mentioned within the context of student training, the initiative towards internationalization that we are proposing also responds to the needs of our teacher-researchers in teacher-training university institutions.

#### *4.4 Supporting Efforts to Put Research-Training in Place and Build New Relationships Within Practice Through PEERS Projects*

In the context of “*universitarization*” of teacher training (Vanhulst & al., 2012), trainers in teacher training institutions have been progressively transformed into teacher-researchers within universities of teacher training. Within institutions that have evolved in the same way as the HEP Vaud, professors are now participating in the building of the knowledge that they are charged with teaching, which brings to the fore the question of the connections between knowledge derived from their research and knowledge derived from teacher practice in the field. Altet (2012) insists upon the importance of the connections between these different forms of knowledge and the construction of the professional identities of trainee teachers. She outlines what we feel is a key concept within the framework of the PEERS program, “Building another relationship to practice through research”:

In this respect, knowledge from research allows one to build another relationship to practice and to develop, through reflection, a cautious attitude, analytical thinking, and a ‘praxis’, that helps one to move away from conventional wisdom (Altet, 2012, p. 40).

By supporting collaborative work between students and teacher-researchers, and at the same time encouraging partnerships with practitioners in the field, PEERS projects contribute to the weaving of new relationships between these categories of actors co-producing knowledge within international groups.

#### *4.5 Offering a Framework for the Development of Competencies for the Management of International Academic Projects for Teacher-Researchers*

In a globalized world, the *universitarization* of teacher-training institutions such as the HEP Vaud means that they are also charged with developing international relations more than they did in the past. This

means developing partnerships with other teacher training institutions, notably in the field of research, and encouraging their teacher-researchers to become actively involved with this by instigating or participating in international research projects. The section of the 2012–17 action plan concerned with the strategy “Opening up more to the outside world” thus states:

We intend to develop international relationships and the mobility of teachers and students to ensure the enrichment of HEP Vaud training programs and research, to promote its research and professional output, and to reinforce its presence at the international level (Vanhulst, Petitpierre et Macherel, 2012, p. 44).

Participation in networks and international partnerships is also taken into account with regard to promotions. Teacher-researchers are thus made aware of the importance of developing these research partnerships with colleagues from foreign institutions, and have a close interest in the possibilities offered by exchange and mobility programs that target the academic body. In this context, the PEERS program offers new possibilities that respond to the needs of teacher-researchers: they work on an international project focused on research with a colleague from a partner institution, and considerably develop their skills for managing international R&I projects through concrete experiences during the academic year.

#### *4.6 Promoting International Professional and Research Publications*

The ultimate goal of projects led by international groups participating in PEERS programs is to share the results of their research. As contexts differ widely from one project to the next, some teacher-researchers will produce a report where others will go as far as publishing results within an international academic journal. The PEERS program offers a stimulating framework for the sharing of results and for publication, which is fundamental to all researchers. The implementation of a PEERS project allows the ideas and approaches used to be enriched through argument and discussion. The results obtained are also communicated

and then developed and enriched by teacher-researchers from partner institutions to provide material for international publications in professional or research journals. The PEERS program represents an opportunity to add to one’s publication portfolio, which now plays a fundamental role during the different stages of an academic career as teacher-training institutions have become more university-like in their approach.

In terms of effectiveness, traditional international exchange programs of the “one semester abroad” kind do not allow participants to experience the six fundamental challenges that we have just described (4.1–4.6) and which show the richness of the Student and Teacher-Researchers Social Networks Project (PEERS) run since 2011 by the HEP Vaud in Switzerland in partnership with the institutions from its international network.

In synthesis, we have summarized the objectives of the PEERS program with the help of the schema below, distinguishing between those concerning students (teacher trainees), and those concerning the teacher-researchers who train them in a university context.

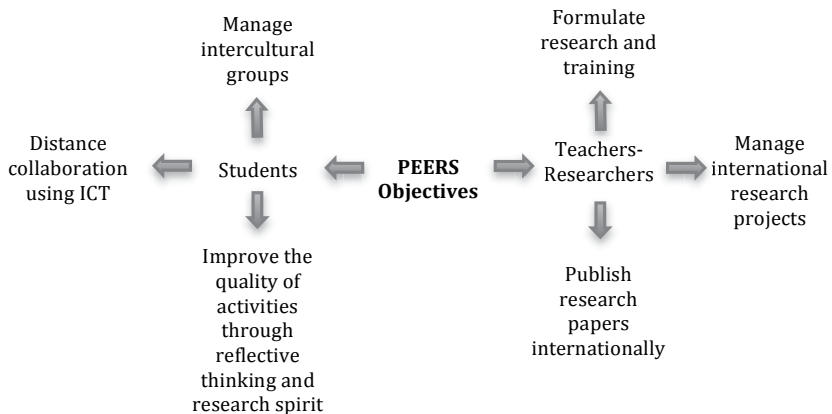


Figure 1. The objectives of the PEERS program (*Projets d’Enseignants-Chercheurs et d’Etudiants en Réseaux Sociaux*, or Student and Teacher-Researchers Social Networks Project) within teacher-training institutions that are becoming university-like in a globalized, multicultural, and connected world.

On the basis of these reflections informed by the accumulated experience of six years (2011–17), we propose the following definition:

The PEERS program proposes international exchanges adapted to the context of teacher training institutions wishing to take advantage of internationalization in order to link training, research, and practice. PEERS is based on the completion of Research and Innovation (R&I) projects during the academic year, during which international groups of professors and students from teacher training partner institutions collaborate remotely as well as during two placements of one week. For the students, the PEERS program aims to develop competencies in distance collaboration with the help of Information and Communication Technology (ICT), the management of intercultural groups, and the continuous improvement of their activities through reflective thinking and the spirit of research. For the professors, the PEERS program aims to better link research and training, to foster opportunities for international publications, and to reinforce their skills in the management of international research projects.

## 5. Conclusions

The duration of a PEERS program is fixed at one academic year. This allows for the development of Research and Innovation (R&I) projects, which in most cases go through different phases of scientific research, from the formulation of a theoretical framework, questions and hypotheses, through to the drafting of conclusions, the development of data collection instruments, the collection of data itself, and the analysis of results. To experience and complete these stages in the company of teacher-researchers and within an international context is extremely useful for the training of our future teachers. The environment proposed by the PEERS program favors working towards continuous quality



improvement of their professional activities, by guiding them to exercise the reflective practice and research spirit necessary to the success of their professional activities.

Active involvement in “full-scale” R&I projects is also very motivating for the students. In these conditions, the use of Web 2.0 tools occurs in a real-life context where remote collaboration would be impossible without the use of technology. Motivation and the real-life situation accelerate and increase deep learning. The international context and the nature of R&I also allow for the development of team project management skills, and to become familiar with collaborative work online, competencies that are particularly useful in a globalized and connected world in the beginning of the twenty-first century.

All this is supplemented by the traditional intercultural dimension of an international exchange program. During their remote exchanges and the placements with their partners, students become aware of realities that are sometimes quite different to their own, in particular when partners come from developing countries (around one third of the projects). According to Leutwyler (2014), three aspects of intercultural competencies of trainee teachers are affected by international exchange programs: knowledge concerned with an understanding of the influence of culture on teaching, an awareness of the cultural diversity within the world of education, and the feeling of personal effectiveness when managing a multicultural class. These intercultural dimensions are particularly present during social activities included in the one-week placements with the partner. The aspect of mutually providing accommodation reinforces the discovery of the reality of everyday life for “the other”. To help another person discover your region, explain its cultural and socioeconomic particularities, and share moments of friendship are all aspects of the PEERS program that enrich the participants and leave lasting traces on the development of their intercultural competencies.

For teacher-researchers from teacher-training institutions that are becoming university-like, the possibility of developing their collaboration network is one of the possibilities offered by standard mobility programs. However, beyond the discovery of other research horizons, the opportunity to manage an international project involving

trainee teachers and practitioners as well as the chance to publish results with their project partners constitute the particular advantages and innovative aspects of the PEERS program.

It is thus evident that the PEERS program distinguishes itself from other international exchange programs in the world of teacher training. It is situated at the heart of key issues that it tries to connect: support for research and innovation carried out by teacher-researchers, improved understanding of training-research-practice, and the development of international collaborations. All of these efforts undertaken to develop and implement a new form of internationalizing teacher training through the PEERS program have the same goal: to contribute to the improvement of the training of our future teachers at the beginning of the twenty-first century. We harbor the hope that the PEERS program will contribute to the development of competencies within them that will allow them to become more educated and informed people, able to collaborate intelligently and exercise critical thinking in a globalized, multicultural, and connected world.

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## Chapter 2: The Building of Europe: A Humanist Undertaking

### **Abstract**

The aim of this chapter is to outline the ways in which the building of Europe has been a profoundly humanist undertaking. We start by describing the extremely difficult situation in Europe in 1950, and then go on to analyze the historic significance of the Monnet-Schuman Declaration, which led to the launch of the European Community in 1952. We give a general summary of how the building of Europe unfolded, showing the degree to which respect for Member States is a cardinal principle of this process and underlining how it gave citizens their freedom. We then take a look at the more specific areas of education, research, and innovation, linking them with the HEP Vaud PEERS program. We end by identifying the major challenges facing the people of Europe.

### 1. The Situation in Europe in 1950

Until the mid-20<sup>th</sup> century, war was a major defining factor in Europe. The continent had only seen two periods of prolonged peace between the major powers since the beginning of the 16<sup>th</sup> century – the first between 1815 and 1854 and the second between 1871 and 1914. The two World Wars that ravaged Europe and the rest of the world in the first half of the 20<sup>th</sup> century led to the deaths of 70 to 80 million people and left countless wounded. War is also synonymous with the destruction of infrastructure, economic barriers, ruin, the disintegration of the social fabric, the rise

to power of tyrannical regimes, and moral scars. This led the writer Paul Valéry to declare: “We later civilizations [...] we too now know that we are mortal.” And this was written even before Auschwitz and Hiroshima left their indelible mark.

The risk of war and awareness of this were particularly pronounced in the spring of 1950, and indeed the Korean War was to begin at the end of June. When the Second World War ended and the Cold War began, mainland Europe had been divided and had lost power over its destiny. The United States and the Soviet Union had taken charge of Europe and a large proportion of the rest of the world.

Now under U.S. protection, Western Europe had to contend with different models for structuring international relations. First, there was the hegemonic model. Historically speaking, attempts by one European power to obtain hegemony over all the others had led to wars and had never ended in success. The reason for this is easy to understand: this type of system would only satisfy the potential hegemon. We could say that a kind of hegemony was exercised by the United States after 1945. Then came the balance of powers model – but changing coalitions rendered this unstable, ultimately ending in war. The leadership model, where the major powers shared leadership, was hard to sustain over the long term and was particularly unfair to small nations. The confederate model, enabling nations to retain a right of veto with regard to joint decisions, appeared too weak to address any issues other than technical ones. And finally the federal model, characterized by the delegation of sovereignty to joint institutions and the advent of supranational law, was difficult to reconcile with the resilience of national sovereignty.

The experience of the mid-to-late 1940s had proved the impossibility of launching any overall federal initiative across Western Europe. We need only think of the discussions that took place around the creation of the Council of Europe. At the time, Germany was still a source of great mistrust for its neighbors. The disastrous precedent of the Versailles Peace Conference in 1919 resulted from that same mistrust of the great power of Central Europe.

## 2. Historic Significance of the Declaration of May 9, 1950

Acting in his personal capacity, the Frenchman Jean Monnet, assisted by a number of colleagues and taking just 5 weeks, devised a plan of historical importance in the spring of 1950. His project gained the political support of the French Minister of Foreign Affairs, Robert Schuman, and then the French government. He obtained the agreement of the young Federal Republic of Germany and the allies of France. The Declaration was made public on May 9, 1950.

Here are some selected excerpts from the Declaration:

Europe will not be made all at once, or according to a single plan. It will be built through concrete achievements which first create a de facto solidarity. The coming together of the nations of Europe requires the elimination of the age-old opposition of France and Germany [...]

The French Government proposes that Franco-German production of coal and steel as a whole be placed under a common High Authority, within the framework of an organization open to the participation of the other countries of Europe [...]

By pooling basic production and by instituting a new High Authority, whose decisions will bind France, Germany and other member countries, this proposal will lead to the realization of the first concrete foundation of a European Federation indispensable to the preservation of peace.

The Monnet-Schuman plan retained the federal organization model, but based on a progressive approach. It involved starting the process of integration via two key sectors of the economy at the time – coal and steel – which were at the heart of the countries' war effort. The European Federation stood for the vision, whereas the path taken involved a progressive and realistic approach that would create a new dynamic between nations. The law, the creation of common institutions, and a partial sharing of national sovereignty were important here. The plan was unique and the implementation of the Declaration led to the birth of the European Coal and Steel Community (ECSC) in 1952.

### 3. How the Building of Europe Unfolded

Launched in the autumn of 1950 to combat the persistent problem of the rearmament of Germany in a Cold War that had become a major threat, the plan for a European Defense Community (EDC) was crushed by a vote of the French National Assembly in 1954. This vote was evidence of the high level of sensitivity of national sovereignty. Safety and defense issues would therefore come under national and transatlantic rather than European jurisdiction.

The revival following the failure of the EDC led to the two Treaties of Rome, signed in 1957, prolonging a sectoral Europe with the Euratom Treaty and the plan to create a European Economic Community with a customs union; free internal movement of goods, services, people, and capital; and a common trade, competition, and agricultural policy.

Over the decades, development in Europe has been shaped by a series of crises and recoveries. With the Treaties of Rome, there was a noticeable weakening of the method of integration, entailing a distancing from federalism and accommodating the resilience of national sovereignty. There were various geographical expansions, bringing the number of Member States from six in the beginning to today's 28, 19 of which are in the Euro zone.

Integration deepened with the change from Common Market to single market; the development of common policies; the creation of the Euro and an area of freedom, security and justice, and the development of common economic governance. The communities evolved into the European Union (EU), which was born in 1993, demonstrating that there is an increasingly powerful political dimension to the new facets of the European project.

Nor should we ignore the existence of European organizations other than the EU – the Council of Europe and the Organization for Security and Co-operation in Europe (OSCE) in particular. These complement the institutional architecture of Europe and are important, particularly because they form a link with Russia.

#### 4. Respect for Member States

The Community method involves the Member States delegating part of their sovereignty to common institutions: the Council, European Parliament, Commission, and Court of Justice. The management of monetary policy has been federalized across 19 of the 28 Union Member States, and the European Central Bank is in charge of policy. Beyond the Community method, intergovernmental practice prevails within the EU in sensitive areas of foreign and security policy. Taxation and social policy remain governed by the unanimity rule.

European treaties may only be amended if there is unanimity between Member States. There is a political culture of entente in the sense that the exercise of power is widely consensual – it is not the norm for Member States to vote at the Council and even less so at the European Council, and that there is a sort of “grand coalition” at the European Parliament and the European Commission. Legislative processes do not move quickly. Consensus is sought through long consultation procedures, and the work of institutions takes time. Differentiated integration has also been observed over the last 20 years or so. A State that wishes to move forward at a slower rate than the others, or that is not in favor of a new development, can negotiate a special status from within the Union.

#### 5. Freedoms for the Citizens of Europe

The cornerstone of the free movement of people was laid in the treaties of the 1950s relating to employed and self-employed workers. In 1990, this was extended to citizens who are not economic agents (young, retired persons, and economically inactive people). The first step in the abolition of internal borders was taken with the Single Market program, coming to fruition at the end of 1992. This was followed by the creation of the Schengen Area. European citizenship was established by the Maastricht

Treaty in 1993. The Charter of Fundamental Rights became part of the Union's legal framework in 2009. It promotes rights relating to Dignity, Freedoms, Equality, Solidarity, Citizenship, and Justice.

## 6. Education, Research, and Innovation

Subsidiarity prevails, in the sense that the EU only works alongside States if it can bring added value. In such matters its skills are only employed where they can be shared or provided as a support for Member States. EU involvement in the fields of education, research, and innovation can contribute to the strengthening of a common identity as well as to the competitiveness and well-being of Europeans.

Horizon 2020 is the eighth EU multiyear framework program in research and innovation, covering the period 2014–20. The first was launched in 1984. The EU will be investing around 80 billion Euros during the period 2014–20. The fundamental areas of the program are scientific excellence, the prime importance of industry, and social challenges. Established in 2007, the European Research Council finances exploratory research. Social issues, such as health, the environment, transport, and security are to be the subject of interdisciplinary research work. Following a vote on February 9, 2014, Switzerland only had a partial and temporary involvement in the Horizon 2020 program. It has regained full association in 2017.

Erasmus+ is the EU education program. It is a mobility program dating back to 1987 and is very important for generations of students, 3 million of them having benefited from it since its inception. The program has around 15 billion Euros in funding for the period 2014–20. Three key initiatives have been established: mobility for learning, cooperation and partnership, and policy reform. The Swiss-European Mobility Programme (SEMP) is the Swiss program, which, due to the consequences of the vote of February 9, 2014, replaces the country's



direct involvement in Erasmus+, making it possible to finance exchanges through agreements with partner institutions.

The HEP Vaud PEERS program is a mobility program of a particular kind. It enhances European and international mobility in an easily implementable and cheap way. HEP Vaud created it specifically to meet its requirements as a teacher training institution aiming for international reach and academic status. PEERS projects allow teachers to bind training and research, to manage international scientific projects, and to publish professional literature. As for the students, they can develop their intercultural competences, use the new information and communication technologies, as well as enhance their skills through a deeper thinking and research spirit.

## 7. Major Challenges

The PEERS program has a direct influence on involved teachers and students. But the influence of the program is much wider as it creates European and international collaboration networks, brings contributions to research and the creation of knowledge and, in the end, has transformative effects through the impact on pupils. As we know, these pupils will be the citizens of tomorrow. The more citizens can understand complexity and evolve in a world characterized by rapid transformations on a global scope, the more they will have a chance to pass sound judgment on the major challenges linked to the building of Europe.

We identify these challenges as follows:

- The issue of identity. The redevelopment of a certain national identity has been observed across the continent. But European identity was never meant to replace national identities. Could a European identity develop over the long term?

- Sovereignty. To an increasing degree, the choice is not about the exercise of sovereignty at national or European level but about the possibility to exercise sovereignty through politics. How do we make the issue available and understandable to citizens?
- Economic success. Even if economic studies reveal the economic benefits of long-term integration, some economies emerged totally run down from the crisis that started in 2008. Unemployment is Europe's big problem, especially amongst young people. How do we ensure that they are not a lost generation?
- Solidarity. There is increased solidarity at European level, but is this enough? Where do we mark the boundary between Member State responsibility and overall solidarity?
- Banish war from the European mainland and meet global challenges. The EU has banished war between Member States but, over time, there is a tendency to forget the fundamental achievement that has been the building of Europe. War and the Hobbesian view of the world continue to stalk the borders of the EU. Will Europeans be able to stand up to major global challenges? Will they keep control of their destiny in a world where they are becoming less and less important, and even marginal?
- Explain the building of Europe: a wonderful plan for civilization that changed the face of Europe. Like every human plan, implementing it is naturally an imperfect enterprise, and an even greater degree of transnational democracy is required. It is quite normal for it to be subject to criticism. Citizens need to make it their own in order to improve it. To achieve this, we need to make them aware of that fact.

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## Chapter 3: Preparing Critically and Globally Conscious Teachers

### **Abstract**

This chapter explores the preparation of globally conscious teachers. Concepts of training and growth through education encompassing competencies and skills are surveyed, as is critical thinking, and autonomous learning. Implicit throughout is applied work being done by PEERS teams worldwide, linked to the University of Teacher Education, State of Vaud (HEP Vaud) in Lausanne. For global consciousness, mindfulness is crucial. Individuals must be self and locally thoughtful – linking skills, concepts, peoples, places and cultures. Teacher education takes place within permeable historical and geographical parameters, but especially political economic processes linked to top-down and bottom-up interfaces. Professional responsibility is paramount to developing awareness of processes and structures, where future teachers become critical citizens and actors. Globalization and sustainability education are highlighted, while looking at examples from a teacher education institution in Ireland.

### 1. The Challenge: work with what you have, and try to improve it – but be critically aware of contexts

Preparing critically mindful educators is challenging with accelerated revolutions in travel, communications and media. Nonetheless, basic education canons hold similarities worldwide, albeit if different emphasis is placed, as I have witnessed by living and working in educational

contexts in Europe, North America, MENA (Middle East and North Africa) and Africa (O'Reilly, 2015).

Cultural constructs concerning education have supported societies with survival and coping skills from historical and anthropological perspectives. This must be seen in contexts of location – interconnections with groups – local to regional scales and beyond; literally and metaphorically going past horizons as did Copernicus, Galileo, Columbus and Einstein. For people involved in teacher education internationally, the lexicon, discourse and canons are similar going beyond basic functional language and concepts (Aldrich, 2008; Fleer and Ridgway, 2014; Guiseppi, 2015).

### *1.1 Scoping education landscapes*

Educational cornerstones: skills based on techniques and abilities – balanced with competencies built on knowledge involves comprehension with facts, information, descriptions gained through experience, perception, discovering or learning. Knowledge can be theoretical or practical, implicit or explicit, formal or systematic. Historically Europe relied on information ranges from Greco- Roman and Judaeo-Christian traditions, and input from Islamic civilization, ranging from Plato and Socrates to Renaissance and Enlightenment thinkers, Ibn Khaldun to Wittgenstein, and post-modernists (Kontopodis & al., 2011; Quillen, 2015; Wulf, 2012). Knowledge acquisition involves cognitive processes of perception, communication and reasoning related to capacity of acknowledgement. Pursuit of knowledge is premised on quests for truth mediated through physical and human sciences, and respective methodologies; in the human condition societies have tried to give their lives a meaning mediated through arts, humanities, religions and ideologies, and ethics (Baggini and Fosl, 2007).

This involves systematizing, defining, recommending concepts and models of right and wrong, good and evil, virtue and vice, just and unjust, or criminal, and values; how should people live. Salient branches of ethics include: meta-ethics – theoretical meaning and how truth values

can be determined or not; normative ethics dealing with practical means for determining moral courses of action; and applied ethics – what an individual is obliged or permitted to do. In some traditions it is believed that basic ethics are common to all humankind as in universal declarations ranging from Rights of Man to Global Citizenship, preceded historically by universalizing religious-philosophical or ideological systems such as Christianity and Islam. Other philosophers interpret ethics as being individually and culturally relative. Without some form of ethical agreement within and between societies, violence ensues (Cavalier, 2015).

Knowledge of self, society, country and worldview is passed from generation to generation. With increasing knowledge linked to globalization, educational systems in democracies are promoting active learning to produce effective citizens. Hence the challenges: teaching and learning knowledge and skills, helping people to learn how to do things and think why they are learning and doing, and how they will apply skills and competencies to create a sustainable world. Being cognoscente of (dis)empowerment, and philosophical perspectives including Paulo Freire – of self, others and society may provide stimuli for societies to strive for democratic structures and cultures facilitating change that is long-lasting ecologically, economically and socio-culturally. Empowerment through education leads to positive development (Foucault, 2015; Lyons, 2015; Freire Institute, 2017).

Regarding discourse parameters of ‘formal education’ – kindergarten to University and curricula, there is always danger that formal structure, action and power takes precedence over active teaching and learning targeting empowerment of individuals – creating ‘rounded’ teachers with critical judgment of self and others. Formal education targets the science and art of teaching – pedagogy, and must avoid stultifying ‘educification’ whereby even the simplest, is rendered more complex and ‘school-ish’ so dulling students innate discovery learning, curiosity and fantasy. Non-formal education may be acquired by structured home-education, homework clubs, summer school, community programs and so forth.

Whether educated within formal or informal systems, or combination thereof, informal education is paramount in human development. This

includes learning from family and community ranging from self-hygiene to nutrition, handling ones budget – ‘living within one’s means’, digital dexterity, and attitudes enhancing the dignity of work. Acquired are caring for others and environment, empathy, balanced awareness of endowment and entitlement for self and others, rights and duties, and proactive approaches to self-education i.e. ‘if you don’t know something, then look it up, ask, go there and observe, think more about it’. Autonomous learning helps counteract dangers of solipsism – believing that nothing exists or can be known to exist outside one’s own mind; and anomie – breakdown of social bonds between individuals and community, where society is perceived to provide little ethical guidance.

With solipsism, individuals may form small groups, attempting to legitimate extreme actions with spurious reference to political or religious ideologies and traditions, using literalist interpretations of narratives, sacred books and mythologies as with negative fundamentalisms concerning female education. Attempted Hollywood-ization and Californication of mass culture, promoting unbridled individualism (often synonyms for egoism, selfishness, and eccentricity) is fuelled by marketing. This is impacted on by delusional X-factors and so called reality media whereby individuals including pupils, teachers and society now have to be ‘famous’ in a populist environment or else labelled ‘losers’. Kardashian spectators throughout globalizing cultures can verify this. In the bipolar – famous versus loser worldview, if you are not a millionaire then you are poor; if you do not physically fit a ‘manufactured blueprint’ then you are ugly, obese or stupid. If you do not get X number of hits on Facebook then you are boring, as illustrated with cyber-bullying. Normalization of the abnormal poses threats which teachers must be cognizant of (Arendt, 2015).

Educators have to nurture critical thinking so as to avoid totalitarian, fundamentalist and populist standpoints which encourage nihilism and dystopias. This is not to say liberal democracies have produced perfect utopias as witnessed with 21<sup>st</sup> century emerging global cultural paradoxes promoted by neoliberal capitalism and reactions of electorates to this in mature democracies as in the Swiss Immigration Referendum (2014), UK Brexit leaving the EU (2015), and US presidential election of Donald Trump (2015).

In preparing teachers, tools for criticism have to enhance student abilities: skilful judgement as to truth, merit, evidence, analysis, evaluations, actions and outcomes, and personal responsibility. Student teachers must be conscious of self – his/her own existence, self-knowledge, sensations, thoughts, surroundings, identity, physical and social environment and sources of their own educational / cultural conditioning. This involves awareness and sensitivity to others, and one's own strengths and weaknesses, active mental faculties, knowing what one is doing, and what is deliberate or intentional as opposed to instinctive. Whatever structures, actions and cultures surrounding the teacher's work environment, the professional has to teach, instruct and educate (Stanford Encyclopaedia of Philosophy, 2015).

Critical thinking involves making reasoned judgments based on logic, seeking evidence to support argument or conclusion. Students who use critical thinking ask: how, why, when, what, where, who type-questions. Core skills involve: curiosity or desire to learn more, seeking evidence and new ideas; scepticism – having a positive questioning attitude about new information, not accepting everything at face value; humility or ability to admit or accept that your opinions are wrong when faced with new evidence (Britannica Encyclopaedia Philosophy, 2015).

Mindfulness is imperative: "I know that I know nothing" (Socrates), "real world knowledge is to know the extent of one's own ignorance" (Confucius), "ignorance more frequently begets confidence than does knowledge" (Darwin), "the fool thinks he is wise, but the wise man knows himself to be a fool" (Shakespeare). George Bernard Shaw reminds us "beware of false knowledge; it is more dangerous than ignorance", and "one of the painful things [...] is that those who feel certainty are stupid, and those with any imagination and understanding are filled with doubt and indecision (Bertrand Russell). Teachers are reminded daily that: "it takes considerable knowledge just to realize the extent of your own ignorance" and that of the people being taught (Thomas Sowell); "we cannot solve our problems with the same thinking we used when we created them," so "learn from yesterday, live for today, hope for tomorrow" [...] "the important thing is not to stop questioning" (Einstein). The teacher is has to empower children, and not to stifle future

potential Socrates, Confucius, Columbus, Ibn Battuta, Mozart, Einstein, Stephen Hawkins, Bill Gates, and productive, reflective citizens, workers, teachers and parents (Education quotes, 2015).

Teachers can't work miracles, be experts in all disciplines – but they have to work with possibilities and limits of pupil's potential – ranging from special educational needs to intellectually gifted students. Teachers are cornerstone in education processes; parents and society are equally key actors – with responsibilities.

Increasingly teachers are 'delegated' by governmental and business sectors to 'handle' all social problems ranging from children from dysfunctional families, to poverty, obesity and malnutrition impeding child development, promoted by junk food culture based on consumer ignorance and marketing, lacking ethics regarding environment, people and culture. Concepts of Fair Trade and sustainability must not become simply aphorisms in class. Few people would challenge contentions that consumerism has become mantra.

Students and parents have an increasing sense of entitlement regarding perceived 'education product' with commodification, and ever-more audits, assessments, tests and media coverage, fuelled by 'hits' and 'tweets' regarding schools and teachers. If not critically evaluated, then teachers fall victim also, into the cyber-bullying category. A mismatch between student's ability and expectations, sometimes fuelled by parents, and society sectors, can lead to student lack of engagement, dropping out, and frustration in transitions from school to further education, training and employment.

Dunning and Kruger (2015) posit that there is an effect of cognitive bias where unskilled individuals suffer from illusory superiority, over judging their own ability to be much higher than is accurate. This metacognitive inability to recognize ineptitude can be challenging for teachers, especially when individuals refuse recommendations in how to improve. The Dunning-Kruger effect has its converse where highly skilled individuals tend to underestimate their competencies, mistakenly assuming that tasks that are easy for them are easy for others. They conclude that the mis-calibration of the incompetent stems from an error about the self, whereas the mis-calibration of the highly competent stems from an error about others (Dunning and Kruger, 2015).



With accelerated democratization of education access since the 1970s in Europe and North America, institutions like teachers have had to face demands of students, parents, governments and international organizations such as EU, Council of Europe and UNESCO, but also commodification of ‘education products’ for real and potential ‘clients’ nurtured by neoliberal ideals. At its most basic, education becoming a set of skills to be packaged and sold in open markets with ‘skills box and yellow packs’. Schools and universities like businesses have to be self-financing, profit making in order to continue functioning in this neoliberal worldview. This would be enhanced by private sponsorship, which by its nature sets agenda for curricula, programs and delivery of ‘product’. Individual consumers rather than public funds would have to pay for their education. Of course this neoliberal ideal has been adapted to varying degrees in many countries (Ross and Gibson, 2006).

Whether we explicitly or implicitly accept or not neoliberal models of production and consumption of education, we face challenges of regulation versus deregulation, and the so called controllers, as came to the fore during the economic crash of 2007. Many education institutions are put-upon with overemphasis on pleasing the ‘consumer’. Some observers argue that this has led to grade inflation and ‘dumbing down’ content to maintain clients and gain new markets; others have been accused of ‘the great training robbery’.

PEERS partner institutions, students and teachers gain critical awareness of their own socio-cultural and political-economic environments and that of their partners and wider educational community as is implicit in PEERS case study work.

### *1.2 Globalization and globally conscious teachers*

PEERS partners communicate, travel and work together – but what does this mean for student teachers. Globalization refers to worldwide interconnectedness between places and peoples, physically and virtually driven by economic flows, innovation and diffusion of ideas and cultures often through the medium of English. This is exemplified by flows of pop

music on a myriad of devices, and big events such as Grammy Awards. Pop music's creation location, production and diffusion worldwide offer narratives ranging from Michael Jackson to Beyoncé. TV series like *Friends* and *Criminal Minds*, or films such as *Pirates of the Caribbean*, and *Harry Potter* and *Fifty Shades of Grey* in book, kindle and movie forms promoted with Hollywood Oscars, Emmy and Golden Globe Awards are everywhere. Fashions, tastes, language, attitudes become 'normalized' whether ethical or not. News goes from national and BBC World and CNN worldviews to that of France 24, Euronews and Al Jazeera, and Facebook-spheres. Whether with music or news, messages 'pushing frontiers outwards' on ethics, individualism, human rights and environment are sent. Flows of sports images – scores, players' public and private lives, heroes and villains, scandals and advertising are 'in your face'. Students are now embedded in this whether they are cognizant or not (Britannica Encyclopaedia Globalization, 2015).

Top-down meta-structures such as the World Bank, IMF (International Monetary Fund), Davos World Economic Forum (WEF), ECB (European Central Bank) interface with the EU, NAFTA (North American Free Trade Agreement) and ASEAN (Association of Southeast Asian Nations), while governments facilitate collaboration with Transnational Companies and banking sectors. Theoretically they meet the demands of citizens (Agnew, 2008). Commodification – putting price tags on everything including education is part of this. Homogenisation of consumer markets to feed, clothe, beautify, transport and educate is 'communicated' by McDonald, Abercrombie, L'Oreal, Toyota and Google claiming that: 'You're worth it'. This may foster an overdeveloped sense of entitlement for consumers and students alike.

But globalization is not truly global in equitable terms, within and between societies as with urban and rural Greece, between Greece and Germany, and the EU and countries in the Global South. A major strength of PEERS is collaboration on all continents, offering student teachers experience, knowledge and empathy as demonstrated in case studies (Murphy and Descoedres, 2016). Interdependencies exist, at all geo-social scales – economic cores to peripheries. Students become aware that top-down governmental organization has to negotiate with

bottom-up groups, NGOs and electorates, or else risk socio-political and environmental implosion as witnessed in Soviet states (1991), or conflict as seen in several African states including PEERS partner countries, and Arab Spring revolutions starting in 2010 in Tunisia, and impacting on Syria producing refugee and migrant crises in Europe.

### *1.3 EU input into education processes*

The Council of Europe (47 states) was founded to support dialogue, peace, human rights and democracy in Europe with education a key pillar (Council of Europe, 2015). Enhancing this, EU works with EEA states Iceland, Norway and Switzerland, and EU candidate countries including Turkey, with EU objectives to: promote cooperation and stability; economic growth through open markets; develop poorer European regions; act within sustainable frameworks; and develop a security and foreign policy to be a force for stability within Europe and the world (EUROPA, Enlargement, 2017).

EU policies foster skills and competencies, curricula and programs. Policies, structures and actors, including teachers, have to be further developed by consensus between EU members in order to assure objectives. In 1987, the EU implemented its first education program – COMETT, to stimulate contacts and exchanges between universities and industries, followed by ERASMUS promoting inter-university cooperation, mobility, and youth programs in 1989. Erasmus+ (2014–20) covers education and training aiming at boosting skills, employability and modernization of education, training and youth systems with a budget of 14.7 million euros, 40 % higher than previous levels. Four million people will receive support to study, train, work or volunteer abroad, including 2 million higher education students, 650,000 vocational training students and apprentices, and 500,000 going on exchanges and volunteering abroad (EUROPA, 2015).

The European Credit Transfer and Accumulation System (ECTS) is a standard for comparing student attainment across the EU and collaborating countries. The Bologna Process promotes higher education reform targeted establishing a European Higher Education Area (EHEA)

reinforcing free trade and free movement of workers in Europe (Erasmus, 2015). Educational systems form cornerstones of the European Project within contexts of globalization. Preparing critically globally conscious teachers is not a choice but an imperative. International scales must reach to the local with 'glocalization' whereby pupils in schools, like student teachers are at home in their habitus and not lost in 'place-less' homogenised environments.

## 2. Case studies from Ireland

To illustrate what is happening in the largest teacher education institution in Ireland, Dublin City University – Saint Patrick's Campus, data from the International Office Report 2014–15 of St. Patrick's is used.

### *2.1 International mobility*

Bachelor of Education (B.Ed.) students studying to be primary teachers numbered 1,264, with 179 post-graduates. Some 600 Bachelor of the Arts (B.A.) students registered in the Humanities Faculty; a majority go on to post-graduate programs becoming primary or secondary (middle and high school) teachers. DCU St. Patrick's holds the Erasmus Charter for Higher Education (2014–20) with 45 Bilateral Agreements with Partner HEIs (Higher Education Institutions): 40 in Europe, 4 USA and 1 Japan. St. Patrick's encourages internationalization at home and abroad (Nilsson, 1999).

Concerning mobility, there were 23 outgoing B.Ed. students for full academic year, and 38 for one semester only. Seven outgoing B.A. students went to Europe for full academic year and 3 to Europe for one semester. Three student teachers went to Luxembourg for training placement (TP). There were 22 (16 EU, 5 USA, 1 Japan) incoming students in Semester 1 and 47 (43 EU, 3 USA, 1 Japan) in Semester

2, and 6 incoming students from non-partner US HEIs. Collaboration with two NGO programs placed 10 volunteer students in Ethiopian and Ugandan schools. Four special modules were offered for international students and four fieldwork trips, while the GAA (national Gaelic Athletic Association) sponsored cultural events and tickets for matches.

There were 16 incoming international staff visits and three shared international modules including the Swiss-Irish PEERS Project. Ten European students did Teaching Placement in primary and secondary schools in Dublin. Staff mobility targeted an inter-university Master’s program at Angers and participation in the Comenius Association – 30 teacher education HEIs in 18 EU states (Comenius Association 2017). The NETT Meeting – Network for Education and Teacher Training in Europe was attended in Hungary (June 2015). Outward staff Mobility included: the University of Lorraine, Metz and Nancy Campuses; European School Luxembourg (May 2015); Symposium – European Group for Teacher Education HEIs in UC Leuven-Limburg, Belgium (June 2015), and HEP (Lausanne) PEERS Workshops (July 2015).

## 2.2 Geography and education

St. Patrick’s Geography Department prepares globally conscious teachers organizing modules around thematic years. Sustainable Development in first year is followed by Citizenship and Human Rights in second year, preceding specialisms – the professional geographer in third and fourth year (O’Reilly, 2014; De Miguel González and Donert, 2014).

Table 1. DCU-SPC Geography Department Student Numbers 2014–15.

<i>Year</i>	<i>B.Ed.</i>	<i>B.A.</i>
1	140	115
2	25	69
3	38	69
4	38 (2015–16)	

Source : DCU-SPC Registrar’s Office.

Students discover relationships between sustainability theory and practice as in fieldwork (Harper, 2004; Herrick, 2010; McManus and O'Reilly, 2016):

Student 1 re: Newgrange (megalithic necropolis – UNESCO World Heritage site):

*Evaluating sustainability from an environmental perspective the positioning and design of the visitor centre indicates the measures taken to make it blend in with the landscape. Tourist numbers allowed into Newgrange are limited to preserve the site for future generations... Newgrange must be economically viable to fit into the sustainability model... From the social perspective there are notable efforts made to preserve the site for future generations while also balancing the needs of the present...*

Student 2 re: Luas (light rail) Park and Ride facility, M50:

*This park and ride facility is economically viable. The Luas is a regular service and fast compared to buses. It makes perfect economic sense to use this facility as it is cheaper than running your car journey in and out of the city every day. This car park is environmentally viable as it reduces the carbon footprint of the city centre, as there are fewer cars in this area. It is socially viable, as it reduces commuter stress, as they do not have to deal with the traffic; it reduces congestion in the city centre for those who do have to make the journey in...*

Joint courses: (i) Dutch (HAN, University of Applied Sciences, Faculty of Education, Nijmegen) and Irish (DCU-SPD) students collaborated virtually and face to face in the organization and delivery of a fieldwork module. (ii) Identity: inter-culturalism, globalization, and citizenship themes were worked by Irish (DCU-SPD) and American (University of Northern Colorado, College of Humanities and Social Sciences, Greeley Campus) students. These examples involved online interaction – in the first case, students met following a preparatory period of virtual collaboration; in the second case, interaction was online only (Hurley & al., 1999). These experiences were positively received, highlighting potential for new generations of teachers to use ICT in order to share empathy across boundaries (O'Reilly and McManus, 2011, 2013; Solem & al., 2010; Ioannidou and Konstantikaki, 2008).

### *2.3 The centrality of empathy in PEERS education*

Collaboration involves pedagogy and empathetic education and discovery (or enquiry-based) learning. More than one type of intelligence exists, with social and emotional intelligence progressively valued in workplaces (Goleman, 1996; Ioannidou and Konstantikaki, 2008). Empathetic intelligence is based on a theory of relatedness which is dynamic regarding thinking and feeling; ways in which each contributes to making of meaning. It is built on person-centered situations and professional contexts. Salient skills, abilities and attitudes underpin effectiveness in contexts with enthusiasm, expertise, capacity to engage, and empathy itself. Empathy is a function of mind, brain and feeling, and its relatedness to narrative and imagination. Social usefulness of empathy and organization is crucial in developing cultures of learning essential for students and lecturers, on practice and professional relationships (Arnold, 2005). This perspective must be forefront in the digital age. Given the (emotionally) distancing effect of technology, students must develop empathetic intelligence so as to engage effectively as illustrated by PEERS collaborations where empathic learning is reinforced (Marron and Descoedres, 2015).

All Irish students collaborating with HEP in PEERS contexts confirmed that they found their experiences highly positive. Emphasis in PEERS is for students to become involved in ‘using their skills to undertake enquiry’, ‘working together to develop ... craft and enhance personal competence’ (Naish & al., 2002, p. 69). In this constructivist approach, students were not provided with exact answers, but rather skills and materials to find answers themselves. Learners were encouraged to draw on their experience and prior knowledge, calling on that of peers, in group learning scenarios. Recognizing debates concerning values of discovery learning, particularly the work of Mayer (2004), the approach taken moved beyond unassisted discovery learning to utilize what Marzano (2011) has described as ‘enhanced discovery learning’. Key elements in success of projects were the degree to which students were prepared for the learning tasks and assistance where necessary, but with a ‘light-touch approach’.

### 3. Concluding remarks

Exploring challenges of how to prepare critically internationally mindful globally conscious educators, the kernel is how to evaluate, 'work with what you have' and 'try to improve it'. Targeting equilibriums between competencies and skills is imperative, 'learning by doing' is crucial. That is not to imply simplistic perspectives whereby the trainer makes out the 'to do' list and tells the trainee: 'go do it'. Balancing blended teaching methodologies with awareness of student multiple intelligences and empathy is vital in developing attitudes and mind-set. This implies intellectual curiosity and enjoyment, a desire to evaluate and find answers, and skills of how and where to find these; creation of tangible and intangible responses and solutions at varying levels of abstraction and product. Concepts regarding education (formal, non-formal and informal), knowledge, cognitive processes, ethics, self-awareness, empathy, have been explored.

Regarding multiple intelligences, individual abilities, issues of self and group identities, there is no 'one size fits all' toolbox for nurturing critical thinking. Nonetheless, creation of educational contexts, environments, ethos, dialogue, lexicons and appropriate methodologies do much to support positive attitudes to critical thinking. Key competencies and skills are the product of lived individual, social and civilizational and historical experiences with many shared canons. While professional teachers form a cornerstone in educational processes, parents and society are equally responsible.

While each student teacher has experienced a unique geographical life-path and time slice i.e. places and cultures, they have to be aware of self and others, and processes that have helped shape them, in order to connect with life-paths and time slice experiences of their own students. Besides pedagogical and psycho-educational training, teachers must be aware of bigger pictures: socio-cultural and political-economic that affect them and their work from top-down government curricula and programs influenced by political, economic or religious ideologies and trends, to interlinkages with bottom-up group actors in democratic processes, and



weakness or lack of such in some contexts. In understanding processes, student teachers are being educated into being active citizens with responsibility in school environments and wider scales as illustrated in the PEERS work.

Concepts of globalization impacting at local to vast scales, especially economic interfaces of top-down institutions such as UNESCO, Council of Europe and EU influence processes as with the Erasmus program. Case study material from an Irish University helps demonstrate drives for global consciousness in teacher education, firstly with material from the 2014–15 Report of the International Affairs Office, DCU St. Patrick's. This is enhanced with data from the Geography Department's commitment to Sustainable Development and Citizenship enhancing skills and competencies with shared international work including PEERS.



*Part 2*

*Case Studies and Lessons Learned from  
PEERS Project in South Countries*



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## Chapter 4: Learning Through Experiences of Otherness in Malagasy Schools: Exchanges Between the ENS in Antananarivo, HEP Vaud, and the Zazakely Association

### **Abstract**

In this chapter, we describe how a group of three Malagasy students and a professor from the Ecole Normale Supérieure (ENS) in Antsirabe, Madagascar, and three students and a professor from the University of Teacher Education of State of Vaud (HEP Vaud) undertook experiences of otherness in two schools in Antsirabe (Madagascar). Several themes attracted the group's attention: the status of the French language at school, the authority of teachers, pupil diversity, and descolarization. Our framework of analysis is that of *double* distanciation through experiences of otherness. We show how a sense of surprise among students and professors can lead to a better understanding of cultural aspects of other peoples and of oneself in return. Our method also leads to a calling into question of certain professional practices on professional practice. We emphasize that it can be transferred to fields beyond that of teacher training.

### 1. Introduction

The PEERS program (the *Projet d'Étudiants et d'Enseignants-chercheurs en Réseaux Sociaux* or Student and Teacher-Researchers Social Networks Project) began in Madagascar at the same time as the country finally

elected its president. The Swiss ambassador in Antananarivo played an important role in this transition (Châtaigner, 2014)<sup>1</sup>.

The aim of the PEERS program is to encourage cooperation between students and teachers in the Swiss Confederation and partner countries on an educational theme in an international and intercultural framework established by the University of Teacher Education of State of Vaud (HEP Vaud) located in Lausanne that trains teachers to work in public institutions in Switzerland's Vaud region. The Ecole Normale Supérieure (ENS), a high school teacher training institution, was the second partner.

The recent history of Madagascar is, in itself, a topic that arouses strong feelings. The island has an indisputable natural, human and economic potential. Unlike many countries of the South, it has not suffered any wars or armed conflicts in its history<sup>2</sup>. Today, Madagascar is characterized by continuing recession and recurrent crises. And the country is still in the throes of an ever-growing hardship: 87.5 % of the population lives below the poverty line and 53 % of those under the age of 15 are illiterate (Vancutsem & Razafimbelo, 2015). The impact on education is very alarming: according to the Millennium Development Observatory, the net enrolment rate in primary education fell from 83 % in 2005 to 69 % in 2012. In 2012, UNICEF reported that 1.5 million school-age children do not attend school and only three out of ten children complete primary school.

This article focuses on the exchanges between the HEP Vaud and the ENS of Antananarivo in Madagascar. The aim pursued by the PEERS is to lead research, to share experiences in order to build the professional capacities of the trainees and to improve school performance. A modest contribution in the quest to pave the way for development.

The Zazakely association, the third partner, is both the object and purpose of the research: largely financed by a Swiss NGO (<[www.zazakelysuisse.ch](http://www.zazakelysuisse.ch)>), its mission is to prevent the poorest from dropping out of school, by providing lunch to targeted pupils and giving them help with revision in addition to the education provided at the district's public

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1 He supported the Malgacho-Malagasy dialogue led by civil society.

2 With the exception of the 1947 uprising, since the economic impact of the movement was to a large extent linked to that of World War II.

primary school: Ambavahadimangatsiaka public primary school. The association also has a preschool in charge of early childhood education, and helps to encourage parents suffering great economic difficulties to enroll their children. It is also a way of offering services to the poorest that have, so far, been reserved for wealthy families.

In Fiadanantsoa, near Antsirabe, the association has set up a free clinic. Its farm aims to contribute to the association's financial sustainability. In concrete terms, in the mid-term, this project serves to examine and improve the effectiveness of the association's activities. Field surveys made it possible to identify the training needs.

In this chapter, we ask: what were the experiences of otherness experienced by our international group? Our goal is to show how our group uses the distantiating principle, consisting of "rendering the strange familiar and the familiar strange" (Melhuus, 2003, p. 73). This involved a three-phase approach: first, showing how the students who were surprised by a cultural practice of the others call that practice into question; secondly rendering the familiar strange, i.e. calling into question an aspect of their culture that had, up until then, been familiar, obvious and unnoticed; and finally, taking a fresh look at their own professional practices. This type of heuristic approach can be applied to all student exchanges within the framework of the PEERS program. It could provide a general framework for other PEERS exchanges, or even transfer to any exchange program in the fields of education, social work, and health.

## 2. The Trip

Upon arriving in Antananarivo, our group of eight visited the Ecole Normale Supérieure (ENS) and met its director. We visited the Queen's Palace and the Prime Minister's Palace which, despite renovation, is starting to fall into disrepair. Then the group visited the "Blue Hill," the pinnacle of Imerina's history and the sanctuary of the sovereigns. It

would indeed be difficult to understand the central highlands without a historical retrospective through the ruins of the past. The current state of the main historical monuments bears witness to the tumultuous history of independence.

In Antsirabe, we met the director of the association, who provided us with an introduction to its work. We then spent two days of intense observation at the school in Zazakely.

The group met with the head of the educational administrative zone (ZAP, *Zone Administrative Pédagogique*), then the two professors visited the head of the school district (CISCO, *Circonscription Scolaire*) and the heads of the regional directorate of national education (DREN, *Direction Régionale de l'Éducation Nationale*).

Over the weekend, the team discovered the market, the town of Antsirabe, the town of Betafo and the countryside around Vakinankaratra, known for its meticulous agriculture and its judicious land use.

The students were given the opportunity to use the last three days to complete their investigations. The director of Zazakely proposed a visit to the very poor “village of solidarity”, a former village swallowed up by the city whose occupants enjoy the privileged support of the association Zazakely. Most of the men in the village work as rickshaw pullers, and the women as laundrywomen: the least well-paid professions. Meetings were primarily held in Malagasy, with the ENS students translating for their Swiss colleagues. Some individuals chose to hold meetings in French, and despite the need for some guesswork they made themselves understood.

This trip to Madagascar made it possible to forge strong ties between the participants. Although the stay was short, few visitors have, in such a limited time, the opportunity to come face to face with such different realities; and the Malagasy students also discovered their country from a different angle. The intention was for the students to mutually exchange information to build on their investigations and, if necessary, for the Malagasy students to return to Antsirabe to further examine or to confirm certain elements at the request of their Swiss partner. This is a point that was somewhat neglected because there were few exchanges. For the Malagasy students, the trip to Switzerland was quite an event, as can be



imagined: first journey by air, first contact with a foreign country, first confrontation with an ordered world, run according to the rule of law. Fortunately, there are films and the people realize that such a world really exists. Magical, unreal, but the Malagasy do not show their feelings too much: it is not in their culture, as Célestin Razafimbelo explained to us.

The partners meet up again: Tolotra was hosted by Tanja, Harinaivo by Patrick and Toky by Nancy. And all three were to come away with different experiences. But what is wonderful is the ease with which the ENS students adapt. The students had the privilege of visiting Swiss schools and making classroom observations. They particularly appreciated this opportunity and it deeply affected them. Tolotra and Harinaivo, who come from a rural environment, showed a particular interest in the landscape, in studying land use. But the city, the cleanliness, the great organization of transport and public life, impressed the visitors, generating a great deal of admiration tinged with melancholy when they compared it with the situation in their own country. Another surprise: the wealth, but also the prices of everyday items, converted into *ariary*, the Malagasy currency. “A Malagasy teacher could not survive a day in Switzerland!” Visits to historic monuments sparked interest. The historian culture has been enriched.

### 3. Double Distantiation Through the Experience of Otherness: Theory and Practice

Before the trip to Madagascar, several meetings took place, and information on the Malagasy school system was discussed. The professors suggested an anthropological approach: double distantiation through the experience of otherness. We – Célestin Razafimbelo, a historian whose

approach is very close to that of anthropology<sup>3</sup>, and Denis Gay – guided the students in the use of this methodology.

### 3.1 *Experience, Feelings, and Emotions*

Experiences of otherness constitute a fundamental dimension of the anthropological approach<sup>4</sup>. Anthropology “consists of a human experience. It is the experience of otherness in the fieldwork, where the anthropologist is confronted by a confusing environment. The relational parameters are overturned” (Géraud, Leservoisier, & Pottier, 2000, p. 18).

Otherness is a relative concept. The distinction between ourselves and others depends on the contexts of speech, society, and historical period. Thus, the Other for the Swiss is not necessarily the Malagasy, and vice versa. We will return to this key point.

In the experience of otherness, the researcher is often taken aback and sometimes shows a strong emotional reaction to what he feels to be “other”. For example, anthropologist Nigel Barley was annoyed when the Dwayo people of Cameroon among whom he was leading his research went through his pockets and took the tobacco that he had bought, without asking him (Barley, 1983). Paul Rabinow (1977) was surprised that Ibrahim, whom he considered to be a friend, kept hiding information from him and asking him for money. The Malagasy students were shocked to hear a Swiss student using the familiar “tu” form of address with their professor and using his first name. A Swiss student “was disgusted”, in her own words, when she learned that during Madagascan shroud replacement rituals (*famadihana*), families remove corpses from their tombs, replace their shrouds, then dance with the dead on their shoulders before returning them to the tomb.

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3 The very close alignment of anthropology and history should be noted. Otherness is also experienced by historians when reading ancient documents, objects, monuments, etc.

4 We are referring here to cultural and social anthropology. The terms ethnology and anthropology have now become synonymous in French (see for example Géraud, Leservoisier, & Pottier, 2000).

In these situations, the expectations and social conventions of researchers differ from those of their protagonists. The researchers are therefore shocked as a result of their own cultural bearings constructed in their social milieu. Barley had a certain idea of private property; Rabinow a certain idea of friendship; the Malagasy students a certain idea of teaching authority; and the Swiss student a certain idea of desecration and death. It is important to note that this experience is characterized by the involvement and engagement of the researcher, including in the choice of concepts.

Thus, from the outset, the researcher is included in the object of research. Furthermore, the individual anthropologist is considered to be a tool in the methodology. "The most intimate subjectivity [is] a means of objective demonstration [...] The observer apprehends himself as his own instrument of observation" (Lévi-Strauss, 1976, p. 3). Everything is filtered through his self. It is always through his own original milieu, cultural development, and life course that he observes, has experiences of otherness, and learns.

It is in this context that the concept of reflexivity (Rabinow, 1977; Ghasarian, 2002; Leservoisier, 2005) has become a cornerstone of anthropology. It is now common to highlight the role of the presence and actions of the researcher not only when describing the results of research, but also its approach. This core competency in anthropology consists of describing and analyzing the researcher's involvement in the situations studied, and to reflect on the role of his origins, social class, sex, age, etc. – and of his deeds and actions too. It is about "objectivating the subject of objectivation," in the words of Bourdieu (2004, p. 88). It is worth noting that it was following the questioning of ethnographic authority (Geertz, 1996; Clifford, 1988), as it had been set down since the 1920s, that this concept was developed and became essential (see among others: Rabinow, 1977; Ghasarian, 2002; Leservoisier, 2005).

On the professional level, there is a striking parallel here with the skill standards of the HEP Vaud, "Acting as a critical professional and bearer of knowledge and culture" and standard No. 1.3, "Reflecting critically on one's own origins and cultural practices, and one's social role." The level of mastery to be attained at the end of training is: "Demonstrating a

critical understanding of one's cultural development and appreciating its possibilities and limits." In fact, the concept of anthropological reflexivity could give meaning to a core professional competency. We will return to this point.

Double distantiation involves taking a step back and questioning oneself first about a cultural aspect of "the Other", then about a cultural aspect of the researcher: the "distance of the ethnologist from his object of study is one of the conditions for acquiring the critical gaze needed to understand "the Other", but also oneself – a gaze that is one of the major contributions of the discipline" (Géraud, Leservoisiere, & Pottier 2000, p. 18). The methodology therefore involves three phases. The first phase is surprise at a practice or cultural phenomenon. This leads to asking questions about the other's culture, for example, the views of the different social actors regarding the practice. This is one avenue for research.

In the second phase, the researcher asks himself what cultural aspects of his own self have made him feel this surprise. He thus questions himself about an aspect of culture that he has himself internalized. Very often the practice or concept in question has remained until now largely implicit, if not unconscious for the researcher in return. It can be studied. This is another avenue for research.

But this double distantiation from cultural aspects of both another world and one's own world is never settled. An obstacle rears its head: the culture that the researcher has internalized may be naturalized, normalized, and taken as given. A second epistemological barrier is ethnocentrism, "the technical name for the view of things in which one's own group is the center of everything, and all others are scaled and rated with reference to it" (Sumner, 1906, p. 13).

In the third phase, the researcher who is also a professional makes use of the experience of double distantiation in order to make connections with the competencies that characterize his specialism.

These three methodological phases are illustrated in the following example. Students from HEP Vaud visited schools in Burkina Faso, as part of an intercultural exchange organized by professor Moira Laffranchini-Ngoenha. For a week, they shared the daily life of

teachers and pupils at a school. But they were shocked above all by the subordinate relationships between men and women: women carried out the most menial activities and consented to polygamy. Having had this experience of otherness, they questioned both the Burkinabes' culture, in particular the social and historical construction of concepts legitimizing the power of men, and also in return their own culture, and in particular male domination in Swiss schools. Why is it that women make up the majority in elementary school teaching, but are less recognized and less well paid? Why is it that at HEP Vaud, the higher up the hierarchy you go, the fewer women there are? They then decided to be mindful in their own teaching practices when it came to their choice of textbooks, the creation of teaching materials, and addressing pupils in an equal way.

As our students had a limited amount of time to conduct their research, and because anthropological fieldwork, which served as a model for our methodology, is a long-term approach, we provided the students with instructions. We asked them to seek out moments of surprise, to describe the situation (the actors present, discussions held, etc.) that provoked such moments, and to discuss them with the professors. We suggested that they take *interactive situations* as their unit of analysis, following the perspective of interactionism (Woods, 1986), ethnomethodology (Garfinkel, 1994), and interpretive anthropology (Moerman, 1990, 1994). The three-phase methodology could therefore be implemented more rapidly.

#### 4. The Experiences of Otherness

During the trip to Antsirabe, the professors regularly asked the students for their observations, their astonishments, the circumstances of these surprises, the cultural references that provoked these astonishments, and finally, the link to their research question.

We, the two professors, took notes and built up a corpus of experiences of otherness, as they were recounted verbally, on the spot or later, or as they were described in the students' dissertations. We also included our own experiences of otherness. Using an inductive approach, we reviewed numerous situations and selected and analyzed the following four themes: authority; the language of teaching; the diversity of pupils with regard to statutory groups; and finally, deschoolization. We lack the space here to discuss other themes that arose, such as teaching methods, the role of repetition, time, family education, violence, and symbols and rituals at school and university.

#### 4.1 Authority

Claude Rivière (2000, p. 15) defines authority as “the ability to make oneself obeyed when one commands, through an influence exerted by the holder of power. The recognition of superiority in command leads to consenting obedience.”

**Authority at School.** The Swiss students were astonished when they entered classrooms accompanied by their Malagasy colleagues. Firstly, the 30–70 pupils at the Ambavahadimangatsiaka EPP and the 15 pupils at the Zazakely School stood up together. Then they said together “Bonjour Monsieur, Bonjour Madame.” These foreign teachers seemed very important to them.

In Malagasy society, teachers have the recognized status of *raiamandreny*, or “fathers and mothers.” Children must obey and not question the validity of the orders they are given. This stood in sharp contrast with the experiences of the Swiss students.

One Malagasy teacher, at the end of her lesson, asked the Swiss students to evaluate her work. The students assumed the role of experts, completing a half page of recommendations. This revealed the image that this teacher had of the *Vazaha*. A standard local expression is “mahay ny Vazaha”: the Whites are capable, they know things well. This must be placed in the more general context of Malagasy society, which is very

hierarchical and unequal, and where the *Vazaha* still have a privileged, although ambivalent, status (Dahl, 2006).

This incident enabled consideration of the current authority of Swiss teachers in relation to children and their parents. A very big issue, which raised questions about professional practice. Teachers currently complain about the lack of pupil discipline, but how far should we insist on the value of pupil independence in the school system? Could another kind of authority be thinkable in Switzerland?

In light of this, Célestin Razafimbelo notes that the three Malagasy students adopted a new attitude to authority after being confronted with the realities of Swiss schooling.

**Authority at the University.** The Malagasy students were amazed when a student addressed Professor Razafimbelo using the familiar “tu” form, and used his first name, and by the fact that all the Swiss students did this with their professor. The Malagasy students were also astonished that the Swiss students expressed disagreement with their professor. This was not normal for them. Nancy’s analysis showed in great detail how the Malagasy students were acutely frightened of saying something that their Swiss colleagues did not like.

Célestin Razafimbelo adds: in Malagasy universities, teachers are *raiamandreny*, (father and mother), and are always addressed as Mr A or Mrs B. In discussions, they avoid transmitting ideas that go against those of the teacher. “The words are chosen to create the atmosphere most conducive to conversation” (Dahl, 2006). Personal opinions are put forward with caution. Students do not say directly what they think, avoid discussion with the teacher and are willing to accept and follow all instructions from him. These norms of respect do not always have a positive effect on learning. They inhibit initiative, and lead to constraints in teaching practice. In light of this, the trip to Switzerland would inevitably lead the three Malagasy students toward the choice of a new teaching style.

Conversely, the Swiss students generally ask questions. For them and their professor, the confrontation of opinions is a given, and taken for granted. It is even a virtue justified theoretically by socio-cognitive conflict (Perret-Clermont, 1979). Students take the initiative and assume

their own position with regard to the dissertation outline suggested by their professor. This is accepted and respected, as long as the students are able to justify the choices they have made.

This topic led to concrete questioning of professional practice. In Swiss classrooms, there are issues related to the phenomena presented above. For example, to what extent are pupils afraid to express themselves for fear of being mocked by their classmates? This gave rise to agreement on one particular consideration: it is important for teachers to identify discrimination between pupils and ensure the protection of each individual. This is supported by competency No. 6, “Planning, organizing, and ensuring the functioning of the class to favor pupil learning and socialization” and standards No. 1, “Defining and implementing a fair and relevant system of working for class activities,” and No. 5, “Maintaining an environment conducive to learning.”

It seems pertinent here to clear up a potential misunderstanding. It was not only the Swiss students who experienced otherness in their relationships with the Malagasy and vice versa. When the Malagasy students were shocked by the student using the familiar “tu / you” form of address with the Malagasy professor, so was Denis Gay.

As we have seen, otherness is indeed a relative concept: social actors mobilize reference points of identity among all the others that make up their identity repertoire (Douglass & Lyman, 1976) and thus construct distinctions between “us” and others that fluctuate according to contexts, speakers, and their statuses.

When the Swiss students and professor were shocked by the poverty of families in the “village of solidarity,” this was also the case for the Malagasy students. The poor were thus encountered from the perspective of otherness by the group made up of Swiss and Malagasy students and the Swiss professor. It would be very dangerous to reduce otherness to an opposition between the Malagasy and the Swiss. This would be an implicit and unconscious throwback to the Great Divide, the original sin of anthropology!

The Great Divide was a concept of division between the West and other countries at the root of the separation between sociology and anthropology: the former studying Western societies and the latter



studying the others. Following the same implicit principle, anthropologists chose *a priori* different concepts to describe similar phenomena: for example, in the West the region, regionalism, the nation; elsewhere, ethnic groups, tribes, clans. But the Great Divide has now been rejected (Lenclud, 1992), and Alban Bensa reminds us that “the Great Divide does not exist. There is no solution of discontinuity between Them and Us and the maintenance of any kind of dualism in this area is nothing but a condescending return to evolutionist assumptions” (Bensa, 2006, p. 13). It is for this reason that we emphasize the multiplicity and diversity of experiences of otherness.

#### 4.2 *Language*

The three Swiss students were astonished: one even said they were shocked. They had observed elementary level lessons given by teachers in the two institutions, the Zazakely and Ambavahadimangatsiaka schools, and saw that several of the teachers struggled to communicate in French, even though it was the language of teaching. The Swiss students particularly noticed pronunciations that made comprehension difficult. In addition, there were errors on the blackboard that were recopied into the pupils’ exercise books.

How should this fact be explained and put into context? As Célestin Razafimbelo explains, language policies during the four decades since independence have as their common denominator the parity between Malagasy and French, and the lack of means and will to implement them have left a considerable margin for maneuver for the institutions and teachers. This choice currently advocates the use of both official languages, but finding a balance between them is, admittedly, not always understood and followed by teachers. To simplify, we will say that Malagasy is used to describe and explain for teacher-pupil verbal exchanges. French is the language of any written production and assessment. A survey was conducted among lower and higher secondary school teachers about their preference regarding the language of a history textbook. Over 80 % opted for French. Among the reasons cited were

the desire to improve the success rate of the ‘brevet’ and ‘baccalauréat’ examinations, to facilitate understanding of the notes written in the exercise book, and to put an end to dictated lessons which are more akin to a French language class (Razafimbelo, 2013). In addition, the policy of the Malagasization of teaching has been implemented since the 1970s to the detriment of French learning.

Patrick and Harinaivo astutely noted that French is very rarely used outside school by pupils and teachers. This observation is confirmed by Babault (2006). Such lack of practice does not favor learning.

***The Meaning of What Is Taught.*** Nancy observed a teacher at the Zazakely school giving a lesson in French. He asked each of the pupils in turn to read a text aloud. In an interview after the lesson, he accepted that the pupils did not understand this text, but argued that the objective was to practice pronunciation. He said he was following instructions he had been given during his training.

Patrick and Nancy asked about the question of meaning. What is the meaning of learning in French, if the language is not well understood? They brought a judgment value on these practices. In the Swiss schooling system, the purpose of learning with meaning was not natural, but was acquired over the course of the twentieth century. Here again was another huge area for consideration.

The Swiss students reflected on professional practice. Referring to the skill standards, they were able to justify the goal of giving meaning to the objects of learning: “So that pupils are able to consolidate their learning, they must be able to use it in diverse situations, if possible in connection with the situations that give meaning to learning.” This standard is part of key competency No. 4: “Designing and leading teaching and learning situations according to pupils and the study program.”

### *4.3 Pupil Diversity with Regard to Statutory Groups*

How do Swiss and Malagasy students deal with the social and cultural diversity of pupils at the two schools? They consider solely differences in

sex and age, as well as their parents' professional status. But then Denis Gay asked the Malagasy students an extremely uncomfortable question: did the category "tsy madio" or "maloto," referring to the descendants of slaves, crop up in discussions of pupils and teachers, or in avoidance, or other practices? The three Malagasy students were extremely astonished and embarrassed. Silence was their only response.

And yet pupils of very diverse origins attended this school. As Célestin Razafimbelo explained, the traditional social hierarchy tends to be reproduced in the town. The Ambavahadimangatsiaka public primary school is in the center of the town. It welcomes children from different backgrounds. While children from wealthy families usually go to private schools, due to its history and its influence, this school is accepted as one of the best in Antsirabe: hence, it has a socially heterogeneous school population. Moreover, the district itself is divided into two distinct residential areas: the district of Ambavahadimangatsiaka and northern Mahazina are relatively affluent areas, while the southern part is the remains of a village of outcasts swallowed up by the city. The societies of the central highlands of Madagascar have remained deeply committed to the statutory cleavages of the 19<sup>th</sup> century: *andriana* (the nobles), *hova* (the free men), *andevo* (the slaves). This is a fact which is discreetly hidden. "Slavery has remained in minds and in practice; it is ubiquitous in urban and rural societies, that of Imerina and those of the provinces. Such situations must necessarily be explained, by revealing the truths that have updated until now the paradigm of slavery. The research explains the attitudes, denounces the injustices, exclusions and absurdities, and demystifies beliefs and mythologies. For often, that which goes unspoken, the discreet silences, lead to a kind of complicity that aims to maintain the status quo" (Razafimbelo, 2014). Some discriminations against descendants of slaves can be prevented by a good teacher training and a well-defined and respected curriculum, which is not always the case. This stigmatizing term is often the cause of many exclusions.

To what extent and how can schools mitigate the silent exclusion of the descendants of slaves? The silence around these practices makes the fight more difficult. In a related example, Lewis (2009, p. 60) showed that racial categorization in schools in the United States is even

more enforced when it is not openly expressed. Denis Gay went on to emphasize that in Switzerland national, racial, regional, religious, and social class categorizations at the root of discrimination in Swiss schools are also studied. This research enables links to be established with the skill standards. In fact, standard No. 5 of the third skill stipulates “avoiding all forms of discrimination and devaluing of pupils, parents, and colleagues.”

More generally, how can teachers take into account the cultural diversity of pupils but avoid culturalization and essentialization? And how can they take on a universalist perspective that recognizes the equality of all pupils, without limiting its application to the principle of the “indifference to difference” that reinforces social inequalities? (Gay, 2017).

#### *4.4 Descholarization in Madagascar*

During his trip to Switzerland, Harinaivo was surprised to learn that school is free in Switzerland. In Madagascar, the descholarization of many children had been discussed by the Swiss and Malagasy students.

The students had observed poor parents queuing outside the headmistress’s office at the elementary school to ask for their children to be enrolled even though they had not yet paid. Then, a few days later, on the wall facing the entrance to the school, a sign announced that enrolment had ended.

To understand the descholarization of pupils, it is useful to analyze the modalities of relationships between families and the school on the micro, median, and macro levels (Gilles, Gay, Counet, Tièche-Christinat, & Freiburghaus, 2013). In this framework, the local institutional context and power relationships play a role. The headmistress of the primary school is actually willing to accept some requests from poor parents, and it is in fact families from the parents’ association (the FRAM)<sup>5</sup>, who have already paid for their children’s enrolment, who apply pressure, and

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5 *Fikambanan’ny Raiamandrenin’ny Mpianatra.*

refuse to accept pupils whose parents have not yet paid. The association, which pays 13 out of 23 teachers, thus exerts serious pressure on these parents and contributes to the deschoolarization of pupils. The poverty that plays a fundamental role in deschoolarization is further exacerbated by the dynamic of the parents' association. Realizing that the very functioning of an institution supposed to act for the good of all also contributes to deschoolarization invites us to question Swiss school institutions. To what extent and how does the school institution orient pupils and entrench social class – and what can a teacher do to limit these processes?

On the level of professional practice, we are once again confronted by the same issue as before. How can teachers navigate between the extremes of recognizing diversity and the “indifference to difference,” while avoiding the traps of culturalization and the reproduction of inequalities (Gay, 2017)?

## 5. Conclusion and Future Directions

We conclude by noting that all members of the group experienced *double distantiation* and were led to questioning their own teaching practices. Some of the students' analyses followed this approach through to the end, questioning both the other society and one's own society, and ending with concrete considerations of professional practice. Other analyses were curtailed. For example, some students used HEP's skill standards to judge the Malagasy teaching practices in a negative manner. This is the trap of ethnocentrism. It thus appeared to be difficult for the students to decenter themselves in regard to the skill standards and what they had just learned at HEP. Another obstacle was the courage to express astonishment, emotions, and feelings, even though they were the triggers for a potentially heuristic experience of otherness.

As some of the students' analyses were partial in regard to the four themes chosen, we, the two professors, have systematically compiled and completed the results of this chapter on “the experiences of otherness.”

We believe that the future use of this method raises important questions. Beyond the theoretical understanding of double distantiation through the experience of otherness, how can we help our students to learn how

- to consider surprises, strong emotions, and fleeting sensations as potentially triggering the construction of knowledge;
- to accept identifying the affect and describing the situation;
- to cultivate surprise; and
- to adopt an inductive approach that involves leaving space for the unexpected?

A convergence between teacher training and anthropology seems promising and pertinent. We highlight for example the proximity between the reflective method of teacher training and, in particular, “the critical understanding of one’s cultural development,” and anthropological reflexivity. More generally, the concept of anthropological reflexivity thus gives meaning to this skill and provides it with a general theoretical framework. It provides us in other words with work to be done! We therefore lead students to learn to have experiences of otherness that lead to a double distantiation. They encounter obstacles such as how to describe emotions and surprise, as well as the cultural introspection of notions that explain surprise, the inductive method that requires welcoming the unexpected, and ethnocentrism. In navigating these hazards, one of the main objectives is for students to acquire a core professional competency.

To conclude, we would like to emphasize once more the relevance and the transferability of the *double distantiation through experiences of otherness approach*, which passes through a questioning of the other culture and of one’s own in return, and leads to a constructive criticism of professional practices. In Spain, France, Romania, Great Britain, Madagascar, Mozambique, Switzerland, and in all countries where the PEERS program has been implemented, the scheme enables a short visit to be combined with an approach that involves experience, theory, and concrete reflections on professional practice leading to exchanges that could use this framework of analysis. This *double distantiation approach* could even be used during international and interregional exchanges in the areas of health and social work, which also involve a process of professionalization.

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## Chapter 5: Cultural Issues in Teacher Education: From Multicultural Context to Inter/Cultural Journeys

### **Abstract**

The notion of a multicultural context in schools is increasingly becoming a characteristic around the world. It requires both trainers and students to be open to the world and to different cultures. It is in this context that the PEERS program has been implemented at the University of Teacher Education of State of Vaud (HEP Vaud), in Switzerland. The program's main goal is to promote the international mobility of teachers and students for the benefit of education and research. The goal of the PEERS project between the HEP Vaud of Switzerland and the Universidade Pedagógica (UP) of Mozambique was to enhance teachers' preparation for teaching in a multicultural context and to use this context as a resource in achieving interculturality. Methodologically, I selected a narrative method to report and reflect on the PEERS project experience.

### 1. Introduction

In introducing this chapter, I refer to two perspectives that this article takes. In doing so, I intend to help the reader to understand the standpoint and context from which I write. The first perspective involves issues regarding the concept of culture, and the second concerns the methodology and representation of my data and results.

In terms of the concept of culture, the debates are very common. Culture, per se, may be seen as an indefinite or even confusing term.

From the growing of biological matter to civilization, social status, and shared attitudes, there is space for multiple interpretations of its meaning. This paper will not discuss the different meanings of the term “culture.” Instead, I will interpret the meaning of culture as values, symbols and interpretations of the elements of culture. In education, various countries have taken different approaches in order to address cultural differences in school settings. Banks (2001) identified nine perspectives taken in a school context that speak to cultural differences. These perspectives vary from assimilation to cultural pluralism. According to Banks, assimilation assumes that ethnic minorities lose their ethnic differences in order to become full participants in the national culture, since reinforcing their ethnicity would delay their academic growth and contribute to ethnic tension. By comparison, cultural pluralism presupposes that schools promote ethnic identities by reflecting the ethnic characteristics of students. One of the objectives of this perspective is to preserve different ethnic groups and to prevent students from feeling alienated. Beyond the multicultural settings that characterize schools in both Mozambique and Switzerland, we were challenged by the idea of turning a multicultural context into an intercultural journey. Interculturality, as described by Ngoenha (2013, p. 124), means “*dialogue between cultures, that cultures can and must bring [...] ways of thinking and of living, without the pretention to be the unique universality possible.*” With this in mind, I labeled the term intercultural “journey,” to convey a sense of dynamic dialogue that diachronically enriches both intervenients in the dialogue. The journey is dynamic, as a static view could render our dialogues into two or more monologues. As Ngoenha writes, “*it is impossible to convert two monologues into a dialogue*” (2013, p. 168). I also termed it “journey” because of the idea of transformation, implying that our aim is not to essentialize (to find an essence in each culture and set it uncritically as unchangeable and unquestionable), but rather to understand multiculturalism and to learn how it can support our endeavor as current or future teachers.

In terms of the methodology, broadly this paper takes a qualitative research approach and is framed by the interpretivist paradigm.



Interpretivism is an alternative to the positivist paradigm that requires researchers to grasp the subjective meaning of the social world (Bryman, 2004). The interpretivist paradigm contrasts with the positivist views of what constitutes research. The basic assumption is that while the positivist researcher claims objectivity and “*advocates the application of methods of the natural sciences to the social reality*” (Bryman, 2004, p. 11), the interpretivist “*shifts from the idea of a research paper reflecting the reality of a particular context to the idea of the research paper as a narrative and storytelling*” (Willis, 2007, p. 155). I chose narratives to report on the events and outcomes of the project. In using narratives under the interpretivist paradigm, I recur to the postmodern turn in research that claims that no method of representing data and research is privileged (Denzin and Lincoln, 2005), thus making use of narratives as a method for scientific publications. Clandinin and Connelly (2000) say:

Narrative inquiries are always composed around a particular wonder, a research puzzle. This is usually called the research problem or research question. However, this language and wording tend to misrepresent what we believe is at work with the narrative inquirers. Problems carry with them qualities of clear definability and the expectation of solutions, but narrative inquiry carries more of a sense of a search, a “re-search,” a searching again. Narrative inquiry carries more of a sense of continual reformulation of an inquiry than it does a sense of problem definition and solution (Clandinin & Connelly, p. 124, 2000).

Clandinin and Connelly’s views on narratives and inquiry frame the epistemological way I used to represent our experience during the first phase of the PEERS project involving HEP Vaud and UP. Apart from the requirement that students produce a project from the experience, we did not have a clear definition of a problem to explore. Our project had a sense of continual reformulation of an inquiry, of discovering from our multicultural context ways in which differences would illuminate an intercultural journey. Our vision or goal was to take as much from the journey as possible, to enable us to grow professionally.

I have organized reflections of the project around events and pieces of the narrative that I call lessons. These lessons were extracted from the visits we made to different places in Maputo and Lausanne. Denzin and Lincoln (2005) refer to the image of a qualitative researcher as

a *bricoleur*, “as a maker of quilts, or, in filmmaking, a person who assembles images into montages” (2005, p. 4). I subjectively selected some of the places to make the meaning like one in a montage where different images are put together or overlaid to create a picture (Denzin & Lincoln, 2005). These places were neither the best nor the most important that we visited. Each place, however, was a contribution to our growth during the project. The places chosen are just examples from among others that constituted important events in the project. By employing narratives, I embrace the standpoint that writing is a method of inquiry, a way of knowing, a method of discovery (Richardson, 2000), a way of interpreting and of reflecting on our professional practice. Thus, writing becomes both data and method (Timothy, 1999).

In selecting certain events and places, I was aware of the need to hear multiple voices. There were my own multiple voices (as a teacher, as a Mozambican, as someone welcoming foreigners, and of course as a woman and mother) and others’ voices (students, teachers, artists, Mozambicans, Swiss, youths, etc.). As Clandinin and Connelly say, “*we need not to see our participants as univocal, not tied to one theoretical structure that would leave them with the appearance of being uni-dimensional*” (p. 147, 2001). Considerations on *polyvocality*, on how to incorporate participants’ multiple voices, led me to consider issues of representation. Denzin and Lincoln (p. 200, 2005) assert that representation is a crisis facing qualitative studies (the others being the crisis of legitimation and of praxis). The representational crisis makes the links between the text and the lived experience problematic (Denzin & Lincoln, 2005). In other words, how will I represent people, facts and stories in the narratives? The basic assumption is, as Gumet writes in Slattery (1995, p. 78), that “*meaning is something we make out of what we find when we look at the text. It is not the text.*” Or as Richardson and St. Pierre (2005) assert, language is not the words we may read but, the meanings we make out of our own context, dependent on the discourse available to us. Utilizing multiple interpretations, I make use of different fonts in my text, while agreeing with Lincoln (1997), who reminds us that “*we will never get it totally right.*” For example, I have chosen to represent the text from Maria’s diary and Rafael’s report on the experience in italics. With this

in mind, my representations in the narratives are intended to invite the reader to engage in a dialogue with my writing. Rather than converging our views in one single point or image of our intercultural journey, I encourage crystallization (Richardson, 2000), instead of triangulation. In triangulation, we use different methods to validate a point of view or data collected. In the case of crystallization, we allow for multiple meanings, viewing the text more in the way of a *plurilogue* than a monologue.

## 2. The participants

A year passed while we negotiated the PEERS project between HEP Vaud and UP. Travels and many emails had brought us to the moment of our meeting. The group was made up of three students from HEP Vaud, three students from UP, and two lecturers from both universities. From the Mozambican group, we had two art students (Manuel and Rafael) who spoke Portuguese and local languages; one language student (Esperança), who was able to speak in Portuguese, French, and a local language; and myself, a lecturer fluent in Portuguese, English, and a local language. Esperança left during the second phase of the project due to personal issues. From Switzerland, we also had two art students (Gael and Maria), one student attending a primary school teacher training course (Fanny), and the lecturer. The Swiss students spoke French and could communicate in English – albeit with more difficulty than others –, while the lecturer spoke Portuguese, French and English. Language differences would challenge us. We could never speak in a single language that everybody could understand, and required constant translations between Portuguese, French, and English. Yet these challenges in communication often brought about numerous amusing episodes as well.

On the day of their arrival in Maputo, the student participants from Lausanne, Fanny and Maria, looked very tired, while Gael looked more alert and ready for whatever would come next. We got to the accommodation and a tentative plan was made for the week they would

spend in Maputo. I noticed some uncertainty in the eyes of Manuel and Rafael, the art students from Mozambique, who could understand neither English nor French, the language most spoken at first. I calmed them by saying things would get clearer as we engaged in our activities. Anxiety ran high.

### 3. The Project

We decided on the aim of the project: To use the multicultural encounter as an intercultural journey. This was not clear-cut from the beginning for most of us – we decided upon the idea as we became involved in the activities. But the fact that it had a rather eclectic formulation allowed us to determine specific objectives in accordance with our own geographic areas and interests. Our activities mainly included visits to different places in the city, as well as a visit to the Universidade Pedagógica (UP) of Mozambique, including the Center for Mozambican Studies and Ethnoscience. Places included a church, museums, schools, and markets. Only later we decided to include the dump, a place that Maria proposed. Each student would concentrate on what he/she would find to be useful to his/her personal project that addressed specific objectives, while the lecturers concentrated on giving meaning to the overall experiences using the framework of intercultural theory. According to the general aim of the project, the Swiss students were required to produce a project from their experience in Maputo that would be assessed as part of their unit at HEP Vaud. The Mozambican students had to produce a piece of work that would deal with their multicultural experience. The question we were all looking to find answers to was: What meaning can I give to the cultural differences in each country?

### 3.1 Lesson One: At the Dump

Maria persistently explored ideas for her project. She questioned what its theme should be. Being an artist, she considered making the project an artistic perspective of Maputo. She finally came up with the idea of the *lixeira*. Lixeira is a Portuguese word meaning “dump place.” In Maputo, the Hulene lixeira is a huge area where all the waste from the city is discarded. It is located in Hulene, one of the highly populated and relatively underprivileged suburbs of Maputo. Calls to relocate the lixeira to a new place have emerged, as there are many people living in its vicinity, making their living environment and health an issue. In spite of the challenging conditions, many people have found work there; collecting and separating waste in order to sell it to companies to be recycled.

We parked the cars on one side of the road and some of the lixeira’s workers approached us. After negotiating the requirements to visit, we entered the lixeira. It was my first time visiting it, and I was amazed by its sheer size and by the kindness of the people working there. The lixeira is a community in all senses. There are rules that govern activities in terms of which type of waste one is allowed to collect and which territory belongs to whom. They coordinate over different matters with friends or groups working there, and also liaise with the Municipality Council. I felt ashamed by my naïve previous idea that the people working and living in the lixeira had no rules and were not friendly to strangers.

At the lixeira there are all kinds of waste. Parts of baby dolls, shoes, food remains, and many disposable diapers and plastic bags littered the area. I wondered about the stories behind a painting that still looked in good condition to me. The picture portrayed a river with green vegetation on both sides. Why had the owner gotten rid of it? Maybe he/she was moving and had lots of stuff that needed to be thrown away, or maybe it was in the bedroom of an old person who had left this world. Or maybe it was thrown away just because it was very old and the owners had had enough of it. Many more unknown stories surrounded us. The bottles of wine, pieces of cloth, cans of coke, drinks, etc., and bags, pieces of chairs and beds and tables – each item, I thought, had a story behind it. While I

was busy with all the waste and inventing stories and realities around it, Maria was concentrating on the people. She asked some of the workers to pose for her camera. Maria called our attention to the contrast: the smoke moving in the background (there is always smoke from small fires in the lixeira), the silence from the waste, the noise from the neighborhood, and the standstill picture of the workers. The workers accompanying us were all youths in their early twenties. Maria later produced an artistic film that was shown at an exhibition at the Universidade Pedagogica. The visit to the lixeira had an impact, not only on Maria's project, but also on all of us. From our visit to the lixeira, I, along with our students, developed a new understanding of places like the dump.

Rafael, one of the Mozambican students wrote in his diary:

*I had a great learning experience with the workers at the lixeira because everyone makes a bad judgment of them claiming they are beggars. But in reality that is not what they are, they only collect solid waste, which they sell for subsequent recycling. Sometimes they are also seen as street kids, but deep down they are good people who struggle every day for life. I'm very happy to have made friends there. It was not as I expected. I confess that at first I was skeptical about visiting the place and meeting these people, but I discovered that they are friendly and humble people. I was touched when some of them revealed they would like to change their lives if they have a viable option, and one as he revealed he wanted to be in the army. I gave my wishes so that he can achieve his long-awaited dream.*

### 3.2 Lesson Two: At Primary School in Boane

Fanny was very excited about visiting a primary school in Maputo. She wanted to become a primary school teacher and loved working with kids. We drove for 30 minutes before we arrived in Boane, a neighborhood district of Maputo. The road to Boane is filled with people selling fruit and vegetables. Boane is an agricultural area that is pleasantly green, and many people travel there just to buy fruit and vegetables. But on that day the highlight of the trip was a snake fighting with a squirrel just beside the road. I travel to Boane often and was surprised to see this, as it is not something one would see on a daily basis. I jokingly told the group: many people still think that Africa is about bushes, snakes and

monkeys, but that is not the truth. I stressed that the snake show was not an ordinary event. We all had a laugh.

We got to the primary school. The school is located on high-level land from which we could appreciate a beautiful landscape. As we abandoned ourselves to the pleasure of the landscape, for some time we all forgot the purpose of our trip, which was to visit a primary school.

The principal welcomed us into his office and told us about the school's main challenges, including the lack of didactic materials and very weak support from parents in helping with homework. On the positive side, he told us how the percentage of girls attending schools has increased in recent years.

We decided that we would visit classrooms in groups of two. I went to a grade 1 class with Fanny. The kids seemed quite young and were sharing desks, and in many cases sitting two to a single chair. They all had uniforms but these seemed very old and discolored. But their smiles were still full of color. The teacher asked the kids to open to page 12 of the textbook. It took almost 5 minutes for the kids to locate the page and get organized before they were interacting with the teacher on the matters in the book.

Fanny wrote in her diary:

*I attended a Portuguese lesson in a primary class. The teacher proceeds to parrot games throughout her lesson, which is that the students repeat after her. When a student gives the correct answer, all students heartily sing: "You know, you know very well, very well!" This song of encouragement reminded me of how the learning environment is not the same as in Switzerland in public schools. There, the pupils receive a sticker for a correct answer. Contrary to receiving a sticker, students in this class sing a praising song!*

I was on the other side, thinking of the textbook in use. For example, the page the teacher asked them to open had a picture of a boy holding something in his hands, something he was about to eat. The teacher asked the kids what the boy was holding and all of them responded "biscuit." The teacher insisted that they should look closer. All of her attempts to get the "right" answer were in vain. She finally told them that it was a piece of cheese. Although in some parts of the world cheese is something very common, this is not the case in Mozambique. I was not surprised

that none of the pupils “guessed” that the boy was holding a piece of cheese. Then, the teacher explained what cheese was and how it tasted.

The Ministry of Education in Mozambique has been making a huge effort to contextualize the curriculum and the textbooks. For example, in 2004 the Ministry introduced the Local Curriculum, which is supposed to address local issues and content in primary schools. But as evidenced by our observation, there is still much work ahead in order to get textbooks contextualized. Rather than being critical to the teacher and the textbook being used, I was empathetic with the efforts that have been made. The PEERS project provided a moment for reflection on education in Mozambique. Since that day, my mind consistently returns to that class in Boane, as I try to make sense of my own practice and agenda in teaching. I transport the image of that class in an instant, and bring these kids to my own class at the Universidade Pedagógica. In seeing them in my classes, I better understand their challenges and dreams. I am more connected.

### *3.3 Lesson Three: Capulanas Through the Eyes of Gael*

Capulanas are one of my preferred pieces of clothing. A capulana is a rectangular piece of cloth that can be used in different ways: as a skirt, a headscarf, a bed sheet, a scarf, or as a baby bag. Capulanas are always beautiful, and it is hard to resist buying more to add to my collection. In my culture, a capulana is equivalent to respect, so in every ceremony (wedding or funeral, for example) one has to wear at least one capulana. In Nampula, where I was born, a capulana can be seen as an indicator of social status. There, an educated woman must use at least two capulanas at the same time. There are those who show off social status by wearing four capulanas, or more even, to go shopping or elsewhere. In Mozambique, we say that a woman has to have at least one capulana in her handbag at all times. She may need it if it suddenly gets cold or rainy. If you visit Mozambique, one of the common images you will definitely see is women in capulanas.

I had asked Gael what he would like to write about for his project. He was fascinated by the architecture in Maputo. Most of the buildings in Maputo have Portuguese-style architecture. He would spend time



looking at the buildings and admiring them. Gael's project was certainly a surprise to me. He painted Maputo buildings, imagining they were capulanas. This vision was amazing, something very special imagined with care and love – for the city and for the Mozambican people. Indeed, something very intercultural! Later, at the UP's exhibition, Gael's work delighted the eyes of many visitors. Many of them, like me, were very used to Maputo buildings and to capulanas but had never thought to "triangulate" them. From that exhibition, Gael's name will be linked to the Universidade Pedagógica in a special way in the future, as the themes of his painting have been proposed for use on the cover page of textbooks for long-distance learning at UP.

### *3.4 Lesson Four: Switzerland*

Manuel, one of the Mozambican students, was a man of youthful disposition. He would often tell me about his family struggling to survive and his efforts to keep up with his obligations, including paying his tuition fees. He was, however, always in a good mood. At the same time he was kind of a dreamer. Once in a while, I would ask him about his project for the PEERS program, and his response was puzzling. He would assure me that he was in contact with the group abroad and that he was trying to make sense of the experience, guessing what Switzerland would look like. One day, he came to find me at the faculty, and, smiling, he showed me his painting.

It was cold on the day we arrived in Switzerland in May, coinciding with my birthday. The landscape, however, warmed me, as did my excitement, my curiosity, my expectations, and the feeling of arriving after more than 24 hours travelling. I was warmed, too, by the smiles with which the Swiss team greeted us. Six months earlier, we were together in Maputo, and now it was like meeting old friends. Though we had spent little actual time together, we had shared many experiences, in my home, in church, at the cultural show, and numerous other places. I was happy to meet with them again.

My first visit to HEP Vaud was marked by the fact that I had language limitations. I cannot remember the last time I was in a place

where I could not understand the language. This situation made me reflect on my own project on bilingual education. This project involved the Center for Mozambican Studies and Ethnoscience (CEMEC) in collaboration with a Non-Government Organization based in Gaza province, south of Mozambique. My reflections in Switzerland strengthened my vision about bilingual education and assured me of the need to find ways to expand and to deepen the project. I imagined the hall at HEP Vaud as being a classroom where everyone was speaking a language I could not. I imagined the man, who asked me in French something I could not understand, as being a teacher in my class, with me as a pupil. It was like being muted and deafened. Fanny evoked similar reflections of being in a place and not speaking the language. She wrote:

*Through this project, I also experienced the fact of finding myself in a country with a language and a culture different from mine. So I think I can be more empathetic and perhaps set up the appropriate support for these families.*

As I write the last lines of this narrative, my memories run between Maputo and Lausanne. Lausanne, a beautiful city, was very neat. Perhaps too neat for me. I felt cold and missed how noisy the city of Maputo is. I was missing the warm weather of Mozambique. It had been a very intense week, experiencing a new environment, from the physical aspect to the spiritual aspect. It was time for me to travel back to the noisy, sunny, and somehow messy Maputo, my city.

#### 4. Final Remarks

In my initial comments about culture in this chapter, I shared that our aim was not to essentialize any of the cultures. Our idea was not to look and find an essence in Swiss culture or in Mozambican culture. Our aim of interculturality was rather to understand our similarities and differences

in a true dialogue in order to prepare us better in our endeavors as educators. In that sense, I found Fanny's notes in her diary very pleasing:

*In my home we received two students [Manuel and Rafael] from the same culture but with very different worldviews, attitudes and behaviors. It was a very rewarding experience. Indeed, I think that, often, when one meets a person from a different culture from ours, we tend to quickly categorize. Manuel would get up to clear the table and ask to help with the dishes, while Rafael would keep an attitude regarding the role of men and women in housework. It was very interesting. I observed these two very different attitudes, and that allowed me to see that each individual's personality is an element to take into account when making the experience of otherness. Indeed, each person's experiences depend on his or her own values. Moreover, this experience has shown me something I was not aware of before about Mozambique. Indeed, I also had the experience of otherness with people with whom I shared the same culture. I observed that sometimes, despite the fact that our culture is very different, if values such as tolerance and respect are present, we can create friendships. It made me realize that sometimes one can get along better with people with very different social codes from ours, than with people with social codes similar to ours. In fact, I built some great friendships with the three Mozambican students, and perhaps even more than with those of Switzerland. Having had this experience of otherness, I can see what it brought to me in terms of international relations. Indeed, it offers the possibility of building relations with people of other cultures and developing interests that continue communication between countries. Fathi Triki cites the importance of this relationship: "The purpose of any international relationship is to achieve, in one way or another, some consensus that can assure the global community legitimacy that tries to establish perpetual peace."*

I like the fact that the experience did deconstruct her idea of a fixed culture for every Mozambican or any other culture.

In this narrative, I made as if the stories in our project (PEERS-HEP Vaud/UP) were mine. I told the story from my point of view. However, when telling the stories, I did not assume that the meanings and significance I placed on the events were the same as the other participants' in the project, or as the readers'. I told the stories hoping that each of us could make his or her own meaning, crystallizing events, but having in mind the search for an intercultural dimension of the multicultural encounters. In this journey, my definition of *validity* is not that of objective reality, but of self-reflexivity, a kind of self-enlightenment (Lynn & Lea, 2005)

that may lead us to see the project not as an end, but as a means to aspire to new journeys, as Fanny illustrated well:

*This experience allowed me to build true international friendships, and I want to live a new experience. Indeed, I plan to undergo training to teach French as a foreign language in Maputo, knowing that I could build friendships easily with people very different from me, and get to communicate, laugh and philosophize about life.*

Writing the narratives made me re-visit not only places related to my work (primary schools, for example), but also concepts and pre-concepts, including intercultural encounters. I am reminded of Erickson, who makes a distinction between cultural boundaries and cultural borders. According to Erickson, “a cultural boundary refers to the presence of some kind of cultural difference. A border is a social construct that is political in origin” (2004, p. 41). In our group, we experienced differences as boundaries. Reflexively, I ask how we, as teachers, have been able to treat cultural differences as boundaries, and not as borders, in both countries. And it is with this question that I choose to end this chapter, as a way of conveying that the PEERS project represents more a “*sense of continual reformulation of an inquiry than it does a sense of problem definition and solution*” (Clandinin & Connelly, p. 124, 2000).

## Acknowledgements

I would like to thank my colleague and partner in the project, Moira Laffranchini-Ngoenha. Without her leadership and collaboration, the project would not have gone so far. This chapter uses some of the students’ work. I would like to thank Gael, Maria, Fanny, Rafael, and Manuel for their commitment to the project.

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## Chapter 6: Conservation of Native Biodiversity (*Polylepis* and *Compsospiza*) and Improving the Quality of Life in two Andean Communities of Bolivia

### **Abstract**

The University of Teacher Education (Switzerland), Simón I. Patiño University (Bolivia) and Lesley University (USA) conceived a multidisciplinary conservation project that joins faculty and students to serve three communities living in the Andean native quewiña (*Polylepis*) forest in the Cochabamba area, home of the endangered Mountain-Finch *Compsospiza garleppi*. In 2011 PEERS financed and installed 34 ecological stoves to reduce the use of *Polylepis* for fuel wood and developed a systematic education campaign to benefit about 40 families (half the population) in these communities. In 2013, a greenhouse for food and for *Polylepis* seedlings was designed and constructed, and education materials influenced by Freinet's pedagogy, focusing on nutrition, science, culture and conservation were developed to expand the program in two of these communities, with the economic help of several institutions. Within the PEERS framework, the Swiss team developed cross-cultural and international education connections and joined local stakeholders in critical conservation efforts with Swiss and US global stakeholders in education.

## 1. Introduction

### *1.1 Main goal and objectives*

The main goal of this 3 year PEERS Project that began in October 2011 between the University of Teacher Education of the State of Vaud (HEP Vaud), Lausanne, Switzerland and the Simón I. Patiño University (USIP), in Cochabamba, Bolivia was to develop an interdisciplinary and creative educational service program based on preservation to help the rural communities of San Miguel, Janko Khala and Chaqui Potrero in Cochabamba. The two principal objectives were to improve health, education, and nutrition in relationship to the environment and to preserve traditional knowledge, in both cases in sustainable ways.

### *1.2 Global view of the project*

In three years, this project influenced 28 students from three continents (15 in the first two steps and 13 in the last two steps), 5 faculty members from three universities and more than 50 families in three Andean communities (three communities in the first two steps and two communities in the last two steps).

We based our work on a quality approach paradigm (Gilles, 2002; Gilles, Bosmans, Mainferme, Plunus, Radermaecker & Voos, 2007; Gilles, 2010a; Gilles, Detroz, Crahay, Tinnirello & Bonnet, 2011; Gilles & Potvin, 2012) at the center of which we placed the needs of local stakeholders: children, teachers, parents, communities, and authorities. In order to ensure the coherence of actions undertaken, the international group adopted an approach inspired by the teaching model of Freinet (Freinet, 1956, 1960; Goupil, 2007; Reuter, 2008). This approach is in line with the options in the new Bolivian Education Law, in which certain of Freinet's techniques are adopted by teachers.

The project was carried out in four stages which allowed us to address various dimensions of the three Andean communities' lives in

a co-constructive way, and to explore ways to help the sustainability of the program (Aliss & al., 2012). In section 2.1 we give a summary of the teams and their compositions in two last stages, and in section 1.2.3 we explain how they collaborated.

### *1.2.1 First stage (rocket stoves) 2011–2012*

In the first stage of the project, two teams from USIP and HEP Vaud gave ecological stoves out to the communities, located near native threatened *Polylepis* forests, in order to reduce firewood consumption and to improve living conditions for people, since the stoves remove soot and smoke from the room. An educational campaign was also developed to improve community knowledge in relation to the environmental services of *Polylepis* forests (Zurita & Vargas, 2017).

### *1.2.2 Second stage (assessment and relationship with the environment) 2012–2013*

The second stage involved an evaluation of the stoves; this goal was reached by carrying out workshops and making videos that showed us how the conservation knowledge acquired by community members helped in the forest preservation and also in the fulfillment of the community's expectations of whether the new stoves were assets or not. This evaluation informed our work to increase the number of installed stoves and to develop further the educational component to emphasize the integral relationship of the communities with the environment (Zurita & Vargas, 2017).

### *1.2.3 Third stage (Freinet's pedagogy and greenhouses) 2012–2013*

In the third stage of the project we concentrated our work in the communities of San Miguel and Chaqui Potrero. In this stage which occurred simultaneously with the second stage and involved another group of students, we applied some of the educational methods of Célestin Freinet's pedagogy in the two local schools, choosing the strategies in collaboration with the teachers in both communities. We also constructed a greenhouse in the community of San Miguel and

helped to enlarge the greenhouse in the community of Chaqui Potrero, in collaboration with the Armonia Foundation<sup>1</sup>. We expanded the original structure of the PEERS project by including a third academic institution, Lesley University in Cambridge, USA (LU), as part of an innovative ‘tripod’ collaboration. In this expanded project, the USIP’s team focused on the development of school spaces and building greenhouses with parents who were associated with the two schools. The LU team offered new teaching and learning practices by creating and adapting with local teachers three theme-based pedagogical sequences: environmental conservation, nutrition, and celebration of local culture and tradition. The HEP Vaud team co-developed with local teachers and the other two teams a general framework of organizing the work inspired by Freinet’s pedagogy, as explained by Peyronie (2013) and Piaton (1974).

This ambitious stage enriched the intercultural approach (not to mention the complexity) of the project by including the global educational perspectives of a third institution from a third continent. As the co-constructive work done in both communities during this third project stage has similar pedagogical, intercultural and environmental characteristics, after giving some specific information about each one of these two communities, we are going to focus on the work done in the community of San Miguel.

#### *1.2.4 Fourth stage (sustainability) 2013–2014*

In the fourth and final stage of the project, conducted again by teams from HEP Vaud and USIP, we concentrated our efforts (due to budgetary constraints) on developing sustainability of the work in the community of San Miguel, through the smart use of the greenhouse (to improve nutrition and at the same time to obtain profitability) and the development of a program of handicrafts made for marketing. An existing women’s association in San Miguel, revived by the project, allowed us to develop this program of handicrafts.

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1 <<http://www.armonia-bo.org>> (abhennessey@armonia-bo.org).



The first two stages of this work are described in the chapter “*Promoting and evaluating Polylepis forest protection as a way to improve living conditions in the communities of San Miguel, Janko Khala, and Chaqui Potrero*” (Zurita & Vargas, 2017). After giving some specific information about San Miguel and Chaqui Potrero, the present chapter will describe and evaluate only two last stages, focusing on the work developed in the community of San Miguel, as explained above.

### 1.3 Context

#### 1.3.1 Data collection process and preparation work

##### *The community experts*

Once we chose the two Andean communities, and before we visited them, we met two experts who had developed close working relationships with them. Noemí Esther Huanca Llanos<sup>2</sup> and José Balderrama<sup>3</sup> had worked with the members of both communities through social work and scientific projects, respectively, and they assisted us in making initial contact. They explained the work they were developing, informed us of some of the major needs of the communities, and briefed us on the basic norms of the culture and on protocols of respect. We also discussed ways in which we could make productive links with their work.

##### *The community leaders*

San Miguel is a small community with less than 25 families. Chaqui Potrero is somewhat larger, with a little more than 30 families. They mainly work as shepherds and as farmers in very poor conditions (Zurita & Vargas, 2017). Following the conversations with the two experts, we contacted the leader of each community and explained our project ideas and the goals of the PEERS program to provide a mutually enriching intercultural experience for everyone involved. We asked their permission to share our project goals with the whole community.

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- 2 She worked with the community of Chaqui Potrero and produced several publications on conservation. Huanca, N. E. 2011. Reducing threats of endemic and endangered Cochabamba Mountain-Finches (*Poospiza garleppi*). *Ecotone* 3(1) 18–20.
  - 3 Biologist teaching in USIP and working with Armonia Fondation (abhennessey@armonia-bo.org).

### *The families*

Each of the communities holds a general monthly meeting to discuss the needs of the community and to plan approaches to solving current problems. We participated in at least two of these general meetings in each village, and with the support of the community leaders, we shared with everyone the ideas behind our work and solicited their input for ideas, concerns, interests, and needs (within the limits of our financial means). During these early visits we had opportunities to visit villagers' houses and talk with them to learn directly about their problems regarding health, education and relationship with the environment.

### *The teachers*

We held several meetings with the teachers in both communities. Mr. Jaime Tames was the teacher of the community of San Miguel and Mrs. Delia Mancilla was the teacher of the community of Chaqui Potrero. They worked at the schools during the week and returned home only on weekends to rejoin their families. Through our meetings we came to understand a great deal about the needs of both communities in terms of education, health, nutrition, preserving traditional culture, and improving their relationship with the environment.

### *The educational authorities of the department of Cochabamba*

Thanks to a long-standing educational project developed in Cochabamba by USIP in collaboration with Belgium and the universities of Liège and Mons (Aliss, Gilles, Galarza & Dethier, 2010; Aliss, Gilles, Bruyninckx, Detroz, Cauchie & Dethier, 2010) the educational authorities of Cochabamba were very interested and invested in all the educational aspects of our PEERS project. In meeting with these authorities we explained Freinet's pedagogy and organized with their agreement the application of Freinet's techniques. They agreed to extend an official certificate to the teachers of both schools, in order to honor their dedication and acknowledge them for their work.

#### *1.3.2 Living conditions of the two Andean communities targeted*

The two Andean communities are rather isolated and remote from the valley city of Cochabamba. They occur at high elevations between 3,000 and 3,500 meters above sea level, and the people living there are subjected to harsh living conditions. High dropout rates, malnutrition, and health problems affect most families in a very much-endangered cultural and

natural environment. Their diet at the time was mostly composed of carbohydrates, primarily potatoes, which has a multitude of negative health implications for these communities when it comes to the physical and intellectual development of children.

### *1.3.3 Environmental context*

From an environmental point of view, there is a strong threat to the forests essentially composed of quewiña (*Polylepis* spp.), a crucial endemic tree for the endangered Cochabamba Mountain-Finch (*Compsospiza garleppi*) and several other species. The people of these Andean communities use the quewiña wood abundantly for cooking and warming up, thereby accelerating deforestation and pushing the endemic *Compsospiza garleppi* towards extinction. The use of open fires inside houses also leads to respiratory problems as well as eye irritation and ocular infections.

### *1.3.4 Educational context of the department of Cochabamba and inside the two Andean communities*

The Department of Cochabamba has 1,900,000 inhabitants<sup>4</sup> (18 % of the population of Bolivia). Private education is of a higher quality than public education by virtue of having more substantial financial resources. In Cochabamba, we count 4,500 public schools and only 300 private schools. The consequences of low funding on the quality of education in the department are dramatic. In addition to this issue, there exists a high dropout rate the causes of which have been widely studied in research conducted by Dr. Cynthia Nava Romano of the University Simón I. Patiño, in Cochabamba, through a project funded in Bolivia by the University Development Cooperation of the government of Belgium, in collaboration with the Universities of Liège and Mons (Nava Romano, 2012, 2014, 2015). Dr. Nava's research has developed with the help of the assessment center of Simón I. Patiño University (Aliss, Gilles, Bruyninckx, Detroz, Cauchie & Dethier, 2010).

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4 In 2013.

In addition to a lack of resources related to public education, there is only one school in each of the two communities, at only the primary level and with only one teacher per school. Schools in both villages have at most 2 classrooms, in which kids are split in level groups, such as 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year in one room, and 4<sup>th</sup>, 5<sup>th</sup> and 6<sup>th</sup> year in the other. Moreover, the remoteness of houses scattered widely in the expanse of the villages means that children have to walk long distances in the mountains to reach school. Coupled with malnutrition and early morning work commitments, the consequences of this distance are significant on students' fatigue, concentration, and motivation. The harsh living conditions lead to more or less random school attendance.

#### *1.4 State of research in the field*

Research has been carried out on the environment of the Andean communities of the department of Cochabamba, including studies of an endemic bird in danger of extinction, the Cochabamba Mountain-Finch (*Compsospiza garleppi*), and the quewiña tree (*Polylepis* spp.) threatened by deforestation (Huanca, Hosner & Hennessey, 2009). On the other hand, regarding the living conditions of the isolated communities inhabiting this region, as far as we know, there is no research identifying problems and leading to proposals for solutions. However, such population-based research is crucial to achieving a human-environment (socio-ecological) balance in a sustainable development perspective. It is in this perspective that our PEERS project aims to contribute to the improvement of the quality of life in the high altitude Andean communities by using an integral approach respecting the natural environment, preserving the culture of the populations, and ensuring the sustainability of the results through education.

Increasing the local awareness of the extinction danger of the quewiña tree (*Polylepis* spp.) and the Cochabamba Mountain-Finch (*Compsospiza garleppi*) is a primary goal of research and reforestation programs. Thanks to work developed in 2009 by the Bolivian biologist Noemi Esther Huanca Llanos, an award winner of the Conservation Leadership Program (CLP), the bird is now a true symbol for conservation of the natural environment

in the region. The Mayor of Quillacollo (secondary city near the targeted region and home of the two teachers in the villages) has ordered that an image of the bird be displayed on all official vehicles. An educational campaign was also developed in the communities belonging to the endemic area, to increase local appreciation for this bird and its equally special habitat. A project entitled “Preventing Habitat Loss for the Endangered Cochabamba Mountain-Finch” and focusing on reforestation efforts for the endemic quewiña tree, was approved in the community of Chaqui Potrero (October 2012 to January 2013) by the Foundation Armonia in 2012.

The enthusiasm generated in the region through these campaigns to raise awareness of the plight of the Cochabamba Mountain-Finch has been an excellent lever for mobilizing the Andean communities around socio-economic projects aimed at exploiting the potential of this endemic bird for ecotourism. The work done in Guyana by the stage three team from Lesley University in Cambridge, Massachusetts (USA), in which students become ‘ecovolunteers’, or ‘ecovoluntourists’ and earn academic credit through cross-cultural coursework and rigorous community-based service projects<sup>5</sup>, is an interesting model for sustaining the work undertaken in San Miguel.

How to lower school dropout rates and build educational alliances to help accomplish this goal are among the research fields of Prof. Dr. Jean-Luc Gilles (Gilles, Potvin & Tièche Christinat, 2012). He has demonstrated the importance and necessity of building partnerships between parents, teachers, school authorities and the socio-cultural and economic environment to fight effectively against the phenomenon of dropping out. Our work modeled a place-based project approach with full community and multi-partner support and involvement and an integral educational component as one manifestation of this strategy. Importantly, this PEERS project added a rich intercultural component that has had an equally profound impact on the remote high Andes villagers who do not normally have much outside contact and the PEERS project faculty and students from three countries and continents. The enthusiasm for this important locally acting globally cooperating work has spread to spark the interest of potential donors.

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5 <https://forumea.org/award-for-excellence/>.

## 2. Procedure

### *2.1 Multidisciplinary approach*

This ambitious project required the convergence of many people with a very large spectrum of expertise, knowledge and skills, especially in these two last stages, when we had the collaboration of 13 students and 3 faculty members from three universities on three continents:

#### *LU (pedagogy for primary education)*

2012–2013:

Faculty: Morimoto, David (Ecology)

Students: Hsieh, Rebecca (Education) and Silva, Rachel (Education)

#### *HEP Vaud (Master in Educational Sciences & Practices)*

2012–2013:

Faculty: Gilles, Jean-Luc

Students: Lehmann, Roch (Educational Sciences & Practices), De Bonhome, Stéphanie (Educational Sciences & Practices) and Snapir, Dimitri (Educational Sciences & Practices)

2013–2014:

Faculty: Prosperi, Oliver

Students: Ruchet, Julie (Educational Sciences & Practices) and Käller, Martin (Educational Sciences & Practices)

#### *USIP (scientific knowledge associate to the project in the areas of environmental and commercial sciences and in architecture and bioingenieriy)*

2012–2013:

Faculty: Aliss, Emilio

Students: Rojas, Josué (Architecture), Iturri, Aracelli (Architecture) and Gutiérrez, Richard (Architecture)

2013–2014:

Faculty: Aliss, Emilio

Students: Müller, Alejandra (Commercial Sciences), López, Gabriela (Bioengineering) and Rendón, Adriana (Environmental Science)

## 2.2 Meetings and working online

During the third stage (*cf.* global view of the project), the teams of HEP Vaud, LU and USIP worked in a very coordinated way to develop the project and achieve the principal goals. They used three benchmark meetings, in Boston (September 2012), in Cochabamba (March 2013), and in Lausanne (May 2013) to develop their work, carry it out, and report and reflect on it. These meetings were focused, intensive, and rich in cultural exchange. They also worked throughout the academic year using social network applications (Skype, Facebook, email) as part of the project goals, to update each other on progress and ask to questions, to develop didactic material collaboratively (HEP Vaud and LU teams), to consolidate the planning of nursery construction with the leadership of USIP team, and to exchange information on the follow-up of the relationship with the two Andean communities. Monthly reports were presented that allowed faculty to monitor and engage in all aspects of the process. The meeting in Cochabamba was particularly significant for all the teams, because it allowed for the dynamic interchange of four rich cultures: two northern cultures of the USA and Europe and the two southern cultures of rural communities and the city of Cochabamba. The resulting experiences had high emotional impact and powerful team-building influence. Testimonials are very significant. Here and later we present some of them:

*“The project is going on concerning the construction of the green house. I would like to increase the monitoring about the communication between my students and those of other countries. In general, the project is very good” (Mr. Jaime Tames, teacher of San Miguel)*

PEERS Experience is an important event in my life, which I learned to have ideals, commitment to my country and my people, learning that small projects may have a big impact in many lives, learning to value how others perceive the world and thanks this fill me with significant knowledge. The project is also a trip to the own inside world. (Josué Rojas, USIP team)

The fourth and final stage of the project, focused on project sustainability, was developed in the same way by the teams of HEP Vaud and USIP. The teams held two general meetings, one in Cochabamba (October

2013) and the other in Lausanne (May 2014), and they worked all year using social networking, maintaining the disciplined habit of presenting monthly reports. The last meeting in Lausanne allowed both teams to evaluate all of the results of the project. We present one of the testimonials from the last HEP Vaud team (July Ruchet):

We strengthened our taste to meet the other. This desire to learn more about the other, about his habits of doing, his customs, his ideas ... This desire to know how he thinks, how he sees you ...

### *2.3 Financing institutions*

The following institutions contributed financially to the operations in order to ensure the success of the project:

- *LU*: Financing the hosting of Bolivian team in Cambridge, the LU team trip to Cochabamba, and didactic material for rural communities.
- *HEP Vaud*: Partial funds for the rocket stoves, funding of teaching materials necessary for the chosen rural schools and local trips to visit these remote communities (San Miguel and Chaqui Potrero) of the city of Cochabamba.
- *UNESCO group of the school Belvedere (BV) in Lausanne*: Partial funds for the rocket stoves.
- *Fondation Simón I. Patiño*: Financing the trip of the Bolivian team to Cambridge, the construction of greenhouse in San Miguel and local travels of Bolivian team in San Miguel and Chaqui Potrero.
- *Simón I. Patiño University*: Funds for developing the handicraft program in San Miguel.
- *Organisation ARMONIA*: Funding for the improvement and enlargement of the greenhouse existing in Chaqui Potrero.
- *Hervé Burgener*: A Swiss citizen concerned with ecology. Funds for developing sustainability in the community of San Miguel, in the final stage of the project.



#### *2.4 Improving education with the help of Freinet's Pedagogy*

Lesley University's role within this particular PEERS project was to create lesson plans that reflect the teaching strategies of the LU students, while also incorporating Celestin Freinet's teaching methods, as explained by Freinet (1956, 1960); Goupil (2007) and Reuter (2008). Children are all individuals that express themselves through different means. Their personalities, cultures, desires, and needs must all be considered within the classroom – not every child is the same nor do they learn using the same methods. The focus of these lesson plans was to integrate the arts and experiential learning into everyday school learning as a means to connect the student's lives and experiences to the curriculum. These activities were not meant to replace current curriculum, but to enhance student learning by utilizing their individual strengths and various intelligences. They use multiple approaches to learning and incorporate a variety of materials and mediums. Using multiple methods will contribute to a healthy development in all the intelligences, as suggested by Gardner (1983, 1993) and Schneider & McGrew (2012).

Other considerations made during the development of these lesson plans that tied into Freinet's pedagogy included the idea that children flourish at their own pace, and children construct their own knowledge as a means of taking responsibility for their learning, and developing autonomy in interaction with others and the world around them. Adaptations and modifications were included in the lesson plans for teachers to utilize to meet students' specific needs. Students were also given the opportunities to create whether it was art or poetry as a means of showing their own knowledge and understanding gained; and due to the emphasis on culture preservation throughout the lessons, students are able to connect with and be active members of their community.

Different class organization methods were progressively introduced with teachers, from adaptations of Freinet techniques of "What's New", the "Class Council", the "Correspondence School", the "Vegetable Garden" and "Jobs" to empower children. In all its actions and interactions,

the international group was particularly attentive to the values of local communities and project stakeholders.

#### *2.4.1 Lesson development*

The curriculum was based on Creative Writing and Integrated Teaching through the Arts. A thematic unit with three strands including Cultural and Natural Preservation focusing on the Cochabamba Mountain-Finch and the *Polylepis* tree, and Nutrition was created focusing on experiential learning. The USIP team created an aquaponics system tying in with the nutrition lessons while the HEP team planned an international pen-pal program connected to the lessons surrounding cultural knowledge and literacy.

These lessons also integrated perspectives of experiential learning. This perspective is described as learning through physical actions, but also reflecting on those specific actions (Kolb, 1984). Along with Freinet's perspective, students do not learn just from books or teachers' words but need to create experiences for themselves to have a better understanding of the information being taught. Children need to interact with their world where they can have hands-on experiences with their learning. Instead of just reading about plants' various uses, students are encouraged to go out and find these plants and put the uses to practice.

An additional goal of the project was to create lessons that were applicable to student's lives and their communities; therefore the thematic curriculum focused on the preservation of the land and the culture of the students' communities, as well as the students' lifestyles, leading to many activities regarding the endangered Cochabamba Mountain-Finch and students' knowledge of their own culture related to local stories or even recipes of local cuisine. To facilitate the preservation of local culture and sustainability of the project, the planned activities incorporated many uses for natural materials.

Since the schools have limited resources, the situation lends itself to John Dewey's idea of place-based education where students, teachers, and community members work together to solve neighborhood issues (Zeece, 2003, p. 14). A major component of the lesson-writing process was making sure the lessons addressed the actual needs of the

communities as opposed to introducing an outside perspective of what they should be learning in comparison to western schools.

#### *2.4.2 Co-constructing with community teachers*

During the meeting with Chaqui Potrero and San Miguel teachers, LU students explained the ideology behind the curriculum, the teaching methods and a description of the themes of culture, nutrition, and natural preservation. The teachers expressed their interest in partnering with PEERS and were excited that the lessons contained experiential learning methods instead of lecturing methods. They cited the importance of addressing the endangered species, the applicability of the work with their students (aged 5–13), and the importance of having coverage of all content areas. We agreed that at least one lesson would be tried during the visit to the community in order to assess its effectiveness.

#### *2.4.3 The pedagogical experience in Chaqui Potrero*

The PEERS teams from Bolivia, Switzerland, and the USA went with the local students, their teacher, and some interested parents on an excursion into their local natural environment to collect leaves of medicinal plants. During the walk, students spoke about the purposes of each plant and how they learned what they knew. Students then wrote their personal stories and knowledge regarding each medicinal plant.

The LU team shared letters written to them by first grade students from a Cambridge, Massachusetts school. The teacher challenged students to write response letters and include their own illustrations. The lesson was adapted to meet each of the students' capabilities. Older students wrote with more detail, and younger students drew pictures.

#### *2.4.4 The pedagogical experience in San Miguel*

To help create some structure in the multi-aged classroom, students were divided into two groups by age, and they then engaged in lessons separately. The teachers were thus better able to match lesson content to the ages of their students. One teacher had chosen to display clay artwork the students created, from pinch bowls to figurines of local animals, and

engaged students in discussion about how the clay was from nature and how it got there as part of the local geology.

The students used a previous PEERS projects which consisted of a wood burner stove that needed less of the *Polylepis* plant and created less smoke. (Zurita & Vargas, 2017).

#### *2.4.5 Self-analysis of PEERS students*

To conclude this third step of the project, as explained in section 1.2.3, HEP Vaud, LU and USIP met in Lausanne, Switzerland, sharing their final products and synthesizing the overall outcomes of the project. Partners centered in Bolivia stated that teachers were looking forward to using the methods presented within the curriculum in their own classes. The Cambridge first grade students who wrote letters to the students in Bolivia continued to do a whole unit on Bolivia and did a whole unit on birds inspired by the Cochabamba Mountain-Finch.

The lessons sampled during the visits were successful and helped to form relationships between the communities and the PEERS teams. Overall, the shared learning experience was a powerful one for all PEERS participants from the three countries, setting a hopeful precedent for future PEERS projects and building lasting collaborative partnerships between institutions. Sustaining the program financially remains the biggest challenge.

### 3. Results

As explained in section 1.1, the principal objectives were (1) to improve health, education, and nutrition in relationship to the environment and (2) to preserve traditional knowledge, in both cases in sustainable ways.

The first objective was accomplished partially with the stoves installed and with the educational campaigns developed during the two first stages of the project (*cf.* results of Zurita & Vargas, 2017). This objective was completed in these two last stages of the project with the

construction of the greenhouse and with the applied techniques of the Freinet's pedagogy, as explained in section 2.4. The lessons created by LU team integrated perspectives of experiential learning, and we saw how the learning through physical actions was significant for students (*cf.* sections 2.4.3 and 2.4.4). The lessons were applicable to student's lives and their communities and we saw how students, teachers, and community members worked together to solve neighborhood issues, such as malnutrition (*cf.* section 3.2.2).

The second objective was accomplished with the development of the handicraft program. In this section, we explain these results in more detail and the how we helped to develop project sustainability.

### *3.1 The construction of the Greenhouse and the development of a handicrafts program: from theory to practice*

#### *3.1.1 The design of the nursery in San Miguel*

The green house was constructed on land adjoining the school. USIP architecture students designed the nursery after consultation with several firms specializing in gardening and agriculture construction, seeking a good balance between the dimensions of the building and the price and quality of materials.

The construction occurred in many stages. For each stage, students reserved entire days to advance the work (eventual purchases, travel back and forth to the community and construction activities). To be truly participatory and engaging, the construction had to be a community activity, led by USIP students. Daily fieldwork of people and long distances to school made it difficult at first, but participation of the community gradually increased as they saw the results. High altitude climate conditions (especially strong winds) damaged materials during the process, but it gave the architecture students challenging opportunities to enrich their experience and to strengthen the construction, adapting their work to natural conditions of the environment. At some point in the process, some pieces of the construction (tensors) disappeared, delaying the process, since it was necessary to go back to the city to repurchase the

items. This led to a community reflection on the ownership of the project, which led in turn to an increased quality of work and strengthened relationships of parity between the various protagonists of the project.

### *3.1.2 Recuperating the traditional knowledge in handicrafts*

Elder women in the community kept the traditional knowledge in handicrafts, but they no longer had the material resources to develop their work. Furthermore, the grazing of lamas and sheep occupied most of the women's time. Therefore, this project aimed to find a way to rescue the ancestral techniques of weaving. At the same time it was necessary to incorporate the most modern techniques to facilitate weaving and dyeing because this project also aimed to incorporate women's groups in economic activities that could contribute to the income of their communities and households and promote the development of a tourism activity. In order to contribute to this goal, the project donated five looms, needleshed, crochet, sticks and other equipment and organized workshops on how to use it all, so that the women's association of the community could start making their first garments.

## *3.2 Constructing sustainability*

One of the aims of the project was to find a way to guarantee sustainability. All the team of the last PEERS project worked to construct sustainability in three principal areas developed in the two last steps of this ambitious project.

### *3.2.1 Education*

USIP students followed up on the educational activities in the schools through periodic visits to the community, coordinated with the school teacher visits, to ensure the continued use of the Freinet techniques. They found a way to associate the educational activities of the school with nursery production and with the handicrafts program. Practicing

Freinet's techniques, they also developed a handbook of medicinal plants with the help of the students and their teacher.

### *3.2.2 Greenhouse and nutrition*

To guarantee the sustainability of the activities linked to the greenhouse, Mr. Jaime Tames, the teacher of San Miguel helped us to develop a new program, considering the needs of the community. This program covered three components:

- An educational campaign, to empower children and adults in the field of nutrition;
- An adequate distribution of the production (25 % for children's nutrition, 25 % for adults' nutrition, 50 % for selling);
- A marketing program for selling 50 % of the production in the neighborhood and reinvesting in seed.

### *3.2.3 Handicraft program*

Students at USIP developed guidelines for the organization of the manufacture and sale of handicraft, with the idea of integrating it into a tourism promotion program. The logo made with the women's association implies embodies this idea.

At the end of this last step, the activities for these three areas, education, greenhouse and nutrition, and handicrafts, were set to continue as a reflection of sustainability, and as the responsibility of the village teacher and the women's association of San Miguel.

## **4. Benefits of the whole project and conclusions**

After 3 years of working in a co-constructive way, practicing PEERS concepts, keeping our main goals and adapting our actions to reality, we can summarize the principal benefits of these 4 linked projects (described

in two chapters as explained above), influencing 28 students (15 in the first two steps and 13 in the last two steps) and 5 faculty members of three universities and more than 50 families in three Andean communities (three communities in the first two steps and two communities in the last two steps).

As the conclusions of the first two steps of the project are contained in the chapter “*Promoting and evaluating Polylepis forest protection as a way to improve living conditions in the communities of San Miguel, Janko Khala, and Chaqui Potrero*” (Zurita & Vargas, 2017), we concentrate here on the principal benefits of the last two steps:

- *Theory joined practice in a real living experience*, allowing us to find the links between the cultural, environmental, health, socioeconomic and educational aspects of life in the two Andean communities and help improve the quality of these five aspects. Through the work of this project Freinet’s pedagogy and other synergistic strategies came alive in the linked educational, environmental, socioeconomic, health, and cultural aspects of the nursery, nutritional education program, and handicraft program, engaging whole communities.
- *Interdisciplinary research construction with stakeholder involvement* allowed the development of Real Community Service in a sustainable way, helping to build intercultural relationships and solidarity.
- *Intercultural enriching activities* allowed the development of intercultural skills in a mutually significant and profound life experience.
- *Disciplined coordination of collaborative work at a distance through Real-Life situations happened*, thanks to a periodic contact using social networks and monthly reports.
- *Self-analysis of students occurred*, thanks to the culminating face-to-face meetings (*cf.* 2.4.5).
- *Management of this international project in order to promote research publications*, which allowed faculty to participate in at least five international symposia (AMCE Reims 2012, Eskisehir 2016, PEERS SUMMER SYMPOSIA San Diego 2013, Brussels 2014 and Lausanne 2015).



We can represent the benefits of this project with the following testimonial:

*Working with real people on real projects made me realize there's much more to consider than just applying what is learned in the academic pursuit of a career; we need to be more aware of the history, needs and rights of communities we are working with and realize that you can teach as long as you notice you are learning (Adriana Rendón, USIP student).*

With regard to durability, we must honestly point out that this has been achieved thanks to the long duration of the four successive projects, but that to follow up on it in the years after the project, it would be necessary to organize future coordinated activities, with additional specific funding, which is not part of the PEERS program. We acknowledge the ambitious nature of this project involving three teams from three continents working with several other groups in remote communities, and the logistical and financial challenges that come with it. However, given the power of impact the project had on its participants, those we served, and the natural environment alike, we suggest that it is well worth the effort and cost. We continue to explore models that would support the PEERS objectives in more financially sustainable ways over the long term.

We can conclude that the teams that have participated in this project have been able to successfully accomplish the objectives of the whole project and to face several of the challenges posed by the PEERS program, as explained in the introductory chapter “*Origin, Foundations, Objectives, and Original Aspects of the PEERS Program Linking Research and Training in Internationalization of Teacher Education*” (Gilles, 2017).



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## Chapter 7: Promoting and evaluating *Polylepis* Forest Protection as a Way to Improve Living Conditions in the Communities of San Miguel, Janko Khala, and Ch'aqui Potrero

### **Abstract**

A project was carried out in three communities in the Andean mountain forest in Cochabamba, Bolivia, in collaboration with the PEERS program. It was executed and evaluated on behalf of the communities involved. In the first stage, we gave ecological stoves to the communities, which were located near *Polylepis* native forests, to reduce their firewood consumption and to improve their living conditions. These devices can reduce the amount of soot and smoke in rooms. An educational campaign was also developed to improve the communities' knowledge of the environmental aspects of *Polylepis* forests. The second stage involved evaluation; this entailed carrying out workshops and making videos showing how conservation knowledge acquired by community members helped in forest preservation and in the fulfillment of the community's views regarding whether the new stove was an asset.

### 1. Introduction

Nowadays, natural Andean native forests tend to disappear due to deforestation by villagers inhabiting the surroundings. This is caused by a lack of education about nature conservation and the sustainable use of forest resources. For this reason, raising awareness of these issues

is a priority to prevent the destruction of forests and the wide range of environmental services that they provide (Guizada, 1996).

Little information on these native Andean forests is available, despite recognition that the *Polylepis* forests of the region of Cochabamba (Southern slope of Cordillera del Tunari) are hotspots for endemic birds (Fjeldså & Kessler, 2004), that they represent important areas for bird conservation (Soria & Hennessey, 2005), and that they play a very important role in the fragile high-Andean ecosystems. Data on quantification and characterization are especially limited for *Polylepis* forests, which now exist almost exclusively on rocky slopes (Ibisch & Mérida, 2004).

The importance of the native forests of *Polylepis* in the Andes lies in several ecological services that they provide (protection and retention of nutrients, water retention and runoff regulation, erosion control), and in their uses (wood for construction, fuel, tannery, and medical applications).

These Andean forests are under serious threat; it has been estimated that they have been reduced to nearly 10 % of their original area (Kessler & Driesch, 1993; Fjeldså & Kessler, 2004; Navarro & al., 2005). The main causes of the losses, which are accelerating, are fires, overgrazing, crop introduction, firewood extraction, and reforestation with exotic species (*Pinus* and *Eucalyptus*).

Moreover, a high number of animal and plant species only thrive in close relation with *Polylepis* forests. Clear examples are the bird species *Oreomanes frasseri* and the shrub *Berberis commutata* (Churisiqvi) (Hennessey & al., 2013). Among mammals, the marsupial *Thylamys pallidior* is considered to be restricted to these forests (Yensen & al., 1994), and several rodents such as *Akodon kofordi*, *Oxymycterus hiska*, *Phyllotis* spp., *Thomasomys* sp. *novae*, *Abrocoma* sp. are unique to the forests and depend directly on them (Tarifa & Yensen, 2001).

On the other hand, the traditional use of firewood to cook inside the houses releases large amounts of soot indoors, which has been proven to cause respiratory and ophthalmic diseases.

From the preceding arguments, it follows that conservation of *Polylepis* forests and the biodiversity they sustain is critical. This project

aims to contribute to the conservation of *Polylepis* forests and to improve people's quality of life by raising consciousness on the environmental advantages of reducing the use of *Polylepis* trees as firewood and the health benefits of using ecological stoves such as Rocket stoves.

This project foresees the reduction of firewood consumption by using an ecological stove. It has been established that stoves such as Rocket or Lorena stoves are appropriate to save fuel consumption and reduce soot and smoke. Rocket is also the least expensive ecological stove to install.

Energética, a company that was in charge of the manufacture of these ecological stoves, is in Cochabamba. The benefits that this type of stove provides include saving wood, time, and money, creating less smoke inside the house, and preventing accidents from burns to children.

### *1.1 About the Communities*

San Miguel and Janko Khala are small communities with less than 25 families each. Their inhabitants mainly work as shepherds, and they also grow tubers like potatoes, as well as onions and broad beans. Chaqui Potrero is slightly bigger and better organized. Its leaders have very strict rules for governing the community.

The children attend school in each community, where the teacher provides instruction in all the subjects up to the fifth grade. Afterwards, the children transfer to high school, which in many cases is much further away from the community. Students from many communities attend.

The language used in these schools is Spanish. However, the communities speak Quechua, which is also used in the classrooms on occasion. The students have lunch at school, and each takes a snack, which is often a very poor meal. For example, they may take boiled potatoes with cheese or broad beans.

The families that belong to a community are generally more connected and hold monthly or bimonthly meetings, where the community leader presents any problems that have arisen during that period. These issues

may range from irrigation canal construction or use to others such as theft within the community.

The houses are made up of very small and precarious rooms. The majority of houses have only two rooms: one where everyone sleeps and one where the family keeps supplies and prepares meals.

The families prepare their meals with old-fashioned kitchens that use firewood inside the room. Generally, the children are in charge of starting the fire for the kitchen, running the risk of burns and inhaling smoke, which can cause illnesses such as asthma and other respiratory problems.

In the first part of the study, we wanted to have a complete overview of the quality of life of the inhabitants of San Miguel, Janko Khala and Ch'aqui Potrero. We considered issues such as food supply, education, and the people's interaction with the environment (how they use natural resources in their daily life).

Two PEERS projects were carried out during the academic periods of 2012 and 2013, consisting of a collaboration between Haute École Pédagogique (HEP Vaud – the University of Teacher Education of State of Vaud) in Lausanne, Switzerland, and Universidad Simón I. Patiño (USIP) in Cochabamba, Bolivia. Both projects were financed by the Simón I. Patiño Foundation, UNESCO, and HEP. For each project, different teams worked remotely, under the guidance of one professor from each university.

### *1.2 About the PEERS Teams*

The 2012–2013 HEP Vaud team was made up of Professor Jean-Luc Gilles, Viktoria Ryjevskaja, Adozinda Da Silva, and Oliver Proserpi. The team for 2013–2014 was Professor Jean-Luc Gilles, Vanessa Campos, Claudia Raymond, and Isabel Xufre. The USIP team for 2012–2013 was made up of Professor María de los Ángeles Zurita, Neolia Barea, Miguel Fernández, Laura García, Rosa Guizada, and Laura Trigo. The team for 2013–2014 was Professor María de los Ángeles Zurita, Andrés Calderón,

Armando Ferruffino, Daniela Sevilla, and Sofia Vargas. Professor Emilio Aliss coordinate these international projects for the USIP.

### *1.3 First-stage Objectives*

- To improve the San Miguel and Janko Khala community's knowledge of the environmental services of forests and their importance for conservation.
- To reduce the consumption of firewood in communities located near the *Polylepis* forests by installing Rocket stoves in their homes.
- To reduce the soot released into the kitchens.
- To develop an educational campaign for the communities, with different content and methods for children and adults.

### *1.4 Second-stage Objectives*

- To develop and carry out educational workshops for the children in Ch'aqui Potrero.
- To provide Rocket stoves to a larger number of families to improve their living conditions.
- To make a video of the current living conditions in the community.

## 2. Methods

This project was carried out in three communities located within the Tunari National Park: San Miguel, Janko Kala, and Ch'aqui Potrero. These locations were selected because of their accessibility and favorable conditions for the project (i.e. people's willingness to participate).

## 2.1 First-stage Design

A consensus was reached with the towns' residents and an agreement was signed with the municipal government to which the communities belong.

The project coordinator made two trips to contact municipal government leaders from two communities.

A census of the number of households using wood-burning stoves was carried out over a period of 2 days.

**Workshop I:** In order to present our objectives to the community and show the importance of *Polylepis* conservation and the use of Rocket stoves, we carried out a workshop with adults and children separately.

Fifteen Rocket stoves were installed: six were installed in San Miguel (in five homes and the school) and nine were installed in Janko Khala. This activity was carried out with the assistance of Energética, the NGO that provided the stoves for this project.

**Activities:** *A one-day trip to make an inspection of the kitchens (roof, position, parapet...) and three one-day trips to install the 15 Rocket Stoves.* The amount of firewood consumed per household was evaluated for the 13 households using Rocket stoves and compared to firewood consumption of 15 households with traditional stoves.

*Two one-day trips for evaluation.* Environmental education workshops were organized to increase awareness of the ecological services of *Polylepis* forests, conservation actions that people can apply, and the benefits of using Rocket stoves. At the end of the study, the effects of Rocket stoves on firewood consumption and household contamination were shown to the community's residents to promote the use of this ecological stove.

## 2.2 Second-stage Design

The activities described below were completed prior to the workshop. The different materials needed for the children's interaction in the workshop were prepared in these activities. Most activities were arranged



in Switzerland by the participating students, and one was prepared by the Bolivian students.

**Meetings via Skype:** In order to coordinate activities, schedules, and team duties, the teams held meetings through Skype. These were scheduled beforehand with an outline of the topics for each meeting.

**Reports:** To ensure adequate communication and understanding throughout the meetings, each team wrote brief reports in English of what was agreed during the meetings. With these, we were able to verify that the topics had been discussed clearly and to keep track of the progress made by each team.

**Photographs:** Each team sent photographs of its work to record progress made on the workshop materials.

**Team duties:** HEP Vaud students were responsible for the workshop design and development; USIP students were in charge of gathering adequate information needed by the HEP Vaud team to design and carry out the workshop.

Upon arrival in Cochabamba, in October 2012, the HEP Vaud team joined the USIP team to visit the communities. In Ch'aqui Potrero, the workshop began with a presentation in which the HEP Vaud team showed the school children – aged 5 to 14 – how they traveled from Switzerland to Ch'aqui Potrero.

Following this activity, the Swiss students explained some relationships between the *kewiña* (*Polylepis*) and other elements in the children's community. For this segment, the HEP team had prepared a large landscape poster with loose elements (plants, animals, etc.) that the children were to place in their proper positions. While describing these relationships, the children placed the drawings of animals, medicinal plants, and other elements onto the scenery.

For the workshop, the HEP team suggested making a jigsaw puzzle of a *kewiña* tree for the children to put together. To help the HEP team with the materials, the USIP team prepared the *kewiña* puzzle, doing so with a photograph of a tree in the community. One by one, the children put the pieces together and the Ch'aqui Potrero scenery was complete.

In the next part of the sequence, the children colored in drawings of the elements that they had seen before in the community scenery.

Afterwards, they discussed the relationships again to later match them up according to their uses. For example, they would match a kewiña tree with medicine.

In the last part of the sequence, the children and the teams went to gather the appropriate kind of firewood to prepare a hot snack. This activity was used to evaluate how much the children knew about picking out the right type of firewood and using the right sizes for the ecological stoves.

The children showed what they knew about using the Rocket stoves. After gathering the correct type of firewood, they helped prepare breakfast for everyone by heating milk in the stove at school. Everyone enjoyed a snack prepared by the HEP team and the children. Afterwards, everyone gathered in the yard to sing and play.

While the workshop was carried out and the children were engaged in other activities, other members of the teams helped install 14 more stoves in the community.

To conclude the activities, the HEP team put together a video alongside people from the community in order to register their personal points of view about the Rocket stoves and how they helped them. They also discussed whether the community's expectations of the Rocket stoves had been fulfilled, as well as whether the new stove was an asset or not, and if it had helped in the preservation of the kewiña forest.

### 3. Results

#### 3.1 First-stage Results

- *To improve knowledge of the San Miguel and Janko Khala community members on environmental services of forests and their importance for conservation.*

Through workshops given to increase awareness and sensitivity towards the importance of the forests and their environmental services, the children and adults were shown the many benefits of forest conservation. The community, and especially children, learned about the uses of *Polylepis* trees for nutrient protection and retention, water retention and run-off control, erosion control, construction, fuel, and medicine.

- *To reduce the consumption of firewood in communities located near Polylepis forests, by installing Rocket stoves in their homes.*

Initially, the members of the communities used large branches of *Polylepis* to fire up their stoves. After the workshops, they learned to substitute smaller branches of other species, like that of *Eucalyptus*. With this new practice, damage inflicted upon local forests will be minimized.

- *To reduce the soot released in home kitchens.*

This objective produced an immediate positive impact for the members of the communities. A marked reduction of smoke and soot was evident inside the kitchens. Moreover, through further surveys, the residents indicated that there was an improvement in their living conditions as a result of not having smoke indoors.

A follow-up questionnaire is still pending, to be answered several months after installation.

- *To develop educational campaigns targeted separately at children and adults in the communities.*

Through the workshops, we were able to learn that the children acquired an environmental awareness much more quickly than adults, and that the entire population was left with a deeper understanding of the natural richness that surrounds them.

### 3.2 Second-stage Results

- *To develop educational workshops for the children in Ch'aqui Potrero.*

The HEP Vaud and USIP teams prepared and executed a workshop for the children of Ch'aqui Potrero, which was successful in its goal of raising awareness of the importance of the *Polylepis* forests. This was verified by interactively evaluating the children's knowledge of the topic after the workshop.

- *To reach a larger number of families with a Rocket stove in order to improve their living conditions.*

Thanks to a donation of \$1000, 14 more stoves were installed in the community.

- *To make a video of the current living conditions in the community.*

The HEP Vaud team put together a video of the community, showing the current living conditions, testimonies from its members, and comments from the HEP team on the project execution.

## 4. Project Evaluation

### 4.1 Positive Aspects

- **Communication channels:** The channels were well established and effective. Not all participants had the same proficiency in the language used for communication. Nonetheless, this problem could be overcome.
- **Response:** Quick replies from both teams made progress smooth and reliable.

- **Communication quality:** Despite language barriers and the distance (there is a 6-hour time difference between Bolivia and Switzerland), communication was fairly clear.
- **Improvements from Stage 1 to Stage 2:** With the exception of some lack of clarity, communication and organization throughout the project improved.
- A rich **cultural exchange** provided a highly rewarding experience for each member of the teams.
- **Successful execution** was shown by the community members' increased knowledge and improved cooking practices, as well as their management of natural energy resources.

#### *4.2 What Can Improve?*

- Clearer initial timetables.
- New and improved strategies to overcome language barriers.
- An earlier start can lead to more detailed work.

#### *4.3 The Cultural Exchange Experience*

For the Swiss students, arriving in Bolivia, and specifically in Cochabamba, meant getting in touch with a reality that they had only seen through the media like television, newspapers and magazines. Having such a close encounter, especially with the children in the communities, allowed them to see how they cope and develop as people, and how they use natural resources in these areas.

On the other hand, the Bolivian students also had very special experiences when they traveled to Lausanne, Switzerland, given that they were able to encounter new technological advances and better developed systems such as transportation and waste management in the city, having visited a wastewater treatment plant and a solid-waste disposal facility.



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## Chapter 8: Learning Sequences About Water

### **Abstract**

Mankind has to contend with a string of concerns, but water remains one of the major challenges of our century, present and future. The objective of this study, in the context of sustainable development, is to study the issue of water with pupils in Switzerland and Burkina Faso: representation, cycle, cost, management, transportation, preservation, hygiene and rituals. The aim is to obtain different perspectives about water, using questionnaires and learning sequences for students, and an interview guide for educators and resource persons. This study, which has made it possible to assess the conditions and differences in teaching between the two countries, has enriched the knowledge of both teams. It has revealed that children are enthusiastic about exchanges between them and able to change behaviour patterns. Furthermore, aware of the importance of the resource, they are capable of taking the initiative when they are involved in the reflection and action.

### Introduction

Water is a colourless, odourless, tasteless, transparent, insipid and liquid body at atmospheric pressure of 0° to 100°C. Its chemical formula is H<sub>2</sub>O and 97.4 % of the Earth's water is to be found in ocean reservoirs; 2.05 % is in ice caps and glaciers; The remaining 0.55 % is distributed among the ground water, lakes, rivers and soil. Finally, less than 0.01 % is found in the atmosphere and the living world (Le Robert, 2003; Pierre, G. and Fernand V., 2009). It is unevenly distributed on the surface of the Globe;

some countries like Switzerland have it in abundance, others like Burkina Faso suffer water stress.

The project for exchanging experiences in social networks (PEERS), initiated by the University of Teacher Education of State of Vaud (HEP VAUD), set up a link between two teams: the HEP Vaud in Switzerland and the Ecole Normale Supérieure (ENS) in Burkina Faso. The study focuses on the subject of water in the light of sustainable development: representation, cycle, cost, management, transportation, preservation, hygiene and rituals. It offers different perspectives on water between the two countries.

## 1. The problem at hand

The issue of water is a concern for all governments worldwide. In Burkina Faso, a continental country in West Africa, 79.6 % of the total population practice rainfed agriculture (Ministry for Economy and Finance, 2007). In this context of climate change where rainfall is random, this population exposed to various risks including food risks, is mostly rural. They are therefore forced to develop coping strategies (Idani, 2014b).

In 2010, 95.5 % of the urban population and 75.6 % of the rural population had access to drinking water, an average of 81.2 % of the total population. However, there are disparities between regions: 92.2 % of the Central Region enjoys access, while the figure for the centre-west stands at 37.1 %. The disparities between the cities and rural areas are high: 9 in every ten households in the city have access to drinking water, with 8 out of ten connected to the network of the National Office for Water and Sanitation (ONEA). In the countryside, barely one in two households used drinking water, 40 % depending on wells in 2010 (SCADD, 2010). In 2012, the drinking water coverage, which was 63 % in the rural areas and 83 % in urban areas (Ministry of Water, Hydraulic Developments and Sanitation, MEAHA; 2013), had increased to 63.54 % and 86.2 % respectively in 2013 (Ministry of Economy and Finance, MEF, 2013).



In terms of sanitation, only 19 % of the people take their waste to dumps or have them removed; 67.3 % of non-regulatory dumps were to be found in rural areas against 38.6 % in urban areas (SCADD, 2010). The great flood of the 1<sup>st</sup> of September 2009 in Ouagadougou revealed the urgency of the situation.

In rural areas, the rate of access to household sanitation rose from 3.1 % in 2012 to 6 % in 2013, an increase of 2.9 points; in urban areas, it was 29.1 % in 2013 against 27 % in 2012 (MEF, 2013).

This gloomy picture is one of the consequences of poverty: 43.9 % of Burkina Faso's population lived below the poverty line in 2009 (SCADD, 2010) and 40.10 % in 2014: according to the National Technical Secretariat of the SCADD.

On the other side of the ocean, Switzerland, the rates of access to drinking water and sanitation stand at 100 %.

This bi-colour table justifies the appropriateness of the question of water with the children, future builders of our States. Education being the best gateway for behavioural change (Idani, 2009), the main question we ask ourselves is:

“Can a teaching sequence on water have an impact on the representations of daily use of water by the pupils?”

## 2. Methodology

The goal being to contribute to better water management by pupils, both teams, Swiss and Burkinabe, composed of teachers and student trainees, therefore developed questionnaires and learning sequences for the pupils and an interview guide for educators and resource persons. After a diagnostic assessment to determine the prerequisites, the learning sequences were administered before the final evaluation.

The students were able to attend in a reciprocal manner the lessons given by their colleagues either in Burkina or Switzerland. They were

able to see the differences in teachings and had informative discussions with school officials and resource persons from both countries.

### *Diagnostic assessments, teaching sequences and post-tests*

These activities in Burkina concerned the classes of grade 1 (2P in CH), grade 2 (3P in CH), grade 3 (4P in CH) and grade 4 (5P in CH) and in Switzerland an infant class and a 3P class. Diagnostic assessments made it possible to take stock of the prerequisites and the final evaluations revealed the theoretical knowledge of the students after the learning sequences on water.

#### *2.1 Implementation in Burkina*

The activities were carried out in mid-April 2013 in the presence of the Swiss team and concerned the districts of Ouagadougou No. XII and Kokologho (45 km from Ouagadougou), making it possible to compare schools in urban and rural environments. The classes involved were: in Kokologho those of grade 1 (8–9 years), grade 2 (10–11 years) and grade 4 (12–13 years) and grade 5 (12–13 years); and in Ouagadougou, those of grade 2 (10–11 years) and grade 3 (11–12 years).

A total of 180 students were involved in the experiment, 30 in each of the six identified classes.

In the diagnostic assessments and final evaluations, the questionnaire was first used to assess the representation of water by children, its availability, accessibility and management, before discussing its sanitation or use.

The training sequences (four), with the theoretical course and the experiences, were proposed to teachers for amendment before being rolled out.

The goal was to instil in students the concept of their own personal responsibility through the seemingly trivial daily actions they carry out, and to show them that they can change their behaviour to ensure the proper management and quality of the water they use.

The interview guide made it possible to interact with teachers in relation to teaching methods and with resource persons for the knowledge of rituals.

## *2.2 Implementation in Switzerland*

The project was conducted in two classes taking into account the level of the students at the beginning of December with 5<sup>th</sup> year pupils in the Harmos system (Intercantonal Agreement on Harmonisation of Compulsory Education) and in the second half year with 4<sup>th</sup> year pupils in the Harmos system.

After the diagnostic assessment, the water cycle and water types were addressed through an experiment, before they were asked to draw the water cycle or complete it.

Regarding accessibility/the tap, the water cycle before and after the tap was studied, in small groups and the students tried to reconstruct the water cycle. Some performed group work on the water cycle. The work was then pooled, making it possible to follow the two real cycles. Finally, the drinking water circuit was observed, and the functioning of a water purification plant.

The use and management of water were broached using empty bricks and a table to be completed, so that students become aware of how much water they consume daily.

The notion of payment and means of saving water were also addressed. Discussions in groups of pupils on the issue made it possible to tackle the difference in the use of water in Switzerland and Burkina Faso.

After discussing the different uses of water outside the household: breeding, crops, agriculture, etc., a treatment plant was studied step by step using drawings.

Finally, a final evaluation made it possible to test our pupils on the lesson to observe what had been learnt during the sequence.

### 3. Results

#### 3.1 Results of the diagnostic assessment

##### *Definition or representation of water*

**In Burkina**, the results of the diagnostic assessment reveal that 41.67 % of urban pupils against 25 % of rural pupils, i.e. an average of 30.35 % of the surveyed pupils were able to define water properly. The explanation lies, for the urban pupils, in media access, and for the rural pupils, in the sociocultural context: the level of expression in French, the official language, being very low.

**In Switzerland**, as the students were younger, it was a matter of ascertaining what water means for them.

Table 1: Water representation by Swiss students.

<i>Liquid</i>	<i>Thirst</i>	<i>Drink</i>	<i>Life</i>	<i>Important</i>	<i>Sea</i>	<i>Bath</i>	<i>Vitamins</i>	<i>Recipes</i>	<i>No opinion</i>
II	I	IIIIIIII	IIII	I	II	I	I	I	I

Source : Field surveys, Switzerland 2013.

The majority (13/20) represent water as a drink or source of life.

##### *Availability and period of water scarcity*

While in Switzerland drinking water is always available, nearly three quarters of respondents (73.33) in Burkina say they do not have it all year. This reality is more acutely felt in Kokologho (79.16 %) than in Ouagadougou (61.67 %); these rates confirm the fairly-distributed unavailability of water. For those who have permanent access, this is explained by the size of the urban facilities or the location of the residence near a permanent water table in rural areas.

The water shortage in Kokologho is also due to the lack of a home water supply system and inadequate standpipes and wells under high pressure.

In Burkina Faso, the lack of water is felt especially during the dry season which lasts for 8/12 months (85 %); between March and May, a period when heat and evaporation peaks are reached, when water consumption needs increase and the dams dry up. Suffering is higher among rural children (88.33 %) than among urban citizens (78.33 %).

In Switzerland, 16/20 children feel they do not always have it when they need it.

### *The origin of water and the source of supply*

Water comes from the sky or rainfall according to pupils. The surprise is that 85.83 % of rural pupils found the source of the water against only 55 % of those living in an urban environment; Their advantage comes from the daily observation of natural phenomena. They often wash in the rain, or collect the water for drinking, washing clothes or dishes. Furthermore, by participating in water collection, they are well informed about at least one part of the water cycle. This is not the case for urban dwellers who have a tap at home.

Table 2: source of water according to the young Swiss.

<i>Lakes, streams</i>	<i>Springs</i>	<i>Sea</i>	<i>Moun- tains</i>	<i>Rivers</i>	<i>Tap</i>	<i>Shops</i>	<i>Every- where</i>	<i>No opinion</i>
IIIIII	I	IIIIII	I	III	IIIIIIII	I	I	II

Source : Field surveys, Switzerland 2013.

In Switzerland, for the majority, water is found in lakes, streams, rivers, seas and mountains.

The majority of respondents who source their water from wells where the water is free (61.67 %) come from Kokologho; in the city, the water supply must be paid for and it comes from the tap. The answers are in line with the reality of each and is linked to the poverty of the parents.

Table 3: source of water supply in Burkina.

	<i>OUAGADOUGOU</i>		<i>Kokologho</i>		<i>TOTAL</i>	
	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
From the backwater	4	6.67 %	3	02.5 %	7	03.88 %
From the well	00	00 %	74	61.67 %	74	41.11 %
From the tap	53	88.33 %	14	11.67 %	67	37.22 %
From the fountain	3	05 %	29	24.16 %	32	17.79 %
TOTAL	60	100 %	120	100 %	180	100 %

Source : Field surveys, Burkina 2013.

### *Location of the water point*

Altogether, 81.66 % of the surveyed pupils source their water near their home; water is therefore within reach of the consumer, even if 19.34 % of respondents travel at least 2 km to fetch it. This constitutes a major difficulty for populations, including the pupils who are often solicited for this task.

Table 4: geographical location of the water supply in Burkina place.

	<i>OUAGADOUGOU</i>		<i>Kokologho</i>		<i>TOTAL</i>	
	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>	<i>Number</i>	<i>Percentage</i>
In the courtyard	37	61.67 %	18	15 %	55	30.55 %
In the district	19	31.67 %	73	60.83 %	92	51.11 %
In the village	00	00 %	27	22.5 %	27	15 %
In the neighbouring village	1	1.66 %	2	01.67 %	3	1.67 %
In the neighbouring district	3	05 %	00	00	3	1.67 %
TOTAL	60	100 %	120	100 %	180	100 %

Source : Field surveys, Burkina 2013.

While in **Switzerland**, it appears that the availability of water is permanent and the average number of taps available, at the pupils' home, is three; they walk ten steps to use it at home or at school.

Table 5: number of taps to which Swiss children have access at home.

<i>Léa</i>	<i>Anes</i>	<i>Mélanie</i>	<i>Ali</i>	<i>Lara</i>	<i>Francisco</i>	<i>Marinus</i>	<i>Daniel</i>	<i>Anais</i>	<i>Mimoza</i>	<i>Julia</i>	<i>Younes</i>	<i>Onicha</i>	<i>Eljona</i>	<i>Loan</i>	<i>Katia</i>	<i>Catarina</i>	<i>Alexis</i>	<i>Kim</i>	<i>Clément</i>
4	2	1	3	3	2	3	1	2	3	4	3	3	5	2	2	3	2	2	4

Source : Field surveys, Switzerland 2013.

### *Knowledge of the cost and principle of paying for water*

Burkina Faso pupils who live in an urban environment (78.33 %) seem to be more aware of the fact that their parents pay for water, compared with an average of 20.84 % in the rural areas. These figures are consistent with reality because parents often send their children to pay the water bills.

As regards the cost of water, it varies according to the recipient used and the time of year. But, in general, a 10-litre bucket of water costs 5 CFA francs<sup>1</sup>, a can of 20 litres of water 10 CFA francs and a 200 litre drum 60 CFA if one owns the container. Home water delivery multiplies the price by  $n$  depending on the availability of the commodity and the time of year. As the Swiss children are very young, this question was not asked.

The representation system in which each group of students lives therefore influences the answers. While 98.33 % of pupils in the capital Ouagadougou, accept that it is necessary to pay for water, 94.16 % of pupils in *Kokologho* refuse to accept this fact. For the first group, water is scarce and cannot be free because it is treated and sent to the homes. For the latter, water is life and in this sense, whether one is rich or poor, one cannot be deprived of it; paying for water is a violation of human rights. This view is governed by traditional values. Indeed, when a stranger arrives in a home, they are first offered water to drink before the subject

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1 One euro = 655.5 CFA.

of the visit is addressed. According to a *mossi* saying: “*you do not need to ask for water, it is given*”.

In Switzerland, of 20 students, 9 know that their parents pay for water, 3 are unaware of this and 8 have no opinion.

### *Water management*

Almost all of the respondents (98.33 %) could name at least one use of water. The rural pupils are in the lead with 99.16 %, while 96.67 % of urban pupils could name a use. Water is part of the children’s day to day life: showering, washing clothes and dishes, watering plants, cleaning the house, ensuring a healthy living environment, drinking, etc. Therefore, children are aware that water is an indispensable element in their everyday life.

Table 6: Water use by Swiss children.

<i>Washing (show-ers)</i>	<i>Wash- ing hands</i>	<i>Drink- ing</i>	<i>Against fatigue</i>	<i>Water- ing</i>	<i>Baths</i>	<i>Eat- ing</i>	<i>Against heat</i>	<i>Washing clothes</i>	<i>No opin- ion</i>
IIIIII	IIIIII	IIIIII- IIIIII- III	I	II	I	I	I	I	I

Source : Field surveys, Switzerland 2013.

Swiss children consider water as a drink first and then as a means of hygiene; the other uses are secondary.

In Switzerland 13 out of 20 pupils admit that they waste water and 7 think that they do not.

The majority of the Burkinabe sample (71.11 %) claim to use more than two buckets of water per day at home. The proportion of those who use more than two buckets a day in Kokologho is higher than that of respondents in Ouagadougou (79.17 % against 55 %).

According to these figures, there seems to be a paradox: the majority of children use more than two buckets a day. But empirical observations corroborate the fact that children in urban areas shower on average twice a day and those in rural areas once a day every evening and very rarely in



the morning. However, we can qualify this by taking into account the fact that pupils in rural areas water the animals and do the laundry themselves.

### *Water transportation and child participation*

We observe an improvement in living conditions; 75 % of respondents claim to carry water with a cart, especially in rural areas (85.83 %). These carts, manufactured locally, make it possible to carry 4–6 cans of 20 litres of water or two 200-litre drums. They also allow the transport of goods to the market or the mill. However, people still carry water on their head (15 %), but they are very often near the water point.

The Swiss are all connected to the water company networks.

The pupils are involved in the “water chore”: 86.67 % of rural pupils against 76.67 % of urban pupils or an average of 83.33 % of pupils are expected to fetch water. Indeed, in Africa, from an early age (from 7 years) children are given certain chores, including fetching the family’s water supply, caring for livestock and farm work. But very often, the effort and the work demanded of the child are proportional to their physical capabilities. This is inconceivable in Switzerland.

### *Transportation containers and water storage*

Traditional water transport containers such as gourds and water pots (6.67) are tending to disappear; 70 % of respondents report using the 20 litre container, originally containing oil and costing 500 FCFA. The second most used container is the 200-litre barrel (15.15 %), for an average price of 10,000 FCFA. The water pot (6.67 %) is used in rural areas and the bucket (06.11 %) mainly in the city by those who have a home tap. Water is above all stored in water pots in the rural areas (76.67 %), in cans (45 %) or barrels (20 %) in the city.

Table 7: water conservation at home by Swiss pupils.

<i>Tank</i>	<i>Bottles</i>	<i>Use carefully to avoid waste</i>	<i>By closing</i>	<i>Use less</i>	<i>Fridge</i>	<i>No opinion</i>
I	III	II	I	I	I	IIIIIIIIII

Source : Field surveys, Switzerland, 2013.

Some preschool children do not know how water is stored.

### *Water purification and wastewater treatment*

Over two thirds of respondents in Burkina Faso (70 %) managed to suggest at least one way to make water drinkable. Only 1/3, representing the youngest students (grade 1) is unfamiliar with the process, as is the case for the Swiss pupils who are very young and had no opinion.

Table 8: recognition of drinking water.

<i>Drinkable</i>	<i>It is marked on it</i>	<i>Clean, smells good</i>	<i>In bottles</i>	<i>In rivers or from taps</i>	<i>Transparent</i>	<i>No opinion</i>
II	II	I	I	I	I	IIIIIIIIIIII

Source : Field surveys, Switzerland, 2013.

In the field of sanitation, awareness-raising continues to be necessary in Burkina, as 2.78 % of the respondents do not wash their containers before putting water in them and wastewater is mismanaged by 77.78 % of pupils (Ouagadougou, 81.67 %; Kokologho, 75.83 %): they are generally poured into the street, because the drainage system is inadequate in the city of Ouagadougou and non-existent in Kokologho. Officially it is estimated that the sewerage coverage rate for the capital stands at less than 5 %, which means that diseases related to water and lack of hygiene in the children's living environment, such as malaria and diarrhoea, are frequent.

The treatment of wastewater and excreta in Burkina Faso is 10 % and 27 % respectively in 2012 (MEAHA, 2013).

### *Water use in rituals*

In Switzerland, of the 20 students, 6 recognise that water is used in religion in a special way, 9 claim the opposite and 5 have no opinion.

In Burkina, the population practises religious syncretism. However, it appears that the Muslim religion is dominant among our respondents, followed by the Christian religion and finally animism. 76.67 % of children know that water is used in their religion (91.67 % in the cities, 69.17 % in rural areas).

Water plays a special role in the rituals of all religions in Burkina Faso. It is used for christenings among Christians, to perform their ablutions before prayer by Muslims, to greet, ask for forgiveness, and make a complaint to the ancestors in the traditional religion. Water is also a symbol of fertility in some traditions.

It should be noted that the Mossi are the ethnic majority in the sample (82.78 %) since the investigation took place on the “Mossi plateau”.

The respondents gave incorrect answers (92.22 %) on the use of water in ethnic rituals (81.67 % for urban and 97.5 % for rural pupils). In their defence, we can state that in Africa, children are not involved in the rituals, it is a matter for grown-ups. However, in all ethnic groups, water is regularly used to either:

- welcome strangers;
- make complaints to the ancestors;
- bathe the deceased;
- cast spells or ward off bad luck, etc.

Traditionally, water can be used for good or evil.

After the diagnostic assessment, the children participated actively in the learning sequences.

### *2.2 Administration of the learning sequences*

In Switzerland, two weeks were required for the two future teachers.

In Burkina Faso, two teachers in Ouagadougou and four in Kokologho prepared and delivered learning sequences over three weeks.

For each lesson, the teachers relied on visual aids and experiments: boiling water at 100°C that evaporates and forms water droplets on the lid and falls back into the pot. In some sequences the class-group went on field trips to places that foster a better understanding of the concept or phenomenon. The method used is the active method, with considerable involvement of students in the discovery of concepts and awareness of the various issues.

### 3. Results of the final evaluation

In Switzerland, drawings and images were used to help the children to understand. The final evaluation shows a good level of understanding of the subject after administration of the learning sequence.

In Ouagadougou and Kokologho some questions were deleted or modified compared to their wording in the diagnostic assessment to discover the children's capacity to transpose the information they had learned.

The results of the final evaluation are satisfactory.

#### *Definition and availability of water*

From 30.55 % at the time of the initial assessment, the rate of correct answers increased to 86.67 %. These results show that 4/5 of the pupil respondents now know how to define water in a satisfactory manner.

Water is not readily available according to 75 % of urban and 96.67 % of rural children, or an average 89.44 % of the pupils because the sources of supply of drinking water on both sites, Ouagadougou and Kokologho, are inadequate. The proportion of pupils who say they have constant access to water (10.56 %) are probably close to water sources, have a tap at home or regularly set aside a substantial stock of water supplies. 99.44 % (98.33 % for urban and 100 % for rural pupils) claim

to be aware that everyone does not have easy access to water; 80 % of pupils now know that the availability of water is linked to several factors including rainfall, climate and vegetation and the geographical location of the country.

### *Accessibility, cost and management of water*

The lesson on the water cycle has been thoroughly assimilated, but awareness must continue because 12.22 % gave an unsatisfactory answer to this question.

While everyone agrees that water is vital, 73.89 % also accept that its transformation into drinking water and its distribution have a cost, and that the consumer should bear at least part of the costs in order learn to manage it well.

Almost all of the respondents (97.22 %) are familiar with the multiple uses of water and know how to manage this precious liquid.

Most of the pupils (66.67 %) answered that wasting water will deprive the community of water at some point. The rational use of this commodity is a sign of our personal responsibility. The awareness-raising efforts must continue because 27.78 % of pupils agree that their parents waste water. This is interesting since it could mean that these pupils pay attention to the consumption of water at home. We can therefore expect a change in behaviour.

The children (74.44 %) made resolutions to reduce water wastage in school by raising awareness, by storing water in a clean jar in class so as not to go individually and at any time to the pump or tap; 75.56 % of pupils think they can reduce the amount of water they waste in the home.

To better manage water at home,  $\frac{3}{4}$  of the respondents made relevant proposals: awareness, water storage, closing the tap after use. Children are therefore capable of imagination and creativity to solve a problem brought to their attention.

*Water purification, water sanitation*

Approximately 78.89 % of our surveyed pupils now know how to make water drinkable, either by using chemicals or by simple decantation or by using certain natural products.

79.44 % of pupils are now aware of the importance of always properly washing containers before filling them with water to ensure that it remains drinkable. However almost 21 % gave wrong answers. This is an invitation to go over hygiene measures in the classroom once again in the context of future hygiene lessons.

As for sanitation, <897 more than half of our sample, or 57.22 % was able to answer that wastewater must be drained into cesspools, which is quite satisfactory, although the available cesspools and gutters are insufficient. 90.56 % of pupils now know that throwing rubbish into the street is a source of disease. But 42.78 % have not yet understood the message, to go by their answers because the family environment has a big impact on the representations and behaviour patterns of the pupils.

The gutter provided for rainwater, is unfortunately considered by many as the overflow of wastewater, 31.11 % see no danger in draining wastewater into gutters. But by discharging dirty water and solid waste into the gutter, the latter become blocked, causing diseases (68.89 % of respondents) or generate additional costs to make the water drinkable.

*Water use in rituals*

The vast majority of pupils (72.22 %) were able to give examples of the use of water in different ethnic or religious rituals of their community.

## 4. Discussion and Conclusion

The Swiss colleagues noted that the planning was drawn up by an external person (supervising teacher) not involved in the life of the class. The lessons were based solely on oral work, by extension, on learning by heart and no teacher sought to appropriate it, although there was some consultation and modification of certain points to reflect the level of the pupils. There are strong similarities from one lesson to another, the same phrases, word for word: “Water is life.” “Do not waste water.” “Water allows us to live and to wash ourselves.” and “For us, water is not available all year.”

In Switzerland, we proposed an experiment to understand the water cycle, we drew pictures with them, questioned and distributed diagrams to be completed, etc. In Burkina, there was a drawing/diagram already fully drawn on the board that had been done in advance by the teacher.

The lack of available equipment plays a major role in the choice of teaching methods. A diagram prepared in advance saves time. But by drawing it as we go along in order to better explain it, it would have put the pupil in a position of researcher and not just a spectator. The number of pupils naturally has a big influence on the teaching method. Therefore, there is much less focus on group work in our classes. With 60–100 students in the classroom and benches packed together so tightly you can hardly pass, the teacher asks for answers from those who put up their hand, and who, generally, are sitting in the front: it is impossible to interrogate everyone.

The teaching method in Burkina Faso is very different from that in Switzerland and teaching is much more based on learning by heart and standard phrases that the teacher teaches, repeats and has the pupils repeat back until they know how to repeat the phrase, even imitating the intonation of their teacher!

If we had the same number of pupils, we would probably adopt the same methods.

The colleagues in Burkina Faso welcome the discovery of another culture and friends through the trip to Switzerland and are surprised by

the very small numbers of pupils in Swiss classrooms (10–20 children). They received a very rich documentation, particularly on the theme of sustainable development and participated in the International Festival of Geography (FIG, 2012) in Saint Dié des Vauges in France.

The study of water enhanced their teaching capacity and has enabled some to defend a dissertation on the issue of sustainable development.

Comparing a developed country where water is controlled with another underdeveloped country that suffers from water stress is rewarding.

We would like to emphasise the excellent atmosphere that prevailed throughout this project, both among the pupils (from Switzerland and Burkina Faso) and teachers (from Switzerland and Burkina Faso). The very high quality of the sequences rolled out and the opportunity for students from both countries to attend lessons reciprocally proved very beneficial for all. It is always possible to tell, to explain how the teaching conditions are in another country, but nothing will ever replace a classroom presence in another country.

Education remains the best way of training in sustainable development, which is a concept that is unfortunately little known by the preschool and elementary school actors in Burkina Faso (Idani, 2014A).

Water is a commodity that can be preserved in terms of quantity and quality. More effort must be made to save water. The monitoring and maintenance of the pipelines at individual and collective level would help avoid leaks. Consumption can also be reduced through awareness. Some techniques that are far and few between, such as the drip, need to be brought into more general use. It still seems difficult to fight against pollution, not for technical reasons but for financial reasons and lack of awareness (Baud, 1998). In case of shortage, the population is forced to abandon their habitat.

Migration is one of the most striking phenomena of globalisation. In the past, mobility was an essential factor in the adaptation of the populations of West Africa to changes in their environment (Ki-Zerbo, 2013).

On the “central plateau” in Burkina Faso and two other sites in immigration areas in the north, the greed of the producers, human



pressure on the area (47 % of market gardeners do not have land on the shores of lakes), expertise in the practice of market gardening and finally the filling of the lake (recognised by 90 % of market gardeners) determine the mobility of producers (Ouédraogo FC. & al., 2012). But migration is not always beneficial. A study in Brazil shows that population migration caused by climate change may aggravate the vulnerability of migrants (Alisson F.B. and Ulisses E.C.C., 2011).

In the context of sustainable development, it seems important to explain, for and with the pupils, the need to consider individual actions in their articulation with decisions and actions within the social, political and collective framework (Nathalie F. (2011). The inaccessibility of drinking water or lack of water could prove a disaster for mankind, which is why children should be aware of this risk from an early age. Demographic growth will only increase the water wars. As water is a finished product, How will our children live tomorrow if we do not train them or do not take the necessary decisions incumbent on us today?

## 5. Recommendations

In future, both teams would like to have correspondents with the same profile, who can live together during the reciprocal visits.

The correspondence between pupils allows them to directly exchange testimonials, to get to know each other and understand the culture of each other in order to forge mutual acceptance.

For the next PEERS we are thinking of addressing the subject of waste management with the children.



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## Chapter 9: The Added Value of an International and Intercultural Exchange: The PEERS-Mozambique Project

### **Abstract**

In 1694 French scholar Antoine Furetière wrote that young people need to travel in order to learn how to live in the world. This is no less true in 2017, particularly when an intercultural and teaching exchange is held between two countries with cultures and educational systems as different as those of Switzerland and Mozambique. The discovery of alterity allows the individual not only to expand his horizon and broaden his mind, but also to learn a great deal about himself, his own ideas, and his own country. Mailos (in Groux & Tutiaux-Guillon, 2000, p. 183) clearly explains this intercultural purpose of international exchanges and comparison in education: “*The goal is to lead to a change in professional practice by triggering a change in the conceptual framework in which this practice is situated. It is not a case of going out to look for solutions, or of importing models [...] but really of causing a shock and triggering a questioning, perhaps a reassessment.*”

### 1. Introduction

“*Traveling is necessary for young people to learn how to live in the world*” (Furetière, 1690): this was Antoine Furetière’s conclusion back in 1694 and anyone who has traveled abroad, no matter for how long, will have returned profoundly changed and able to confirm the truth of this statement. The discovery of Elsewhere, however demanding it may be

to begin with, allows the individual not only to expand his horizon and broaden his mind, through plural and productive experiences, but also to learn a great deal about himself, his own ideas, and his own country<sup>1</sup>.

It is in this spirit that we have led, since 2013, the PEERS program (the *Projet d'Étudiants et d'Enseignants-chercheurs en Réseaux Sociaux* or Student and Teacher-Researchers Social Networks Project) in collaboration with the Pedagogical University of Maputo in Mozambique. This African component of the PEERS program brings together three students from the Haute École Pédagogique du Canton de Vaud in Lausanne, Switzerland (HEP Vaud, the University of Teacher Education of State of Vaud), three students from the Pedagogical University of Maputo, Mozambique (UP), and a professor from each institution, around a research project. The PEERS-Mozambique program allows participants to work on intercultural approaches to educational studies. Its aim, through an anthropological approach, is for participants to develop an understanding of interpersonal relationships and cultural diversity in the different disciplinary fields. It is a collaborative endeavor designed to enable students to open themselves up to “world knowledge,” to reach an international consciousness, and above all to develop transversal skills. In the context of personal development, these include people, interpersonal, and intercultural skills; in the context of the teaching profession, they include classroom management, teacher-pupil relationships, and teaching stance. These skills are an integral part of the Professional Skill Standards (“Référentiel de Compétences Professionnelles”, 2015) of the HEP Vaud<sup>2</sup>, which, in its pursuit of excellence, has two major objectives:

- to offer a university level education to student teachers, as well as post-graduate training to teachers and all education professionals;
- to stimulate the field of research and development of educational studies, particularly in the context of international research projects,

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1 For ease of reading, male pronouns are used in the text with reference to both male and female students.

2 The HEP Vaud is a training institute for student teachers in the public education system, for all levels of compulsory and post-compulsory education (from around 4 to 18 years).

and provide education professionals with a collection of pedagogical resources (“Mission et Organisation: la HEP Vaud en Bref”, 2017).

The PEERS program thus perfectly meets these institutional objectives by offering student teachers an opportunity to combine theoretical and practical training with scientific research, to experience the didactic-pedagogical and professional development aspects of their work, to be empowered, and to reinforce their understanding of the national education system in comparison with an international one, in our case, that of Mozambique.

In fact, following their stay abroad, the students return to Switzerland having experienced much more than this. Daily life in the peer-student’s family, and shadowing them at the university, in the classroom, and in their private life, particularly enriches the terms of the exchange. Project participants are confronted by numerous cultural differences, particularly in the educational context, for which they were unprepared by their previous teaching experiences. This leads them to reflect on how the same elements work in Switzerland, and on the way in which they will consider these in future. As part of the institution’s MSPRO35 module, which certifies the completion of a personal project, one student<sup>3</sup> focused on the concept of “the experience of alterity,” a fundamental concept in anthropological methodology understood as a way of studying otherness, and wrote that:

*This immersion in Mozambican culture, although short, had the effect of creating in me strange, mixed, and contradictory feelings. On one hand, I was fascinated by the sincere friendship that quickly grew between the three Mozambicans and us, the three Swiss women. The shyness and reserve of our initial meeting were quickly dispelled, leaving behind curiosity, and the desire to exchange, learn, and share. I quickly understood Dumont’s (2008) definition of interculturality: “The intercultural is facing the Other, not to confront it, but to complete it, to live in parallel with it, to hear it, open up to it, and build a dialogue with it. All cultures are equal, and mutually observe and inspire one another. The intercultural is the intersection of languages-cultures and their desire to understand one another”.*

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3 Supervised by Mrs. Laffranchini Ngoenha, January 2017.

Through stories of experiences and an analysis of the trips to Switzerland and Mozambique, this chapter aims to analyze from an intercultural perspective the impact of these study visits, both on individuals, and on their ways of thinking about teaching after their return from these short trips. It seeks to uncover the realizations, reassessments, and reflections triggered by immersion in a different culture, and to reflect upon the impact of this experience on the current practices of program participants.

Two distinct levels of influence of these experiences on the individual and on teaching will be considered: the first, more general, is purely linked to the encounter with cultural diversity, with no direct connection to the country visited. In other words, students participating in the exchange are led to reassess their way of considering certain aspects of schooling because they work differently, but this realization could just as easily take place in a country other than Mozambique or Switzerland. The proof of this is that the students observe a certain number of differences of the same “type”; for example disorientation, incomprehension, and astonishment (these aspects will be discussed in more detail later in the chapter). The second, more specific level, is on the other hand directly linked to the Swiss and Mozambican cultures. The students become cultural ambassadors of a kind, both of their native culture in the host country, and the visited culture back in their own country. It is these two levels of experience, particular and unique, of the encounter between cultures, that characterizes the added value of the international and intercultural exchange.

From a structural point of view, I will first introduce the underlying principles of the intercultural approach to educational studies that serves as a basis for my reflection. I will then briefly present the context and the schools in which these experiences have taken place. The focal point of the chapter consists of facts relating to the intercultural experience, its analysis, and impressions and reflection on the issues highlighted by program participants. For each aspect, I aim to proceed by comparison in order to develop criteria for the contribution that these experiences may make to personal development, and in the context of professional practice. Finally, in conclusion, I will return to the importance of international visits for both students and student teachers.

## 2. Intercultural Approach

Since I am analyzing the PEERS program from an intercultural perspective, it is important to first present the theoretical framework for my reflection and observations. In order to synthesize the principles of the intercultural approach, I propose to answer three questions: firstly, to outline the definition of interculturality that I am using and its relation to the topic of focus; secondly, to show how this definition influences my working method; and thirdly and finally, to clarify the purpose of my approach.

The intercultural approach considers the relationship between different cultures. Claude Clanet specifically defines interculturality as:

the collection of processes – psychic, relational, group, institutional – generated through cultural interactions, in a relation of reciprocal exchanges, and from the perspective of preserving the relative cultural identity of the partners involved (Clanet, 2002, p. 21).

It is about observing what is produced when different cultures, or rather “individuals from different cultures,” (Abdallah-Preteuille, 2014, p. 18) meet. And in the setting of these international exchanges, students certainly enter into contact with another culture. While retaining their own cultural identity, they discover and experience a new universe for the space of one to two weeks. The intercultural perspective as an approach that studies the “*zones of encounters, resemblances, differences [...] between cultural models*” (Guerraoui & Troadec, 2000, p. 26), thus lends itself well to the analysis of these experiences in the field of teaching and the comparative study of educational systems. In some cases, beyond contact with a new culture, these students experience “culture shocks” over the short period of time. But from a perspective of interculturality, these shocks can be the trigger for true questioning. Margalit Cohen-Émerique reminds us that the encounter with alterity can lead to a culture shock, namely “a reaction of disorientation, even frustration or rejection, upheaval and anxiety, or in a positive manner, an astonishment,

a fascination; in sum, it is an emotional and intellectual experience” (Cohen-Émerique, 1999b, p. 304).

In his MSPRO35 module research report, one student (July 2015) explained that he had decided to participate in the PEERS-Mozambique project in order to:

*[...] take a few steps in my father's footsteps. [...] My father, also a former teacher, had had the opportunity to lead a teaching seminar in Mali in his youth, when he was around about my age. [...] I heard lots of great stories from him about cultural differences, for example when my father, who wanted to take an internal flight to the north of Mali to see the Dogon people, was told that his plane would not take off, because [...] it had crashed.*

I feel it is therefore very interesting to look in more detail at the nature of these culture shocks or at least these encounters, on the way in which they are experienced as well as what they later contribute to the student's reflections. The way in which they are reported is profoundly inspired by certain fundamental principles of the intercultural perspective, taking into account the importance of observation by shadowing. In effect:

*[...] cultural differences do not correspond to a reality, but result from the nature of relationships between individuals and groups [...] the relationship justifies the cultural characteristics attributed (Abdallah-Preteille, 2004, p. 58).*

The intercultural exchange discussed in this chapter takes place in Mozambique and Switzerland, and the specific function of the students in this exchange thus determines the kind of observations made. Other kinds of exchanges, through the setting in which they take place, and their study focus, may lead to other kinds of experiences, and different culture shocks. In addition, Martine Abdallah-Preteille (2004, p. 64) notes that “cultural traits are less the reflection of a reality than the mirror of a situation,” and cautions that “cultural differences are significant only in one context and one relationship” (2004, p. 63). Therefore, the examples given here cannot be taken as representative of the Swiss or Mozambican cultures, but solely as the product of an individual intercultural experience.



Cohen-Émerique (1999b, p. 304) describes culture shock as “*an important way of realizing the way one’s own social identity is renewed and analyzed.*” It is therefore an important element in the training of student teachers, not only for them to acquire the foundations of an intercultural approach to education, but also to develop an intercultural pedagogy in teaching. This realization must also be accompanied by personal work based on the principle of *decentering*. As a consequence, rather than a simple description of culture shock, I will focus my attention on the analysis and the decentering that it requires. Reflecting on a culture shock demands the individual who has experienced it to “*take distance from oneself [...] by being a subject who perceives himself as an object, the bearer of a culture and sub-culture, [...] to consciously reflect on certain presuppositions that we perceive to be facts*” (Cohen-Émerique, 1999a, p. 232). With the culture shocks that I have chosen to report, I will aim for a reflective analysis of our own cultural codes, the manner in which we have interiorized them, and the way they orient our interpretation of the world. While focusing on the foreign culture phenomena that interest us, it is thus as much about “*questioning [...] other cultures, others, as much as one’s own culture*” (Abdallah-Preteuille, 2004, p. 64).

Interculturality implies the linking of two diverse cultures, and as a consequence we ask the students to adopt a comparative approach in their experience of alterity, and in their observations. This approach is a reflexive source of richness since “*comparison [...] also enables an opening up of other interpretations, and other avenues, by favoring the renewal of questioning*” (Abdallah-Preteuille, 2004, p. 67). Thus, the Swiss students’ experiences of Mozambique relate to their perception of their teaching and/or the Swiss and Mozambican systems of education.

Marie-France Mailos neatly encapsulates the goal of the experience – in Mozambique – from an intercultural perspective:

The goal is to lead to a change in professional practice by triggering a change in the conceptual framework in which this practice is situated. It is not a case of going out to look for solutions, or of importing models [...] but really of causing a shock and triggering a questioning, perhaps a reassessment (Mailos, 2000, p. 183).

The intercultural experiences (or shocks, to retain this term) presented in this chapter are therefore the source of a possible change or improvement in teaching practices, but also of teaching stance. By developing an awareness of cultural differences, the students have an opportunity to rethink some of their ways of working and to change them, if necessary. Beyond the factual presentation of the experience of alterity in the international and intercultural exchange, it is important to strive for an improvement in teaching, or at the very least an improvement in the way such elements are considered in the context of their function in Switzerland.

### 3. The PEERS-Mozambique Project: A Unique Experience

In the beginning, it was about exotic lands and the allure of exploration; the journey, like a kind of religious duty to escape, absorb, often to bear witness. A project set in Mozambique was obviously the opportunity for a change of scene abroad, but above all to travel to Africa for the first time and to confront my impressions with a reality that promised to be at the very least unsettling. The justification was interculturality, the context that of a PEERS project [...] I had never been to Mozambique, or Africa, so you inevitably make comparisons, as insignificant as they may be. We exchange views, we tell one another stories. Trivial in sum, but it gives you ideas. [...] Dragging my sandals down long avenues to soak in the atmosphere and unearth a few curiosities. The smell of the earth, the Portuguese accents and the sound of klaxons, the old-fashioned pictures in the hair salons, the mango trees, the uniforms, the washing balanced on heads; I drank in every detail. Mere trifles, but the total is sufficiently disorientating for the traveler who knows nothing of these African tableaux. And I was also there for this kind of strangeness! (Epiney, 2014, p. 6–7).

Apparent here are the will and the desire to make new discoveries. This is a founding presupposition for the encounter and the learning experience. Fear, distrust, and contempt of the Other simply prevent the encounter. One project participant (January 2017) went further in such reflections, denying diversity at first, or rather emphasizing the similarities:

[...] *We told one another about our lives, we laughed, we talked about friendship, family, school, love. These discussions were simple and sincere, and I was surprised to find they were the kinds of conversations I could easily have with one of my friends in Switzerland.*

Although the two students inhabited such different realities, they already felt close even though they had known one another for only a few hours. The geographic setting, the physical space, and the sociocultural context were very different. The house, the area, the customs, and the movements of the young Mozambican woman differed totally from those of the Swiss female student in question; and yet, as surprising as it might seem, a connection was made in such a short time. How? Why? The desire and the will to discover, the personality of the people considered, participation in the project, research, and certainly the fact that they spoke the same language, French<sup>4</sup>, provided them not only with a means of communication, but also of comprehension; the fact that they were both studying at a university to become a teacher was also a bridge between the two strangers. For the exchange to succeed and for us to be able to speak of added value, however, much more than just these elements is required. It is therefore through “shadowing” that the students must analyze the different moments of their trip abroad, as well as during the return visit of their Mozambican counterparts to Switzerland, in both the school and home life contexts. Stéphane Martineau (2005) describes shadowing as a data collection tool where the researcher becomes the witness of individual behaviors and practices on the ground by staying in the same setting they take place. This type of observation thus asks the researcher to adapt to the observed setting, to exercise a certain ability to adapt and certainly to work on this flexibility of spirit. These are undeniably intercultural abilities. During class visits, students instead used the direct observation method, not participating but observing the lesson from the back of the class without intervening.

This method enables consideration of the different actors and their interactions, as well as an appreciation of space. The teaching method

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4 The exchange is conducted with the French Department of the Faculty of Language, Communication, and Arts Studies at the Pedagogical University of Maputo.

captures the students' attention from the outset: the teacher is the one with the knowledge, the expert, and they transmit this to the pupils who listen and learn. The Swiss students do not feel as if they are observing education via questioning or critique: the pupils do not seem to be invited to question the information given or involve their own reflection. They take their teacher's words as gospel. One student (2015) proposed an analysis of teaching in Mozambique (in regard to these observations and thus without wishing to generalize) according to the three models described by Meirieu (2006), and saw this stance as corresponding to the "cleric model" associated with so-called traditional teaching. In this model, the cleric gives the truth, he holds his knowledge and power on high and embodies legitimacy. The audience, in this case the pupils, consume the knowledge, without having to work toward it themselves. This directive method does not lead to cognitive guidance. "The major problem with lecturing is not that it lacks efficacy, but that it is too effective, and cultivates dependence when it should be emancipating" (Meirieu, 2006, p. 5). It is the model *par excellence* in university teaching, where the lecturer occupies a higher hierarchical position and shares his knowledge with the students who listen to him. In contrast, the student in question did not see teaching in Swiss schools in this way. Teaching in Switzerland, in her opinion, is closer to Meirieu's "teacher-librarian" or "teacher-companion" models. The first model is characterized by the fact that the teacher does not pass knowledge on, nor does he possess all the knowledge, but helps his pupils to find their way through the maze of knowledge by guiding and advising them. He explains how to access the information in order to give the pupils independence. In the "teacher-companion" model, the teacher shows the pupil what to do, guides him, and comments on the result until the apprentice achieves the level of the teacher and is able to take the knowledge in hand. Through both models, the pupil is pushed to assimilate knowledge and to become independent. The student analyzed the different teaching stances and questioned the appropriateness of each by highlighting their advantages and disadvantages: "the spoken word has a power of 'extraction' and clarification; the book tames the spirit and forms critical thought; the

accompanying act leads to perseverance and the exigency of quality” (Meirieu, 2006, p. 7).

The Swiss Romandy teaching syllabus, the PER (*Plan d'Etudes Romand*) (CIIP, 2010), recommends following the “teacher-librarian” model in order to develop reflective skills among pupils. One of the transversal skills outlined in the syllabus is the *reflexive approach* that allows for “*taking a step back from the facts and information, as well as one’s own actions; it contributes to the development of critical thinking*” (CIIP, 2010). The “cleric model” makes it difficult to build this skill; it seems easier with the two other models outlined above. The student was then able to question her teaching and make direct reference to the lessons that she had to prepare for her placement<sup>5</sup>, and thus challenge not only her own teaching stance, but also the didactic conceptualization to which she referred. Concrete examples are discussed and analyzed in regard to the teaching discipline of each participant in the PEERS project. The analysis of practice is carried out on the basis, for example, of the taxonomy drawn up by Anderson and Krathwohl (2001, p. 67–68) for tasks demanded of pupils: level 1 – remember; level 2 – understand; level 3 – apply; level 4 – analyze; level 5 – evaluate; level 6 – create. The few observations made in class do not allow for a clear determination of the development and mastery of these different levels in teaching in Mozambique nor, equally, in Switzerland for the Mozambican students. In the end, the result does not matter as long as the students are able to return to the theory they have learned in class and not only question their practices, but above all challenge these in the light of comparison.

One student ventured to make a link between observation in class and the attitude of these foreign colleagues: can we therefore deduce that the supposedly frontal teaching observed in Mozambique holds back the fellow PEERS adventurers from sometimes taking the trouble to make decisions or give their opinion? Is it a factor resulting from education, culture, or simply a personality trait? These questions will remain

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5 The HEP Vaud practices the model of direct alternation between university training at the HEP and professional placement in the schools of the canton, organized in a weekly format throughout the training.

unanswered. The key is the approach underpinning these questions: scientific comparison, decentering, and relativism.

In her June 2016 dissertation for the Master of Advanced Studies (MAS) II in Secondary Teaching, Camille Schaer (2016) also used Anderson and Krathwohl's taxonomy (2001, p. 67–68) to put into perspective and document certain exercises through a comparison of two foreign language teaching handbooks in Mozambique and Switzerland. By considering each handbook in the light of the other, she was able not only to highlight numerous cultural and didactic issues, but also to develop a discussion of school handbooks linked with her own teaching practice. The ultimate (but not only) goal of this approach is the acquisition of critical thinking that will enable the future professional to make judicious choices with regard to teaching methods.

Of course, these are only a few examples resulting from one international exchange, and questions raised by participation in the PEERS program, the goal of which is “the collaboration of students from the HEP Vaud and from partner countries on a chosen educational issue” (“Programme PEERS: collaborer au delà des frontières,” n.d.). This encounter generates enthusiasm for a dissertation subject or study in a specific field that brings together the didactic-pedagogical and cultural aspects; between the two lies the human experience; implicitly, the knowledge of another educational system.

#### 4. Conclusion

At a time when cultural diversity is highly present in the Swiss classroom, it is without doubt an advantage for a teacher to master intercultural skills and to welcome the encounter with alterity. International exchanges contribute favorably to developing world knowledge. Even a short visit, if properly framed, is enough to trigger a decentering. Noting that the foreign partner understands events from another perspective engenders the questioning of one's own perspective, in shock and confrontation, or in dialogue and

exchange. To provide an example, one student talked about a situation that occurred in Mozambique where they saw men violently fighting. People in the street watched them with amusement; the Mozambican students explained that this man probably deserved to be beaten because he had done something unacceptable. He had stolen from the other man and for that reason the crowd did not intervene. The two men, from the Mozambican point of view, were fighting to settle a score: it was thus legitimate. From the Swiss point of view, the situation was unacceptable: the Swiss students had been taught, both at home and at school, that conflict should not be resolved through violence, but through dialogue. Of course, we should not fall into generalizations with regard to either Mozambique or Switzerland. However, this discussion allowed the students to understand that in discovering the Other, it is in the end ourselves that we question, and that the encounter with diversity is a continual source of richness if we are ready to welcome it and challenge ourselves. The encounter leads to an exploration of the self that allows an individual to mature and become aware of aspects until then considered to be “taken for granted” or obvious. Paradoxically, it is *ordinary* or everyday facts that seem to enable *decentering* and enable true intercomprehension. From this, the comparative analysis of the educational systems is enriched by a contextual dimension.

In conclusion, I would like to emphasize the importance of a stay in another country as part of teacher training. Whatever the country and the objective, the visit to another country offers the possibility of encountering a new culture, a new way of seeing, thinking about, and doing things. But above all, it invites a reconsideration of one’s own culture, one’s own bearings, and one’s own practices. As highlighted in this chapter, travel abroad thus enables a student to acknowledge numerous aspects they had not been aware of previously, to step away from their routine and their prejudices, and thus become a better teacher in their home country.

I will conclude with the words of a student participating in the project, who described in an email to his thesis supervisor on June 21, 2014, in no uncertain terms, the added value of an international and intercultural exchange like the PEERS program, no matter how short in length: “[...] *This project has been without doubt the best moment of my 2 years at the HEP!*”





*Part 3*

*Results of Research-Oriented PEERS Projects*



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## Chapter 10: The Shared Experiences of International Special Educators

### **Abstract**

Although teaching is often tailored to local contexts, teachers can benefit from collaboration with colleagues in other countries through exposure to innovative ideas and best practices in settings outside their own context. This PEERS collaboration involved three students from the Master's program in special needs education (SNE) at the State of Vaud University of Teacher Education and three students from the Master's program in SNE at the National Institute of Education (NIE) in Singapore. The participants planned and conducted small-scale research studies while being supervised by one professor from each university. In this chapter, the goals and proceedings of international work in special education will be described as well as the outcomes of this specific PEERS project from student and faculty perspectives.

### 1. Global Education and International Experience

One of the existing challenges for higher education is to internationalize its programs and to make students more globally competent (Childress, 2009; Gacel-Avila, 2005; Rodriguez, 2011). Although teaching is often tailored to local contexts, international collaboration can be important for educators as they grow professionally through exposure to innovative ideas and best practices in other settings. Increased globalization requires

that education leaders establish programs promoting the understanding of global problems and country-specific interventions so that educators around the world can address transnational problems and share solutions (Engstrom & Jones, 2007). Fortunately, the PEERS program recognizes the need to study and to witness education “on the ground” in other contexts and in other countries.

Although much of the existing research on international experiences focuses on general educators, the benefits of teaching and learning abroad are important for all educators. A special educator works with and advocates for students who are often on the fringes of the educational system or left out altogether. Populations of learners who need advocates for social and educational inclusion contain, but are not limited to, students with disabilities, students without access to education due to conflict, and students excluded from educational access because of their gender, religion, ethnicity, or socio-economic status. The individuals who work with marginalized populations can profit greatly from international field experiences and collaboration because the experiences provide learning opportunities that may not be available in their local context.

The participants involved in this PEERS collaboration were all graduate students pursuing their Master’s degree in special education. Rhee and Honeycutt Sigler (2010) studied the keys to developing leadership ability in graduate students and emphasized the importance of field experiences as a tool in leadership development. Graduate students learn through comparative educational experiences and are able to develop a more critical eye as they begin to influence both policy and practice (Burke, 2001). Another advantage of collaborative experiences for graduate students in special education is the opportunity to work with colleagues. Friend (2000) reports:

Virtually every treatise on inclusive practices, whether conceptual, anecdotal, qualitative, or quantitative, concludes that inclusion’s success in large part relies on collaboration among staff members and with parents and others, and that failures can typically be traced to shortcomings in the collaborative dimension of the services to students (p. 130).

In other words, students, parents, and the community cannot train teachers as though their profession involved only knowledge, while considering the presence of others as a negligible factor (Loreman, 2010). Involving all stakeholders in the education of students is effective and important in creating an inclusive environment. Positive outcomes for students participating in international experiences include a more focused approach to academic work as well as intellectual and personal growth (Bates, 1997; Carlson & Widaman, 1988; Hadis, 2005; Willard-Holt, 2001).

In addition to the collaborative benefits, the value of international experiences has been explored by researchers across disciplines (e.g., Alfaro & Quezada, 2010; Engstrom & Jones, 2007; Pence & Macgillivray, 2008), and has been found to lead to both personal growth and a professional perspective (Cannon & Arnold, 1998; Knouse & Fontenot, 2008; Narayanan, Olk, & Fukami, 2010; Taylor, 1985, 1988). Active engagement with others from different cultures leads to an expanded worldview and, ultimately, makes one a more flexible and compassionate teacher (Willard-Holt, 2001). As special educators, compassion is central to our profession, and international experiences that are comprehensively planned, carefully delivered, and thoroughly supervised can provide opportunities for this powerful personal and professional growth. International collaborations and experiences help special educators to develop a deeper understanding of inclusive education (Faulconer, 2003; Singal, 2005), greater compassion and flexibility within their practice (Van Hoof & Verbeeten, 2005), and a more self-reflective practice (Darling-Hammond, LaPointe, Meyerson, Orr, & Cohen, 2007). Especially important to special educators may be the understanding that comes from exploring the idea of education as a form of social justice – an idea best understood when experienced. Participants in this PEERS project were exposed to educational systems that were different from their own. In order to understand the differences in special education for the participants better, it was important for them first to understand a brief history of educational policies and practices in both Switzerland and Singapore.

## 2. Special Needs Education in Switzerland

Switzerland is a federal state composed of 26 provinces. The provinces are responsible for the organization of SNE, as well as general education, which falls under their sole jurisdiction. This leads to a marked heterogeneity in the policies and practices of the provinces, and each one has its own history in the development of SNE. Nevertheless, in Switzerland, SNE has grown at the margin of the general education system, as is the case in most European countries and North America (Armstrong, 2002; Chauvière & Plaisance, 2003). The first special schools in Switzerland were created during the 19<sup>th</sup> century (European Agency for SNE (EADSNE), 2014). During the 1960s, Federal Invalidity Insurance played a central role in SNE (Swiss Conference of Cantonal Ministers of Education, 2007). Indeed, it financed the education of pupils with disabilities in special schools. However, these measures were provided only to children with intellectual, physical, or sensorial disability, language impairment, and severe behavioral disorder. Children with milder disabilities (learning disabilities and behavioral problems) were schooled in mainstream classrooms, mostly in special classes.

In 2008, a complete reorganization of special education took place. The funding and organizing of SNE for children with disabilities were transferred entirely from Federal Invalidity Insurance to the provinces (Swiss Conference of Cantonal Ministers of Education, 2007). Thus SNE became an integral part of the Swiss education system. Several cantons have entered into an agreement that binds them to promote more inclusive practices, in accordance with the Swiss Federal Act on Equal Rights for People with Disabilities (Swiss Conference of Cantonal Ministers of Education, 2007). This represents a challenge for most of the cantons as Switzerland is one of the most diverse countries in Western Europe (European Agency for Development in SNE (EADSNE), 2010). Currently, some provinces have implemented inclusive education for children with disabilities but others still school most of these students in separate settings. As of 2008, the proportion of pupils schooled in separate settings ranged from 2 % in the province of Tessin to 9 % in the province of Bâle Campagne (Sermier Dessementet, 2012).

Depending on the province, how SNE is delivered may also be different depending on the students' age. During their very early years, children with disabilities benefit from early childhood intervention. Interventions are mostly family based, with early intervention specialists coming to the child's home (European Agency for Development in SNE [EADSNE], 2014). Beginning in kindergarten, special education is provided either in special schools, special classes, or in general education classrooms, depending on the severity of the pupils' disabilities, and on the degree of inclusion of each province. Generally in Switzerland, there are special schools for pupils with intellectual disability, physical disabilities, severe behavioral disorders, autism spectrum disorder, hearing, and speech or visual impairments. There are also special classes in mainstream schools for pupils with learning disabilities and behavioral problems. These classes have a reduced number of students who often have an adapted or reduced curriculum (European Agency for Development in SNE [EADSNE], 2014). Regarding SNE for pupils included in general education classrooms, teaching and learning consist of a set number of support hours from a special education teacher and therapists during the week, depending on the pupils' needs. When ordinary individual measures available locally from the school's resources are insufficient to meet the children's needs, enhanced individual measures are provided. These measures are characterized by a longer duration, stronger intensity, and more specialized professionals, and are supposed to have a significant impact on pupils' lives (Swiss Conference of Cantonal Ministers of Education, 2007).

### 3. Special Needs Education in Singapore

As in Switzerland, the Singapore educational system has gone through many changes in the last 50 years as the country has evolved. Initially, education was essentially the provision of basic literacy for the masses. By the early 1980s, Singapore had grown significantly and students of

different abilities and aptitudes were placed in different school settings based on their perceived aptitudes. Schools were separated into two main categories and those categories still exist today. Mainstream schools, focusing on education for typically developing students, fall under the direct purview of the Ministry of Education (MOE). Special schools, for students with varying disabilities, are primarily managed by voluntary welfare organizations (VWO) supported by the National Council of Social Services (NCSS) and MOE.

In 2004, Prime Minister Lee Hsien Loong began to emphasize the need for individuals with disabilities to become a greater part of society (Embassy of the Republic of Singapore: Tokyo, 2004). Several measures were introduced to provide better support for students with SEN studying in mainstream classrooms. These measures included further support for students with special needs across all educational settings, including mainstream schools (Ministry of Education, 2004). Students with mild special needs (including dyslexia, autism spectrum disorders, and attention deficit hyperactivity disorder) could be placed in special schools, and 10 % of existing mainstream teachers are now trained in special needs (TSN) via MOE professional development (MOE, 2017). The shift in focus to inclusive policies also included the creation of allied educators (learning and behavioral support) (AED/LBS) to support the students with mild special needs who had begun studying in mainstream schools. These policies led to an increased awareness about “inclusive education” in Singapore.

These measures may have led to awareness but they did not necessarily lead to the acceptance of individuals with disabilities in the classroom (Walker, 2016). Singaporean schools are still working to find a balance between supporting students with special needs in mainstream schools and placing students with disabilities in special schools. The AED/LBS educators and teachers at special schools are currently trained in different programs at NIE and many mainstream teachers still struggle to accept students with special needs in their classes due to a lack of understanding about how to differentiate instruction and manage behavior (Nonis, 2006). Many mainstream schools have one AED/LBS for hundreds of students, and there are cases where schools do not have



an AED/LBS at all. In these cases, students with special needs receive no extra support from a professional trained in special needs. Unfortunately, in Singapore, special educators can be overworked trying to reach as many students as possible and many students with special needs still end up not receiving services.

#### 4. Description of the SNE PEERS Project

For this particular PEERS project, three students on the Master's program in SNE at the State of Vaud University of Teacher Education (HEP Vaud) and three students of the program in SNE of the National Institute of Education (NIE) in Singapore were selected to participate. The participants involved in this project worked as special education teachers at least 3 days per week in addition to their roles as students. For this collaborative project, participants planned and collaboratively conducted a small-scale research project on a common topic under the supervision of one professor of each university. For the Swiss participants this project was part of the research class of their Master program. For the Singaporean participants this research provided the research foundation for their Master's thesis.

In November 2012, three students of the NIE volunteered to participate in the PEERS project. They were consulted on the topic that interested them for their thesis. Three general topics were identified as their areas of interest: number sense among children with intellectual disability, autism spectrum disorders, and serving students with multiple and severe disabilities. Once these topics were identified, three Swiss students interested in collaborating with a Singaporean partner were identified and recruited.

In December 2012 and January 2013 the participants were paired according to shared research interests, and began corresponding with each other. The participants began communicating via social media and email to become familiar with their areas of personal and professional interest.

The participants were instructed to form a common research question and work on the corresponding literature review. Communication was easy and they began to get to know each other quickly, but choosing a specific topic and research question seemed more difficult. Based on the faculty supervisors' experience teaching research methodologies, this phase takes time and requires scholarly reading. Most students experience several changes of mind during the process. Doing it collaboratively at a distance and in a second language proved to make the process even more complicated. After 2 months of discussion, two of the groups had not yet stabilized their specific topic and could not begin a review of the literature.

In February 2013, the participants from HEP Vaud and their supervisor came to Singapore for a 1-week visit. The week consisted of visits to the schools of their partners, and two work sessions in order to plan their small-scale research. It was required that they specify the research question, research design, and method of data collection. At the end of the working sessions the specific topics of the small case studies were established for the three groups and first drafts of research questions were formulated. The first pair of participants decided to conduct a small-scale research project on number sense among children with intellectual disability (ID) or language impairments. The second group planned to investigate the use of complementary and alternative therapies by parents of children with autism spectrum disorders. The third pair decided to explore the effectiveness of dolphin therapy for children with multiple and severe handicaps. During this week, the participants did not have enough time to plan their research design and method of data collection. However, working sessions during the visit seemed to enable a more effective collaboration online during the following weeks. Participants exchanged literature via email and planned their research design and data collection method. The participants were able to specify the details of the study through communication that took place in March and April of 2013.

In May 2013, the participants collected data for their study. In the first project, standardized mathematical tests were conducted with children with ID by the Singaporean participant and with children with

language impairments by the Swiss participant. In the second project, a survey on the use of complementary and alternative therapies was administered to parents of children with autism spectrum disorders schooled in special schools. In the third project, the Singaporean participant collected data on the sensorial profile of children with multiple and severe handicaps, and videotaped a dolphin therapy session with them while his Swiss counterpart helped to review literature and provide feedback.

In June 2013, the participants from the NIE and their supervisor visited the participants of the HEP-Vaud for 1 week. The visit consisted of visits to special schools and two work sessions. By the time this visit took place, participants had completed data collection. They had afternoon working sessions so they could work on the analysis of the collected data and on the presentation of their results.

During August and September 2013 the participants continued to analyze their data, draft their study results, and collaborate on reflections about the research process. Participants were instructed to submit a completed 15-page draft of their final manuscript for review. During October of 2013, the faculty supervisors involved in the project reviewed the research papers and provided feedback. In November 2013, participants submitted their final version of a 15-page research paper as well as a 2–3-page reflective paper.

## 5. Full Reflections

The reflections of the participants provided insight into their experiences in the PEERS project. Both the Swiss and the Singaporean participants found the collaboration extremely valuable and useful for their personal and professional growth. Especially important from the participants' perspective was the growth they experienced in three distinct ways: understanding scientific research, personal reflections on cultural norms, and professional understanding during school visits.

### 5.1 Scientific Research

The quality of the research reports written by the participants involved in this PEERS collaboration indicates that they attained the goals set for their program. The faculty mentors concluded that participating in this project was an appropriate alternative to a typical graduate class on research. Involvement in the PEERS project provided an effective initiation into the research process for the Swiss participants while allowing the Singaporean participants to put their research skills into practice. Indeed, they worked together to complete a systematic search of literature, to write a synthetic but comprehensive review of the literature, to formulate precise research questions, to select an appropriate research design and method of data collection, and to analyze their results. It is important to note that the faculty supervisors supported the participants in each of these steps, as if the participants were in the actual research class. The professor systematically gave them formative feedback on the output of each step. Participants indicated that they found the process valuable.

*“Participation was a scientifically rich experience” – Isabelle, Manon, and Katya, Switzerland.*

*“The research has given me the chance to look deeper into the area of numeracy and children with special needs from a different cultural context” – Janice, Singapore.*

Although there were differences in the type of interventions and equipment available in Singapore and Switzerland, the exposure to different treatments opened the eyes of the participants to interventions of which they were not aware prior to the collaboration. In the project on the effects of dolphin therapy it was impossible for the Swiss student to collect data as dolphin therapy was not being used either in her professional context, or anywhere else in Switzerland. Despite this, she was taken in by the novelty of the topic and her Singaporean counterpart found her questioning important for his own clarification.

*“I was very interested in the topic, because I would never have had the opportunity to work on it without this partnership with the NIE” – Manon, Switzerland*

*“We approached the topic from each other’s perspectives. By doing this, there were certain points that I never thought of and that gave me better understanding and clarity about the research topic” – Izad, Singapore*

## 5.2 Culture

While cultural myopia, in itself, is rarely intentional, in order for all educators to avoid seeing things through an ethnocentric lens it is important to make a deliberate effort to engage in international experiences. The participants from both Singapore and Switzerland recognized the value in the international collaboration as it helped to shine a light on their own cultural norms as well as those of their partners.

*“We liked to discover the richness of the different cultures in Singapore [...] In this project we collaborated with persons from each of the three majority cultural groups [...] confronted with the different cultures, we learned to respect different social codes, for example not looking at some men in the eye when talking, or not refusing a proposition too directly” – Isabelle, Manon, and Katya, Switzerland.*

These lessons are particularly important because educational inequities towards children from foreign nationalities are an issue in the Swiss educational system (Swiss Center for the Coordination of Educational Research, 2010). Unfortunately, students from foreign nationalities are overrepresented in special education classes (Lischer, 2007), as is the case in several countries (Zhang & Katsiyannis, 2002). Not seeing cultural differences, or assuming that education is culturally neutral, is problematic when teaching students with culturally diverse backgrounds because it can lead special education teachers to see deficits or inappropriate behaviors rather than differences (Gay, 2002). Being conscious that European-American middle-class cultural codes or values are a variant and not a universal norm, is one of the important aspects of culturally responsive teaching (Gay, 2002). However, the value of the collaboration did not just affect the Swiss participants. The Singaporean participants were also stretched by the cultural differences.

*“The collaboration widened my perspectives on the research topic and special education in general by interacting and collaborating with someone from a different culture and educational system. This project gave me the opportunity to learn about things that are beyond academic publications and it has definitely been a rewarding experience” – Janice, Singapore*

### 5.3 Schools

Although the visits were short, participants still found that touring schools in their colleagues’ country had an impact. During the school visits in Singapore, the participants could see for themselves that the trend towards inclusion is not restricted to Switzerland but is an international trend that is also important in Singapore. They could witness interesting practices at the school and professional level.

*“This collaboration allowed us to open our eyes on what is done in other countries in the world in education and pedagogy for children with special educational needs. Sometimes we admired the equipment and means used in the special schools we visited and it inspired us for our professional practice ” – Isabelle, Manon, and Katya, Switzerland*

*“I was impressed by the projects developed to include children and adults with special needs in schools and in the community” – Isabelle, Switzerland*

*“I was surprised to see the importance given to including pupils with special needs in the school I visited” – Katya, Switzerland*

The Singaporean students also found it important that they actually saw at first hand the similarities and differences instead of only reading about them in a journal article or hearing about them in a class lecture. As Singapore is a small island, the opportunities to visit schools in different countries is limited as is collaboration with international colleagues.

*“The insights that I had were truly enlightening and made me feel that there was so much out there in the world, with new things to learn for my development as an individual and as an educator [...] my partner and I were eager to share about the school we are teaching in and the students that we teach. The beautiful part about our conversations was that we were always very amazed by what each other has been doing in school and that increased our curiosity and eagerness to visit*

*one another's work environment to really experience what had been shared. It has given me the chance to not only make comparisons but also learn from the different education/welfare system of Singapore and Switzerland better in the area of special needs. Often, we read journal articles of how the education system of a certain country is without truly understanding it. Thus, the visit to the three schools was an extremely enriching experience as it was experiential and it gave me an idea of what the Swiss education system is like" – Izad, Singapore.*

#### 5.4 Challenges

There were, of course, various challenges in conducting collaborative small-scale research studies in two different countries. The first relates to the official directive of the State of Vaud that forbids participants from the University of Teacher Education from collecting data on pupils out of their current professional context. This was a major hindrance in the collaborative planning and conduct of the study. For the Singaporean participants, receiving authorization to collect data outside their professional context was also difficult. The participants all collected data at the schools where they worked. In the project on number sense it prevented the Swiss and Singaporean participants from using the same instruments and comparing their results

*"My professional context did not allow me to align myself on my partner's method. My pupils were younger and had a different diagnosis" – Isabelle, Switzerland*

Although the Swiss participants progressed greatly throughout the project and viewed the reliance on English as a benefit, their initial level of proficiency in English was a hindrance to efficient communication on research in the beginning. Progressively, they made significant progress acquiring the scientific lexicon in our field. Being able to read and understand English articles is important in research because the best scientific journals in the field of special education are published in English. Reading and writing in English will be a useful skill for the participants when they complete the literature review for their thesis. Moreover, mastering English is also strength for Swiss special education teachers. In the French-speaking provinces of Switzerland, English has

recently become part of the curriculum from primary level. Although language was a barrier in certain cases, the Swiss participants also found participation in the PEERS project a benefit to their own improvement in the English language compared to taking a traditional research class.

*“Thanks to the participation in this project, we were able to improve our level in English. Indeed, we trained it by communicating with our partners, but also by reading scientific articles in English” – Isabelle, Manon, and Katya, Switzerland.*

However, the Swiss students’ level of writing did not progress enough for them to write their research reports collaboratively with their partners in English, as was initially planned. The Singaporean participants wrote their reports in English, and the Swiss participants in French. This prevented a final common presentation and discussion of the results by all the participants in the PEERS project, which is regrettable.

## 6. Conclusions

Gacel-Avila (2005) states:

One of the basic and fundamental functions of a university should be the fostering of global consciousness among students, to make them understand the relation of interdependence between people and societies, to develop in students an understanding of their own and other cultures and respect for pluralism (p. 123).

The State of Vaud University of Teacher Education is *“aware of the impact of national and international projects on the quality of training, as well as on professional practice, the University of Teacher Education has a dynamic politics of collaboration and exchange [...] It therefore develops relations with several partners in education in Switzerland and in the world”* (Haute Ecole Pédagogique, 2014). The NIE in Singapore *“endeavors to pursue tie-ups with reputable international educational and commercial organizations with the objective of cultivating mutually beneficial partnerships. Through memoranda of understanding and*



*agreements, the Institute's network of collaborations spans the globe. The linkages with our valued partners create a great many opportunities for dynamic and fruitful exchanges of knowledge and collaborative teaching and research activities, which ultimately contributes to raising the quality of teacher education"* (National Institute of Education, 2017).

As both universities clearly support and promote international collaborations, this project focusing on special educators was a priority. Both universities realize that experiencing, reflecting and learning should not be confined within one building or one campus (Phillion, Malewski, Sharma, & Wang, 2009). It is important that special educators at every level take advantage of opportunities to learn and grow personally and professionally in international environments. Participants should not only understand policy and practice in their own settings but also appreciate how other areas of education are affected by global policy in an increasingly interdependent world. Although challenges do exist, international collaboration and research projects can provide a perspective that is invaluable as we advocate and work on behalf of all learners. Although the research itself was important, participants and supervisors agreed that the biggest benefit of the program was the collaboration between cultures.

The ability to see schools and approaches differently was extremely valuable if not exactly quantifiable. There are lessons to be learned through these collaborations, which stimulate curiosity and allow for innovative practice within local contexts. Although the research projects were important for comparative purposes, the sharing of ideas and possibilities for SNE was even more beneficial.

The PEERS project is an example of one partnership that directly benefits the participants and students with special needs in Switzerland and Singapore. Programs like the PEERS project insure that our students studying special education have the opportunity to continue to grow both personally and professionally. When participants bring this knowledge back to their colleagues and into their classrooms, the benefits of a program like this become exponential for the participants, the students, and the communities they serve.



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## Chapter 11: Football, Dance, Dolls and Toy Cars: Comparative Analysis Between Switzerland and Spain in Relation to Gender Stereotypes Among Primary School Pupils

### **Abstract**

Carried out in the context of a PEERS project between Lausanne and Barcelona, the aim of this study was to compare the place of gender stereotypes among young pupils educated in Swiss and Spanish schools. These stereotypes were measured in relation to sporting activities (football and dance) and in relation to toys (dolls and toy cars). Questionnaires were distributed to the pupils of both countries ( $n = 120$ ) and focus groups were set up ( $n = 9$ ). The results show that a large majority of pupils adhere to gender stereotypes and that they separate activities into two categories: male (football and toy cars) and female (dance and dolls). Some differences emerge between the two countries, the Spanish pupils adhering to gender stereotypes in a more pronounced way than the Swiss. At school, action against stereotypes should be developed to allow each and every pupil to engage freely and confidently in all activities.

## 1. Introduction

At an international level, the issue of gender in school has become a “crucial topic” (Eurydice Report, 2010, p. 3), particularly in light of persistent inequalities between girls and boys in schools. This chapter looks at the role of gender stereotypes in young pupils enrolled at primary level. Stereotypes play a role in gender socialization and in the construction of the gender identity of the male and female citizen of tomorrow. The study conducted here looks at gender stereotypes in sport and physical activities and with regard to toys, two main vectors of gender socialization (Dafflon-Novelle, 2006; Rouyer, Mieyaa & Le Blanc, 2014). Developed within the framework of a PEERS project between Lausanne (University of Teacher Education of State of Vaud) and Barcelona (Universitat Ramon Llull) (Bréau, 2015, 2016), an international comparison was performed between Switzerland and Spain, two countries seeking to promote gender equality in school and more broadly in society (Baena-Extremera & Ruiz-Montero, 2009; Chaponnière, 2011).

## 2. Gender Socialization, a Complex Process

Throughout life, each individual is required to internalize social norms and codes relating to the masculine and feminine. Gradually, everyone learns to navigate in a “gendered” world, a binary world where a difference is made between masculinity and femininity, men and women, boys and girls (Butler, 2004). Gender socialization refers to learning “gender roles,” different and stereotypical roles (Bereni & al., 2008). Some behavior patterns, gestures or ways of expressing emotions will thus be privileged or rejected depending on the child’s gender. The dissemination of gender norms and the construction of “stereotypical roles” takes place mainly through various socializing agents such as family, school,

peer groups, or the media (Hyde & Jaffee, 2000). The family is the first place in which children experience a gender difference (Corsaro, 2005; Rouyer & Zaouche-Gaudron, 2006). Very quickly, parents will create a specific environment for each gender, whether in terms of clothes, decoration or toys for their children. Girls and boys are raised in a differentiated manner, consistent with gender stereotypes, especially in the first years of life (McHale, Crouter & Whiteman, 2003). Within the school, different treatment appears early. Girls learn to be better organized, more attentive in class, and more respectful of school rules than boys (Van de Gaer & al., 2006). Adherence to gender stereotypes thus tends to become stronger in school (Bréau & Lentillon-Kaestner, 2016; De Boissieu, 2009; Zaidman, 1996).

### 3. The Construction of the Gender Identity of the Child: Some Developmental Landmarks

Gender identity is understood as the feeling of belonging to one gender and the sense of our masculinity and our femininity (Chiland, 2003). The construction of gender identity takes place in a longitudinal perspective (Leaper & Friedman, 2006) and refers to the different stages through which a child will pass to build their identity as a boy or as a girl within their culture (Le Maner-Idrissi, 1997). Gender, along with age, is one of the first two social categories used by children to understand the world around them (Bem, 1981). Thus, even when only a few months old, babies are able to distinguish between individuals of different genders. Children then go on to access knowledge of gendered roles and objects (Ruble & Martin, 1998). Gradually every child, boy, and girl organizes their environment on the basis of the “masculine/feminine” dichotomy and develops a kind of gender diagram (Le Maner-Idrissi & Renault, 2006). As far as the evolution of knowledge on gender and on gender roles is concerned, some cognitive theories stress the presence of different stages during childhood (Kohlberg, 1966; Martin & Halverson,

1981). From the age of five, children enter the stage of “gender stability.” Children perceive compliance with gendered roles as “morally right” (Mieyaa & Rouyer, 2010, p. 4) and will tend to show a certain rigidity in their behavior and their representations. During this stage, children feel that violations of gender roles are unacceptable. The tendency to play with gender-typed toys and gendered segregation in games between peers continues to increase during this period (Maccoby, 1990). Around the age of seven, the child will enter the so-called “gender constancy” stage. They understand that the gender of an individual is a biological given, and that membership of a gender group remains stable beyond time and situations. Some children may well begin to question the validity of gender roles, and gradually withdraw from certain gender standards and a “morally right” compliance (Golombok & Fivush, 1994). In this regard, it is important not to reduce the construction of gender identity to a mere social construction. Children do not simply internalize gender stereotypes or other gender roles at a cognitive level with varying degrees of passivity; they use and modify them to suit their personal stories. It is thus a construction in which the subject is actively involved (Owen Blakemore, Berenbaum & Liben, 2009; Rouyer & Zaouche-Gaudron, 2006). The construction of gender identity is thus divided between a process of acculturation and a process of personalization (Malrieu, 2003). It is therefore necessary to analyze the construction of gender identity within an integrative perspective that takes into account sociological, cognitive, but also affective elements (Rouyer, 2007).

#### 4. Gender Stereotypes

In general, stereotypes refer to a set of rigid or even caricatural beliefs about certain characteristics of a social group. When it comes to men and women, from birth we learn and access different gender stereotypes (e.g., a boy does not cry, pink is for girls), defined as a range “*of signals that combine character traits, skills, attitudes to one gender over another*

*and that shape our view of the place and role of men and women in our society*” (Costes, Houadec & Lizan, 2008, p. 59). Gender stereotypes contribute to the construction of a binary, sexed and differentiated world. At school, some school subjects are considered more suited to boys or to girls. The teachers’ efforts to stimulate their pupils and their expectations of success rest unconsciously on these stereotypes (Duru-Bellat, 2011). Gender stereotypes become a brake for the academic success of the pupils, their sense of competence, or their taste for certain activities or school subjects (Bouchard & Saint-Amant, 1996). Finally, they represent real obstacles to individual choices, for both men and women, and contribute to the persistence of gender inequalities (Bréau & Lentillon-Kaestner, 2016).

#### *4.1 Gender Stereotypes in Sport and Physical Activity*

Sport is often described as the “stronghold of masculinity” (Elias & Dunning, 1994) and many gender stereotypes are still prevalent (Hively & El Alayli, 2014; Knight & Giuliano, 2001). Because of its history and its representations, sport is seen as a thoroughly masculine activity (Hargreaves, 1994). It contributes to the formation and reproduction of a dualist definition of the feminine and masculine physique, where girls are considered to be weaker than boys (Lentillon, 2009). Depending on their intrinsic characteristics, the different physical activities and sports are the subject of a sexual marking (Fontayne, Sarrazin & Famose, 2001). Male sports (football, boxing, rugby, martial arts) tend to involve features such as physical contact, opposition, and strength, whereas women’s sports (dance, gymnastics, aerobics) entail more expression, grace, and aesthetics (Hardin & Greer, 2009). Indeed, there is no doubt about the feminine credentials of dance and gymnastics in the minds of young pupils (Dowling Naess, 2001; Gorely, Holroyd & Kirk, 2003). Other activities such as badminton or swimming are considered neutral, as suitable for both sexes. At school, physical education and sports classes (PE) seem to perpetuate this stereotyping and division between the masculine and the feminine (Fagrell, Larsson & Redelius, 2012). While teachers tend

to turn more to boys to perform demonstrations, studies also point to the continued use of stereotyped expressions that can ridicule the pupils, especially girls (Castillo, 2009; Rónholt, 2002). In Spain, activities that combine strength, speed, and endurance are primarily offered to boys while girls take part in coordination activities (Valdivia & al., 2010). As regards the role of the family, parents tend to encourage boys to engage in physical activities and see them as being significantly more proficient at sports than girls (Bois & Sarrazin, 2006; Fredericks & Eccles, 2005).

#### *4.2 Gender Stereotypes in Relation to Toys*

During the first years of life, toys are one of the main vectors of gender socialization, in particular through the transmission of stereotypes (Fisher, 2006; Rouyer & Robert, 2010). They thus contribute to the construction of a child's gender identity and towards the separation between masculinity and femininity. Early on, differences emerge in the behavior of girls and boys, especially in the choice of toys (Cherney, Harper & Winter, 2006; Le Maner-Idrissi & Renault, 2006). Cars, boats, and flying objects become specific to boys as the girls continue to play with dolls and dolls' tea sets (Zegai, 2010). A real separation of the genders in the toy universe is thus present and tends to become stronger and stronger. Girls, however, seem to have more freedom than boys, and can more easily play games with the opposite sex. For boys, liking feminine activities seems to cast doubt on their sexual preferences. Some find themselves quickly "snatched away" from the dolls' house (Collet, 2011).

#### *4.3 Gender Stereotypes in Young Swiss and Spanish Pupils: What Do They Have to Say?*

Today, few studies have considered the views of young pupils when it comes to gender stereotypes (Rouyer & Robert, 2010). Yet hearing what the child has to say is an innovative and relevant investigative



approach from both a theoretical and methodological viewpoint (Mieyaa, Rouyer & Le Blanc, 2010). Focus groups are a particularly effective tool to explore the views of young children (Morgan & al., 2002). The study proposed here has focused solely on the views of young boys and girls about different gender stereotypes in relation to sports and toys. The implementation of this research project was based on a PEERS project, bringing together for one academic year students and teacher-researchers from both countries (Bréau, 2015, 2016). An international comparison was conducted between Switzerland and Spain, two countries eager to strengthen gender equality in schools. In Switzerland, some inequalities and gender stereotypes remain present within the education system (e.g., Bréau & Lentillon-Kaestner, 2017; Chaponnière, 2011; Fassa, 2013). The career choices of young people of both sexes thus remain very stereotypical (Gianettoni, 2011). In Spain, some sexist barriers remain in place within society with the dissemination of a patriarchal model that conveys men as the head of the household (Valdivia & al., 2010). The school participates in the reproduction of a separate and stereotyped model (Castillo Andrés & al., 2012) and many actions are being set up to promote better gender equality (Colás, 2007).

## 5. Method

### *5.1 Sample*

In our study, the pupils surveyed through the questionnaires and focus groups were all volunteer pupils, enrolled in Swiss or Spanish primary schools. As regards the questionnaires, 120 pupils participated in the study (55 boys and 65 girls). A total of 74 questionnaires were collected in Switzerland and 46 in Spain. As for the focus groups, 36 pupils participated in the interviews. Twenty-four (12 boys and 12 girls) were enrolled in Swiss schools and 12 (6 boys and 6 girls) in Spanish schools

(Table 1). All pupils interviewed were between 4 and 7 years of age ( $M = 5.9$ ,  $ET = 0.96$ ).

Table 1. Distribution of pupils surveyed by country and the tool used.

	<i>Questionnaires</i>	<i>Focus Groups</i>	<i>Total</i>
<b>Switzerland (%)</b>	74 (61.66)	24 (66.66)	98 (62.82)
<b>Spain (%)</b>	46 (38.33)	12 (33.33)	58 (37.17)
<b>Total (%)</b>	120 (100)	36 (100)	156 (100)

## 5.2 Data collection tools

A mixed method was used for this study with the collection of questionnaires and the setting up of focus groups with young pupils. The development of data collection tools was carried out during the first PEERS exchange week in Barcelona.

**Questionnaires.** The place of gender stereotypes among primary school pupils was first measured by asking them to answer a questionnaire. This was comprised primarily of closed questions. Twenty-seven questions were put to the pupils, questions divided into two different areas: physical and sporting activities and toys. To facilitate the understanding of the participants, each question was accompanied by an image. For all the questions, the pupils interviewed were asked whether the activity presented was more for girls (1), for both (2) or for boys (3).

**Focus groups.** The aim of the focus groups was to access more accurately the point of view of the pupils about different activities. The focus groups were conducted using a stimulus (pictures showing different toys or sporting activities) that aimed to trigger an exchange of ideas or opinions among participants. First of all, the pupils were asked to tell the researcher whether they thought that the activity presented in the form of images was more for boys, for girls, or for both genders. Then, the researcher presented new images to the pupils, images contrasting with the gender stereotypes (e.g., a girl playing football, boys playing with

dolls) and invited them to share their opinion (“Is it normal?” “Have you ever seen boys playing with dolls?”).

### 5.3 Procedure

The objectives of this study and the various data collection tools were first presented to various schools and school principals to find volunteer teachers to participate in this study. The data collection took place between November 2014 and March 2015, just after the tools were developed in Barcelona and before the second PEERS meeting in Lausanne.

**Questionnaires.** Pre-tests were conducted with ten or so pupils to ensure the correct understanding of all the questions. The questionnaire was conducted in seven different schools (four in Switzerland and three in Spain). The pupils were invited to answer questions at the beginning of the physical education and sports lesson in the joint presence of the researcher and the class teacher. It took on average between 15 and 20 minutes to answer the questionnaire. The presence of the researcher made it possible to answer any questions asked by the pupils. The questionnaires were then collected straight after being completed.

**Focus groups.** A total of nine focus groups were conducted with pupils from the canton of Vaud in Switzerland ( $n = 6$ ), and from Barcelona in Spain ( $n = 3$ ). All these focus groups were filmed. They took place during school hours in a neutral place (a classroom), chosen by the researchers, and in a relaxed atmosphere. Of the nine focus groups, seven were conducted in a mixed context, one with just boys, and another with just girls. The pupils were reassured at the beginning of the session that anonymity and all opinions would be respected. A sufficiently large number of pupils was convened (between three and six pupils) to promote interactions (Kitzinger, Markova & Kalampalikis, 2004). Each focus group lasted between 20 and 30 minutes. Two researchers were systematically present during the interview (a facilitator and an observer). The role of the facilitator was to facilitate the focus group and encourage participants to give their views, namely by creating a climate of confidence. The observer was present to ensure proper operation of

the recording equipment and to pick up on “key words” or other “non-verbal behavior” observed in the focus group and likely to be used in the thematic analysis. However, the observer had to be neutral, with no participation in the debate.

#### 5.4 Data analysis

Two independent variables were taken into account in the analysis of the quantitative and qualitative data: the gender of the pupils (male or female) and the country in which they are educated (Switzerland and Spain). The analysis of the data was carried out in particular at the second PEERS meeting in Lausanne in March 2015.

**Questionnaires.** One-factor ANOVAs (Analyses of Variance) were applied to data from the questionnaires using SPSS software version 22. The significance threshold retained was  $p < 0.05$ .

**Focus groups.** The recordings were transcribed in full. The analysis was primarily based on the verbatim accounts but also on the notes of the observer. The interviews were the subject of several readings and the researcher conducted a thematic content analysis (Mucchielli, 1998) to highlight different themes related to the role of gender stereotypes in sport and physical activities and toys. In the course of the readings, the data could thus be classified into categories and subcategories. Two main categories emerged from the content analysis: the views of pupils about physical activity and sports, toys, and their relationship towards masculinity and/or femininity, and the various arguments used by the pupils to justify their views (experience, family, school).

## 6. Results

### 6.1 Physical and sporting activities

#### ***Football: A primarily male activity, both in Spain and in Switzerland.***

The answers given to the questionnaires show that pupils from both countries consider football as a male sport. The Spanish pupils, however, show a higher average ( $M = 2.73$ ) than the Swiss students ( $M = 2.45$ ),  $F(1, 119) = 5.80$ ,  $p = 0.01$ . Spanish boys consider football as a more masculine activity ( $M = 2.79$ ) than Swiss boys ( $M = 2.48$ ),  $F(1, 53) = 5.80$ ,  $p = 0.01$ . Among the girls, the same observation can be made ( $M = 2.68$  vs  $2.44$ ),  $F(1, 63) = 3.43$ ,  $p = 0.06$ . Within the focus groups conducted in Spain, of 12 students interviewed, 9 said that football was for boys (“Oh, football is our thing,” Lucas). Only two girls explain that girls “can play” (Elisa) and that “it is a sport for both” (Lamara). In Switzerland, the pupils also ranked football as a primarily male activity (20 out of 24 pupils). Some boys even admit that playing football with girls “is weird, because normally girls don’t play football” (Luc). Only two Swiss boys explained that girls also play football. The girls willingly recognize that football is rather masculine. In particular, they explain that boys are “stronger” (Marine). Two girls point out that they have as much right to play as boys, even if they admit that “not many girls play football. Only boys. We are more used to seeing boys play” (Pauline).

In both countries, some boys admitted that girls could play with them. For Andre, “girls can play sometimes.” The Spanish pupil explains, however, that boys are better at football. Lucas shared this observation: “I know a girl who plays but not as well as I do.” In Switzerland, during a focus group conducted only with boys, silence fell when the image showed a girl playing football. The pupils quickly talked about break time and “girls who never play,” “it doesn’t exist” (Jacques). While some girls admit that they do not play during break time, others explain that the problem in school is that “the boys don’t let them play” (Charlotte).

**Dance: An activity for girls, especially in Spain.** The Spanish pupils classify dance as a feminine activity ( $M = 1.15$ ), while the Swiss pupils see it more as an activity for both genders ( $M = 1.75$ ),  $F(1, 118) = 41.39$ ,  $p < 0.001$ . This finding re-emerges in the answers of the girls, both in Spain and Switzerland ( $M = 1.04$  vs.  $1.69$ ),  $F(1, 63) = 38.90$ ,  $p < 0.001$ . The Spanish boys also share this view with respect to the Swiss boys that associate dance rather as an activity for both sexes ( $M = 1.25$  vs  $1.83$ ),  $F(1, 53) = 13.29$ ,  $p = 0.01$ . In the focus groups, the differences in answers between pupils of the two countries are narrower. Very quickly the finding that dance is a female activity emerged. Of the 36 pupils surveyed in total (Switzerland and Spain), 30 consider that dancing is for girls. As for Spanish boys, dance is “something feminine” (Andre). Only four boys in the two countries combined cite dance as a neutral activity. The girls share this view and explain in particular that there are always more girls doing dance. Even if “it’s not prohibited, dance is a lot more for girls than for boys” (Charlotte).

**Boys who dance: Between laughter and shame.** When the researcher mentions the possibility for the boys to dance, some Spaniards say they “would be ashamed,” and “would be embarrassed” (Lucas). In Switzerland, this view is shared with, in particular, the fear of having “to dress like a girl” (Christophe). In three of the focus groups conducted, the image of a boy dancing triggered silence and mockery. For Luc, boys who dance, “means that they’re a bit barmy.” For the girls, seeing boys dancing “is weird” (Lucie) but “it’s not forbidden” (Pauline).

## 6.2 Toys

**Dolls: A symbol of the feminine universe.** The Spanish pupils do not hesitate to classify dolls as a female toy ( $M = 1.21$ ) while the Swiss pupils associate them rather with a toy for both sexes ( $M = 1.55$ ),  $F(1, 119) = 9, 95$ ,  $p = 0.02$ . These differences are confirmed in the comparison between the genders, especially among Spanish boys who believe that playing with dolls is primarily a female activity ( $M = 1.12$  vs  $1.71$ ),  $F(1, 53) = 11.66$ ,  $p < 0.001$ . Among the girls, the results of the questionnaires

show no significant differences,  $F(1, 63) = 0.91, p = 0.34$ . Within the focus groups, playing with dolls quickly emerged as an activity for girls, both in Spain and Switzerland. All pupils shared this finding. It's "100 % for girls" (Jacques), "of course it's for girls" (Andre), "sure and certain" (Elisa), "all girls like Barbies" (Christophe). Only one boy said he had already played with Barbies with his sister. In Switzerland, one pupil defended the interests of playing with dolls to "learn to be a mummy, learn to babysit" (Mélanie).

***Being a boy and playing with dolls.*** When pupils saw the image of a boy with a doll, they pulled faces and started laughing: "now that's funny" (Eric), "yuck especially not Barbies" (Luis). Very quickly some boys said they never played with dolls. While some pupils found it to be "original" (Luc), others preferred to say that it was "bizarre, it's not normal for a boy to play with a doll" (Charlotte). The pupil draws in particular on the example of the parents: "Daddies aren't mummies, I've never seen a daddy looking after a baby." These different remarks were shared by a majority of pupils, both Swiss and Spanish, boys and girls.

***Toy cars: A decidedly masculine space.*** The questionnaire results show no significant differences between the Swiss and Spanish pupils when it comes to toy cars,  $F(1, 119) = 2.45, p = 0.12$ . During the focus groups, in both surveyed countries, playing with toy cars emerged as a male activity. All the boys said they played or had played with toy cars. Few girls said that they spent time playing with this type of toy: "Girls can play but it's the boys who like playing and often girls don't enjoy it much" (Mélanie). In Spain, Lucas explains that while "girls can play, it's not really for girls," "it's more for boys" (Elisa), "it's not very feminine" (Andre). Finally, it emerged from the focus groups that while girls can play, "they have the right but just for a while" (Jacques).

## 7. Discussion

It emerges from this study that gender stereotypes in connection with sporting activities and toys are already entrenched among pupils aged between four and seven years old in a primary school environment. Whatever the image shown (football, dancing, dolls, and toy cars), the Swiss and Spanish pupils make a distinction between the activities and contribute to maintaining the division between male and female (Butler, 2004). The stereotyped comments made by a large majority of pupils confirm the work done on the construction of gender identity, in particular the “gender stability” stage (Kohlberg, 1966; Martin & Halverson, 1981). The answers given by the pupils translate their willingness to respect the norms and gender roles (Mieyaa & Rouyer, 2010). Differences in answers were observed between the two countries, particularly in terms of the questionnaires, the Spanish pupils adhering more strongly to different gender stereotypes. These results finally confirm the importance for this country to continue the reflection and the fight against sexism present in schools and in society at large (Valdivia & al., 2010).

Regarding the physical and sports activities, the answers given and comments made by the pupils confirm a gender separation of practices (Hardin & Greer, 2009). A large majority of students thus describe football as a masculine activity. The girls stand back and do not get very involved in this activity, neither in Spain nor Switzerland. This finding is widely echoed in the work highlighting the lack of girls’ participation in collective activities (Davisse, 2010; Vigneron, 2006). While mixed football teams present challenges (Moreno, 2006), it seems essential to continue the reflection on the content and assessment of team sports (Baena-Extremera & Ruiz Montero, 2009). A better distribution of roles on the ground between pupils is one way in which teachers can intervene, valuing girls’ actions and allowing them to develop in not only peripheral roles (e.g., goalkeeper, defender) (Vigneron, 2006). Rethinking the participation of girls in football also means enabling them to acquire new skills and a stronger sense of



competence (Pontais, 2013). In contact with the boys, Le Goff (2002) proposes the setting up of mixed teams in football, but also in other activities (badminton, athletics, dance) in order to allow the pupils to learn and progress together. Far from neutral, the choice of activities and their programming is intended both to create dynamic dyads and to encourage a change of “leader” in order to go beyond a tutoring that is too often unidirectional, where “boys help girls.”

As for dance, it continues to be primarily regarded by pupils, in particular Spanish pupils, as a feminine activity. These results approve other studies (Dowling Naess, 2001, Gorely & al., 2003) which confirm the feminine image given to artistic activities by young pupils. In Spain, a reflection on teacher training in artistic activities is being considered (Villar Lopez, 2011). This training seems necessary to “democratize dance” (Padilla & Zurdo, 2003). Allowing students to engage in a genuine artistic experience, such as making a show at the end of the year (Bréau, 2013; Crance, Trohel & Saury, 2014), is an option to combat gender stereotypes. Other proposals suggest that students, especially boys, put words on their feelings and emotions during dance lessons (Gard, 2008). Artistic activities must today be part of the educational offering proposed to the pupils, an offering too often limited to performance activities, considered as masculine. (Lopez-Villar, 2011; Pontais, 2013).

Toys are also subject to gender separation between male (toy cars) and female (dolls). The attitude of the Swiss and Spanish pupils towards toys again reinforces gender norms already present in society (Zegai, 2010). For boys, it seems impossible or at least difficult to play with dolls. These results echo in particular the work carried out on the lack of freedom left to boys and the eagerness of parents to see their children play with toys more consistent with their gender (Collet, 2011). Incidentally, in Spain, 27.2 % of parents still believe that children should play with gender-relevant toys (Lopez-Villar, 2014). To enable each pupil, girls and boys alike, to grow into free and happy adults comfortable with their own identity, it seems essential that they are offered a maximum range of toys. Awareness-raising among parents and work within schools play an important role in the process of deconstructing gender norms and gender

stereotypes. Allowing the pupils to express themselves with a maximum range of toys is particularly important given that the gender identity of the pupils is also built through these manipulations and experiences (Rouyer, 2007).

While our study looked at the views of pupils about gender stereotypes in the course of different activities, future research on the construction of gender identity could be carried out to understand how pupils act and interact in the course of different activities that are more or less stereotyped. The work conducted today around “doing gender” highlights in particular the richness and relevance of observation measures (West & Zimmerman, 1987). Moreover, through the continuation of the PEERS project, new courses of action, used in class or in PE class, could be implemented in order to combat gender stereotypes (e.g., Bréau, Ribalta-Alcalde & Lentillon-Kaestner, 2016; Muller & Olgati, 2016).

## 8. Conclusion

This study stressed the adherence to gender stereotypes by young pupils educated in Switzerland and Spain. In both countries, sports and toys are the subject of a real division and a gender separation. The comments made by the pupils confirm the broader presence of a divided and gendered society (Butler, 2004). The maintenance of gender stereotypes nevertheless limits the personal and professional success of the young adults of tomorrow, and their freedom to participate in all activities. Reflection and work around the “deconstruction” of gender norms seems necessary (Cuddy, Fiske & Glick, 2008). At school, enabling teachers to think about the gender issue seems important, as the report published by the European Commission (2009) emphasizes that teachers and trainers can sometimes adopt a conservative attitude. In Switzerland, the training offered to future teachers should enable access to a “gender competence” (Liebig, Rosenkranz-Fakkegger & Meyerhofer, 2009), which promotes awareness of gender inequalities

and certain discourses and other stereotyped attitudes. At the University of Teacher Education of State of Vaud, a new office, which opened in April 2014 for the promotion of equality between women and men, would like to participate in the establishment of lessons that combat gender stereotypes and encourage the construction of plural and authentic identities among young pupils. The office for equality between women and men provides HEP Vaud teachers and students with teaching aids to discuss with students the question of equality between the sexes. In Spain, the issue of teacher training is also a priority for the development of a more egalitarian, equitable, and just society (Belalcazar, 2011). Schools and teachers should participate in this work which must at all cost be conducted with primary level pupils as “children do not internalize the world of their significant others as a possible world among many others. They internalize it as the world, the only existing and conceivable world, just the world” (Berger & Luckmann, 2006, p. 184).

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## Chapter 12: Teaching food practices and sustainability in an international context

### **Abstract**

This chapter presents the results of a PEERS project conducted during the academic year 2012–2013 between the HEP Vaud and Lesley University in Boston. The focus of the study is on the teaching of food in the context of education for sustainable development. After a presentation of the theoretical framework, the project is presented in its various dimensions (process, analyzes carried out, discussion and perspectives). In the conclusion, the author shows how research and training combine in such a project. He also referred to the need to allocate the necessary resources for the generalization of such a program

### Introduction

The PEERS program – Students and researchers social networks projects – was developed by the University of Teacher Education of State of Vaud (HEP Vaud) with the aim of connecting two teaching institutes, but also to guarantee the broadening of the academic horizon and to improve the quality of the research and courses.

This chapter presents a project which was led during the academic year 2012–2013 and which object was Teaching food practices and sustainability in an international context. We will first present our theoretical framework and the research questions. We will then describe the methodology of the project. The third section presents the results,

that is to say the common work, the analysis of lesson preparations and teaching and the point of view of the students. In the last section, we discuss our results and propose some actions that we could carry out in the future.

## 1. Food, education for sustainable development (ESD) and global competence

Food is now a controversial subject both in academia and in society more generally: food scandals are regular occurrences and give rise to new studies, but these fail to reassure the population. At the same time, food resources are not fairly distributed over the Earth's surface, so that 795 million people are underfed (FAO, 2015). The rapid growth in the world's population (expected to reach 9 billion by 2050) makes it urgent now to find the solutions required to feed everyone.

A further issue arises from the fact that food production has a major impact on the environment: greenhouse gases are produced in the various stages of the food cycle (production, processing, storage, consumption, recycling, etc.). Plant health chemicals (pesticides, insecticides, fungicides) are used in many branches of production chains. These are damaging for the environment and also for health. Finally, we know that industrial foods create problems of overweight and obesity. Enabling pupils to understand these problems and take part in the public debate is now an objective of most curricula and goes far beyond the teaching of the scientific disciplines, meaning both the natural sciences and the human and social sciences. This kind of education forms part of what is now commonly called education for sustainable development.

According to UNESCO (2012), education for sustainable development should enable everyone to acquire the knowledge, competences, attitudes and values needed to build a sustainable future. This education implies both conventional forms of teaching and learning

and also some new forms. The Global Monitoring and Evaluation Survey (GMES) distinguished the following nine forms:

1. Discovery learning;
2. Transmissive learning;
3. Participatory/collaborative learning;
4. Problem-based learning;
5. Disciplinary learning;
6. Interdisciplinary learning;
7. Multi-stakeholder social learning;
8. Critical thinking-based learning;
9. Systems thinking-based learning.

Among these nine forms, the seventh is precisely what we are aiming to develop in the PEERS project. Multi-stakeholder social learning means “*bringing together people with different backgrounds, values, perspectives, knowledge and experience, from both inside and outside the group initiating the learning process, to set out on a creative quest to solve problems that have no ready-made solutions*” (UNESCO, 2012, p. 26).

As regards content, we have also sought to develop systems thinking-based learning. We wanted the students and their pupils to look for “connections, relationships and interdependencies to see the whole system and recognize it as more than the sum of its parts and to understand an intervention in one part affects other parts and the entire system” (*ibid.*). On this point, our previous researches showed that pupils are able to mobilize elements of complex thinking – in particular relations of linear causality between several elements. More elaborate elements, such as chains of multiple causalities, feedback loops or observation of dialogic tensions, appear more rarely (Pache, Hertig, Curnier, 2017). Complex thinking is therefore only partially engaged, especially because the pupils have difficulty in identifying the thinking tools that contribute to it. One hypothesis to explain this gap is that these tools are not clearly identified by the teachers themselves and that the sequences set up often mobilize cross-cutting research procedures and only rarely include phases of institutionalization of the tools for complex thinking (*ibid.*).

The main concept of our research, “food”, can be regarded as a relational concept (Bruner, 1966), i.e. a concept that is defined in relation to other concepts with which it is closely connected. To define these concepts, it is useful to draw on the works of the American geographer L. C. Smith (2011), who examines four global forces that explain the world of today and tomorrow, namely demography, natural resources, globalization and climate change. As geographers ourselves, we would add the concept of the stakeholder and that of social injustice, the latter referring more to the issues involved in education for sustainable development. Interrelating these various concepts, we obtain the food concept network shown in Figure 1 below.

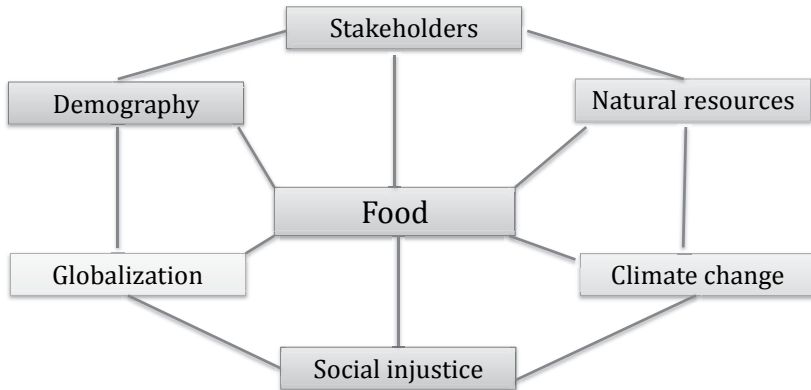


Figure 1: Food concept network.

Previous studies showed that young teachers prefer the words circulating in the social space, to the detriment of the concepts and methods of academic geography. With regard to the choice of situations, they give preference to narratives of action, real or fictitious, which allow pupils to confront authentic social situations (Pache, 2014).

Tackling such content in systemic terms and in collaboration with other students implies possession of what some authors call a global competence (Mansilla & Jackson, 2011). By global competence, we mean “*the capacity and disposition to understand and act on issues of global*



significance” (*ibid.*, p. xiii). More precisely, this competence consists in understanding the world through disciplinary and interdisciplinary study. It also requires mastering the following four sub-competences:

- Investigating the world beyond one’s immediate environment;
- Recognizing one’s own and others’ perspectives;
- Communicating ideas effectively with diverse audiences;
- Taking action to improve conditions.

As shown in Figure 2, these four sub-competences can each be associated with one of four objectives which will serve as guidelines with a view to training citizens who are aware of and curious about how the world works today and will work in the future.

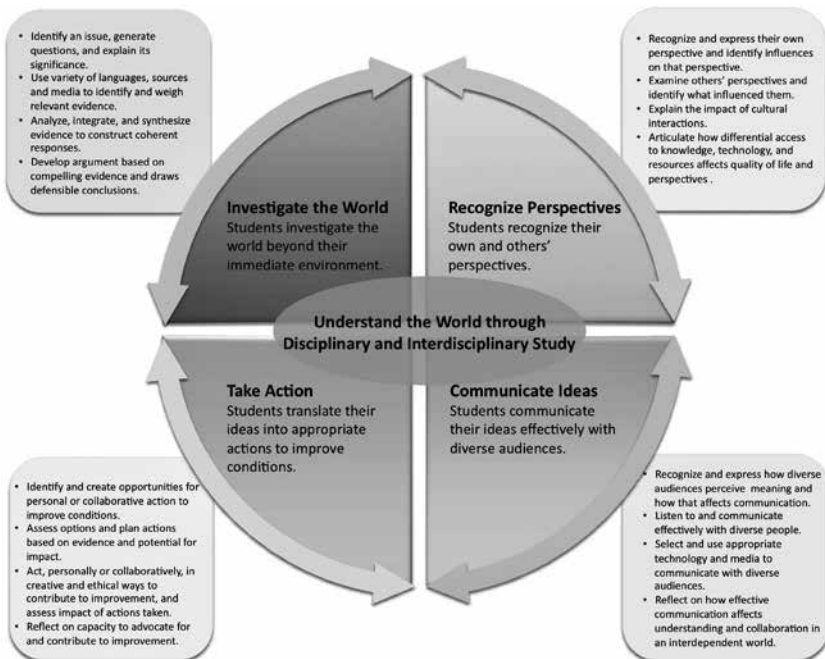


Figure 2: Objectives in developing global competence (Mansilla & Jackson, p. 12).

At this stage, we can formulate three research questions:

- What are the didactic choices made by young teachers to teach food in a sustainable development perspective?
- What knowledge is taught?
- What benefits do young teachers get from the PEERS project?

## 2. Methodology

In this section, we'll describe the research-training process. The first step was to recruit three students. We set a number of criteria, such as interest in the project, knowledge about education for sustainable development (ESD) and proficiency in English. During the second step, the students were encouraged to make contact with one another through social and chat media (Skype, Facebook). When the topic had been set out by the instructors, the students embarked on an initial exchange of ideas to prepare for the working week in Boston. The third step took place in Boston and the main goal was to develop a teaching sequence on food from an ESD perspective. The fourth step was to implement the teaching sequence in the student's classroom. Finally, the last step was to analyze the process and identify the skills developed by the students (Figure 3).

<i>Steps</i>	<i>Calendar</i>
1. Recruitment of three students	September 2015
2. Curriculum study	October and November 2015
3. Planning a Teaching Sequence	December 2015 (in Boston)
4. Teaching in the classes of the students	February to March
5. Analysis and reflection on the research-training process	April (in Lausanne)

Figure 3: The fifth steps of the research-training process.

To analyze our results, we apply the principle or triangulation. The concept of triangulation takes into account the relativity of the points of

view, necessary for the examination of the diversity and the complexity of the human being. This approach is opposed to the univocal approach whose ambition is to identify reality from a privileged angle (a single tool, a single theory, a single observer). Triangulation, on the other hand, aims to put into debate the various stages of research in order to avoid the ideological closure. It promotes the implementation of multiple lightings in order to follow reality in its spatio-temporal movement and in its complexity (Pourtois, Desmet & Lahaye, 2006).

### 3. Results

In this section, we'll present our results in four steps: the work in Boston, the work in Lausanne, the analysis of lesson plans, the evaluation of teaching and the students' point of view.

#### 3.1 *The work in Boston*

During the week in Boston, the group met each other and reflected on the object of the project, that is to say food and sustainability. After several discussions, the students built the framework of the teaching unit, which is composed of six steps:

1. The first lesson looks like an “icebreaker”, which aims to create an interest for the pupils, to fix the theme of the study and the problem to solve. It was decided to work on several food products to establish the “history” of the product, for example the place where it was produced, the transport or the place where it was sold;
2. The second lesson focuses on different supply food chains:
  - o The industrial food chain;
  - o The local food chain;
  - o The organic food chain.

3. The third lesson focuses on series of practices in both contexts (Boston and Lausanne). The aim is to discuss the impacts of the practices and maybe realize what they could learn from each other.
4. The fourth lesson aims to show a way to grow plants or vegetables. Biodiversity and organic food are at the core of the lesson. At the world scale, the pupils will learn the aims of the Global Seed Vault (Svalbard, Norway).
5. The fifth lesson will show the relationships between food and lifestyles. Indeed, food depends first of all of political decisions, like the Irish Great Famine showed it.
6. Finally, the sixth lesson will consist in organizing a debate in which pupils will argue their opinion on the following controversial issue: Which kind of food and practices do we need for a sustainable world?

In the same time, the students had the opportunity to visit a school, which was working with the principles of sustainability. They could speak with a professional who cooked with organic food. They assisted a course about political sciences and, last but not least, they visited an organic farm. They conserved documentation about this investigation, either with recording or with photographs.

### *3.2 The work in Lausanne*

During the week in Lausanne, we continued our investigations into sustainable food. For example, we visited the Lavaux vineyard, which has been a UNESCO World Heritage Site since 2007. In discussion with a winegrower, the students were able to understand the issues involved in conserving such a territory. They were also made aware of the Swiss system of direct democracy, which enables various social actors to propose popular initiatives.

With a visit to an organic farm<sup>1</sup> the students were then able to make comparisons with the work done in Boston. In particular they learned that

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1 The Vulliemin family farm at Pomy. See website: <<http://www.vullieminpomy.ch>>.

most Swiss farms are small family undertakings, selling their produce directly to a clientele who increasingly appreciate this way of buying and re-establishing contact with the producer.

The students also attended classes both at the internship sites of their Swiss partners and within the HEP Vaud. The latter comprised a course on sustainable development education and a workshop on the natural sciences.

Finally, in formal and informal meetings, and also around the experiments conducted in the internship classes, the students had many opportunities to discuss the particular features of their respective school systems.

### *3.3 Analysis of lesson plans and evaluation of teaching*

In this section, we first analyze the students' lesson preparations and then the teaching actually given.

#### *3.3.1 Analysis of lesson preparations*

Although the students agreed on an identical structure for their teaching practice, it is interesting to observe differences in implementation. These were seen both in the structuring of the lesson and in the content addressed. For example, the American students systematically planned an evaluation at the end of each lesson whereas the Swiss students intended to evaluate the pupils in the final debate. We also noted that for the American students, each lesson corresponded to a question. By contrast, questions did not necessarily appear in the Swiss students' lesson preparations. Their lessons correspond more to stages in the building up of knowledge, which, in Session 6, should enable the pupils to take up a position in the debate (on the topic: "What is sustainable food?").

The ideas addressed also differ, as shown in Figure 4. In Lesson 2, for example, the Swiss students emphasized the impact of industrial food production, whereas the American students opted for a climate-based approach to explain the importation of products. In other words, the

positioning is not the same: on the one hand the aim to question the food industry and its imports, on the other hand it is to provide an argument to justify importing.

Lesson 3, which unfolded very differently on the two sides of the Atlantic, also provides an interesting contrast. Whereas the Swiss students asked their pupils to write a letter describing their diet, the American students emphasized the knowledge needed to set up a vegetable garden.

	<i>Boston</i>	<i>Vaud</i>
Lesson 1	Origin, distance, climate, local, greenhouse gases, sustainability	Origin, distance, means of transportation
Lesson 2	Climate, zones, time, California, Midwest	Imports, food industry, impact on environment, impact on employment, greenhouse effect, gray energy
Lesson 3	Plants, nutrients, photosynthesis	Diet, sustainable food
Lesson 4	Sustainable food, production methods (industrial, local) Irish Famine Costs of a farm	Plants, nutrients, photosynthesis
Lesson 5	Control, lifestyles, businesses, politics, religion, food data bank	Politics, lifestyles, history of the potato
Lesson 6	Costs, percentage of income spent on food, values	Sustainable world

Figure 4: Ideas addressed in lessons.

### 3.3.2 Analysis of actual teaching

In this sub-section, we look more closely at two moments that strike us as particularly interesting: the writing of letters to the American counterparts and the final debate.

The writing of letters seems to us to be a beneficial activity in several ways in the context of education for sustainable development. It requires knowledge of a certain number of concepts, such as “diet” or “sustainable food”; the pupil must decenter herself and select information that is potentially interesting to the American pupils; and it contributes to participatory learning, since it teaches the pupil to enter into contact and therefore communicate. Figure 5 gives an example of a letter sent by a Swiss pupil.

Hi students,  
At this moment, in sciences, we are learning about sustainable food. So I'm writing you about my daily diet.  
We learned that in other countries, they don't have a lot to eat and that some meals we eat have traveled hundreds and thousands of kilometers!!!  
My diet:  
In the morning, I'm not necessarily hungry so I just drink a glass of milk.  
At a pinch, I have bread roll with raspberry, cherry or apricot homemade jam.  
At noon, it's more varied, if I'm going ice-skating, my mother makes me tortellini; if I have more time to eat at home she cooks something else.  
In the evening, my mother or my father cooks us the leftovers of the other days.  
But sometimes, when my parents want to, we go to the restaurant, most of the time Asian because my father is Asian.  
I think that the best for sustainable food is not to eat strawberries in winter, therefore eat seasonal products!!!  
I hope to hear about you soon!  
*Sophie Tran*

Figure 5: Letter written by a Swiss pupil.

Secondly, we would like to look again at the debates organized in the students' classes. These debates belong to a more general theoretical framework of learning to reason in relation to a controversial or socio-scientific question (Mäkitalo, Jakobsson & Säljö, 2009). What interests us in particular is the pupils' capacity to approach an

object from multiple points of view, adopting different speech genres (Bakhtine, 1986). For example if we take a simple object such as an orange, it can be envisaged in several ways, with the aid of different speech genres:

The satisfied consumer may speak of its delicious taste and its juiciness, the dietician will speak of it in terms of nutritional value and richness in vitamin C, and the artist may attend to it in terms of its color, shape and texture in the context of what is to be a still life. At more abstract levels, we can think of the importer of oranges, the transport companies shipping oranges from their sites of production to consumers all over the world, and the economist, in her role as advisor to a multinational company, analyzing the supply and demand in the market for oranges, as thinking and communicating about oranges in very diverse manners. In the latter cases, the terms and concepts that are productive are very different from those that characterize the consumer enjoying his morning fruit or the shop owner trying to persuade customers to purchase fresh oranges (Mäkitalo & al., 2009, p. 7).

In the Swiss classes, the aim was to debate a dilemma. Indeed, the dilemma presents a strong heuristic potential, because it makes it possible to work explicitly a dialogical mode of thought (Morin, 2005; Audigier, Fink, Freudiger & Haeberli, 2011). The chosen dilemma was:

*Should we choose lasagnas made by the local butcher or lasagnas from the supermarket?*

The pupils' capacity to decenter themselves is seen several times in the filmed debates. As well as the consumers, the pupils mentioned farmers, butchers, retailers, small shops, big supermarkets, and people with modest incomes. Sometimes other cultures are mentioned, such as Muslims who do not eat pork, or American culture as in Extract 1.



*Extract 1:*

- 1 Pupil M But I'd like to come back to quantities. For example, in America... when I lived in America, well, the lasagna portions were... gigantic... And the well brought-up kids had to empty their plates completely... the whole portion... well, they would get enormous in a week.
- 2 Teacher Right, so your concern is those portions. Would anyone else like to say something about the portions?

This extract also brings to light a somewhat stereotypical view of Americans. Contact between the two populations of pupils can therefore only be positive in nuancing such images.

However, the real interest of such a debate is as a means of stimulating prospective thought, in other words the capacity to think about the future. Extract 2 shows that it is difficult to conceptualize political action and more especially the conditions and consequences of several possible actions. The pupil confuses the economic and political registers when he suggests “lowering the prices”; and, in response to the teacher’s question, he puts himself in the shoes of the actor he knows best, the consumer. So it can be seen that the link between sustainable food and the measures to be taken locally is not easy to make for pupils aged 11.

*Extract 2:*

- 1 Teacher If we could change something, what would it be useful to change with a view to sustainable food... in terms of the environment?
- 2 Pupil S. We could lower the prices.  
[...]
- 3 Teacher What effect would it have to bring down the price of lasagnas?
- 4 Pupil B. When people see it's cheaper they'll think it's not so good.
- 5 Teacher So again it's about consumer confidence... [...] That would be an argument. What else?  
[...]

### 3.4 The students' point of view

The students unanimously recognize the benefits of such a project. These benefits first relate to the topic in question: food and sustainable development.

For a majority of the students, immersion in the partner culture was particularly useful in helping them understand the content to be taught. The student most explicit on this point is Paola:

*[The trip to America] changed me, it has enabled me to transmit something to children. Teaching is most effective when the teacher enters into the knowledge, masters it perfectly and transmits it to the pupils. And I'm very pleased with the interest I've managed to pass on to my pupils and all the knowledge that has remained in my teaching. They enormously appreciated this sequence and were also impatient to know what was coming next. I got them to understand difficult ideas like sustainable food, gray energy, and greenhouse gases. I am might not have found that so easy if I hadn't taken part in this project.*

But the benefits of the project also lie in the mechanisms set up for participation, such as the debate structure. One student, for example took the opportunity to set up a real evaluation of the pupils' competences.

In cultural terms, the students emphasize openness to the world, an ability to move beyond prejudices and stereotypes. For example, the Swiss students were surprised to see that a school in Cambridge was based on the principles of sustainable development (locally produced organic food in the school canteen, environmentally-friendly heating and insulation, for example).

The collaboration among students was also identified as a strong point. The teaching sequences were put together by teams of students, the work was divided, and the final product was judged to be extremely rich and comprehensive.

Finally, the Swiss students emphasize the importance of a good command of English for carrying this project through.

## 4. Discussion and perspectives

In this part, we will resume our research questions, in order to answer them systematically.

*What are the didactic choices made by young teachers to teach food in a sustainable development perspective?*

Our results show that young teachers favor working around social situations: writing a letter to American partners and implementing a debate on a controversial issue. Thus, the first steps of the approach aim to build the reference knowledge to enable students to reinvest them in situations. According to some authors, this approach is similar to a problem of detour and return. This means that building societal problems related to sustainable development involves identifying, in the contributing disciplines, the resources – knowledge, know-how, attitudes – to find reasoned solutions. But the solutions and the decisions to be taken are not deduced mechanically from this or that science. They are choices that combine scientific knowledge and other knowledge (Audigier, Fink, Freudiger & Haerberli, 2011).

*What knowledge is taught?*

The knowledge taught is of several types. First, there is evidence-based knowledge: the greenhouse effect, production-consumption chains, sustainable food, lifestyles, etc. There are also know-hows: reading labels, comparing texts and points of view, reading a graph. Attitudes are found: to be critical, to explain the complexity of phenomena, to project themselves into the future. Finally, we find citizen competences (Audigier, 2000): cognitive skills relating to the organization of powers and the legal conditions for action and decision; ethical competencies that identify the links between situations and values, such as human rights; social skills, and how to interact with others and decision-making and action capacities.

*What benefits do young teachers get from the PEERS project?*

By implementing such a project, young teachers have implemented various skills. They have developed a critical assessment of food supply chains, consumption practices and the role of different actors. They built an interdisciplinary learning teaching approach with common objectives and then implemented it in their internship class. They have also used information and communication technologies effectively to interact with their partners. Finally, they have identified criteria for evaluating their project and the professional skills they have built.

## 5. Conclusion

In conclusion, the trainers researchers that we are would like to recall three points.

The first refers to the idea of a research community. Indeed, such a project, built over a year, allows us to build a group that thinks together, develops interpersonal skills and becomes aware of the collective weight or collective competence. It is very reassuring for young teachers who do not yet master all the objects to be taught.

The second aspect refers to training. We believe that such a form of training is essential for training in education for sustainable development. Indeed, to develop a global competence (Mansilla & Jackson, 2011), it is essential to propose devices that are out of the ordinary and that invite action. The only disadvantage of these devices, however, is that they are costly and time consuming and only affect a small part of the students. All that remains to be done is to reflect on the modalities of generalizing such a program in the training of teachers.

The third point refers to benefits for the faculty members: it was very interesting to discuss about researches and various teacher training strategies. Such an experiment permitted to enlarge our scientific networks and to initiate a fruitful collaboration.

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## Chapter 13: A Comparative Analysis between Physical Education, Physical Fitness, Motivation, & Self-Concept in Middle School Swiss and US Students

### **Abstract**

An international exchange (PEERS program) was realized between physical education (PE) teacher students and teacher educators from Switzerland and America. This collaboration was used to develop an international research project. The purpose was to compare the physical fitness, motivation, and self-concept of Swiss and American students in (PE). Participants included 418 students from middle schools in Switzerland (n=301) and the US (n=117). *Fitnessgram* physical fitness measures included cardiovascular endurance (PACER), muscular endurance (curl-ups), muscular strength (push-ups), flexibility (back-saver sit-and-reach), and body composition (BMI). Questionnaires included the Motivation in Physical Activity Measure-Revised (MPAM-R) and the Physical Self-Description Questionnaire-Short Form (PDSQ-S). A MANOVA was used to test statistical differences between the groups. Results showed that the Swiss students had higher cardiorespiratory endurance levels but lower motivation (enjoyment, competence, fitness) and self-concept scores (endurance, strength, flexibility, self-esteem) than American students. Further studies on larger samples should be carried out to confirm these results.

## 1. Introduction

An international exchange (PEERS project) was conducted during three school years between physical education (PE) teacher students and teacher educators from the State of Vaud of Switzerland (3 students, 1 professor) and the State of California of the United States of America (3 students, 2 professors). This collaboration was useful to discover the teaching of PE in both countries and to develop international research projects. This chapter aims to present the results of an international research project for the first two years. The purpose of this study was to compare the physical fitness, motivation, and self-concept of Swiss and American students in middle school PE classes. Because of differences in health behaviours and outcomes between Switzerland and United States, we hypothesized that Swiss middle school PE students would have higher fitness levels, greater physical activity motivation and greater self-concept than US students.

## 2. Theoretical Framework

### *2.1 Physical Fitness, Motivation, and Self-Concept among Swiss and American Students*

PE has a role in the development of physical fitness, self-concept, and motivation (Castelli & Beighle, 2007; Tappe & Burgeson, 2004).

#### *2.1.1 Physical fitness*

PE provides opportunities for students to refine motor skills, to be physically active and to gain physical fitness (Castelli & Erwin, 2007). The five components of health-related fitness include cardio-respiratory endurance, muscular strength, muscular endurance, flexibility and

body composition. Fitness testing is a commonly used practice within the school PE curriculum of many countries (Morrow, Zhu, Franks, Meredith, & Spain, 2009). Few studies have estimated fitness condition because of conceptual and technical problems (Michaud & Narring, 1996; Naughton, Carlson, & Greene, 2006). In the United States, the Fitnessgram is a fitness assessment and reporting program for youth, first developed in 1982 by The Cooper Institute. The assessment includes a variety of health-related physical fitness tests that are used to determine students' overall physical fitness and suggest areas for improvement when appropriate (see <[www.fitnessgram.net](http://www.fitnessgram.net)> for more information). The Fitnessgram is considered a valid and reliable measure of children's physical fitness and has been used in previous research to measure physical fitness (Castelli & Valley, 2007; Welk, Morrow, & Falls, 2002). Being overweight has some consequences on the students' experiences in PE (Trout & Graber, 2009). Trout and Graber (2009) showed that many overweight students perceived physical education to be of little or no benefit to them, due to negative experiences in PE. From a motivational standpoint, it is unlikely that students would desire to participate in a class if they believed it was not valuable. Castelli and Valley (2007) showed that engagement in physical activities among children was most likely influenced by the individual's aerobic fitness, overall physical fitness, and motor competence. In addition, Jaakkola & al. (2013) found that physical fitness was positively related to perceived competence of students, which in turn had a positive association with situational intrinsic motivation of students toward fitness testing class.

### *2.1.2 Physical self-concept*

Physical self-concept is a predictor of physical activity (Castelli & Valley, 2007; Hands, Larkin, Parker, Straker, & Perry, 2009; Spessato & al., 2013). A number of researchers have suggested that what students believe and how they think and feel can affect achievement in many ways (Lee, Carter, & Xiang, 1995; Motl, 2007). There is evidence to suggest that beliefs about ability and competence may be precursors to positive motivational patterns in students (Jaakkola & al., 2013; Nicholls, 1984). Perceived competence is related to successful performances in PE (Gao,

Lodewyk, & Zhang, 2009; Xiang, McBride, & Bruene, 2004, 2006). For example, Gao & al. (2009) showed that middle school students' ability beliefs emerged as significant predictors of Progressive Aerobic Cardiovascular Endurance Run (PACER) test scores.

### *2.1.3 Motivation*

In addition to physical self-concept, motivation is an important factor implied in learning in PE. Concerning motivation in exercise and sport, the distinction between intrinsic and extrinsic motives for participants is very important (Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997; Vallerand, 2004). Intrinsically motivated behaviours are those performed for the satisfaction one gains from engaging in the activity itself. According to most theories, the primary satisfactions associated with intrinsically motivated actions are experiences of competence and interest/enjoyment (Ryan & al., 1997). Thus, for the purpose of the current study we considered individuals whose participation was motivated mainly by competence and enjoyment as primarily having an intrinsic focus. By contrast, extrinsically motivated behaviours are those that are performed in order to obtain rewards or outcomes that are separate from the behaviour itself (Ryan & al., 1997). In the current study, we considered students who have body-related motives as primarily extrinsically focused, since their goals concern outcomes extrinsic to the activity per se. A student can develop both intrinsic and extrinsic sport motives, but their salience differs (Ryan & al., 1997). Contrary to extrinsic motives, intrinsic motivates facilitate positive outcomes such as well-being and academic achievement (Deci & Ryan, 2000; Lemos & Verissimo, 2014; Levesque, Copeland, & Pattie, 2010; Motl, 2007; Vallerand, 2004).

## *2.2 Difference in Health Behaviours and Outcomes Between Switzerland and United States*

The *Health Behaviour in School-Aged Children* (HBSC) is a World Health Organization (WHO) collaborative cross-national study, in which



data is collected on 11-, 13- and 15-years old boys' and girls' health and well-being, social environments and health behaviours every four years in 43 countries, notably in Switzerland and United States. Some results from the HBSC 2009/2010 survey (Currie & al., 2012) compared the health behaviours and outcomes of Swiss and American youth including moderate-to-vigorous physical activities, sedentary behaviours, and body weight.

### *2.2.1 Moderate-to-vigorous physical activity*

Physical activity is essential for both health outcomes and academic learning improvement. First, physical activity is essential for long- and short-term physical and mental health outcomes. The WHO estimates that 1.9 million deaths worldwide are attributable to physical inactivity and at least 2.6 million deaths are a result of being overweight or obese (WHO, 2002, 2005). In addition, the WHO estimates that physical inactivity causes 10 to 16 % of cases of breast, colon, and rectal cancers as well as type 2 diabetes, and 22 % of coronary heart disease, and the burden of these and other chronic diseases has rapidly increased in recent decades. Physical activity in adolescence may contribute to the development of healthy adult lifestyles, helping reduce chronic disease incidence and increasing well-being in adulthood (Hallal, Victora, Azevedo, & Wells, 2006; Lotan, Merrick, & Cameli, 2005; Malina, 2001; Merrick, Morad, Halperin, & Kandel, 2005; Strong & al., 2005).

Second, studies show that more physically active and fit students have better grades and achievement test scores than their less active/fit counterparts (Coe, Pivarnik, Womack, Reeves, & Malina, 2006; Donnelly & Lambourne, 2011; Field, Diego, & Sanders, 2001; Grissom, 2005). Participation in PE and physical activity can improve academic achievement by enhancing concentration and by helping students to be more attentive (Raviv & Low, 1990).

Strong & al. (2005) recommended that school-age youth should participate daily in 60 minutes or more of moderate to vigorous physical activity (MVPA). In Switzerland (OFSP, 2013) and in the US, the national recommendations are at least one hour of moderate to vigorous physical activity per day for children and adolescents. In the HBSC

survey (Currie & al., 2012), young people were asked to report the number of days over the past week that they participated in MVPA for a total of at least 60 minutes per day. Results showed physical activity decreased with age in both countries, with the percentages across all age groups in both countries low. Nevertheless, a higher frequency of daily MVPA was found among American than Swiss youth at each age: at 11 years-old, 24 % of American girls versus 11 % of Swiss girls, and 30 % of American boys versus 20 % of Swiss boys reported at least one hour of MVPA daily; at 15 years-old, 17 % of American girls versus 6 % of Swiss girls, and 33 % of American boys versus 12 % of Swiss boys reported at least one hour of MVPA daily (Currie & al., 2012).

### 2.2.2 *Sedentary behaviours*

Sedentary behaviour refers to an absence of or minimal involvement in physical activity, and low energy expenditure. A review of recent research revealed television viewing time was the most commonly measured sedentary behaviour. Time spent in non-occupational sedentary behaviours (particularly television viewing time) is associated with excess adiposity and an increased risk of metabolic disorders, with overweight and obesity and unhealthy dietary behaviours in children, adolescents and adults (Pearson & Biddle, 2011; Sugiyama, Healy, Dunstan, Salmon, & Owen, 2008). In the HBSC survey (Currie & al., 2012), young people were asked how many hours per day they watch television (including videos and DVDs) in their spare time on weekdays and on weekends. Results showed that Swiss youth spent less time watching TV than US youth (Currie & al., 2012): at 11 years-old, 24 % of Swiss girls versus 50 % of American girls, and 29 % of Swiss boys versus 56 % of American boys spent two hours or more per day watching TV; at 15 years old, this percentage increased among Swiss youth but it was always lower than among American youth (38 % of Swiss girls versus 53 % of American girls, 45 % of Swiss boys versus 54 % of American boys). In addition, cell phones increase opportunities for sedentary behaviours (e.g., surfing the internet, playing video games). Lepp, Barkley, Sanders, Rebold, and Gates (2013) showed that high levels of cell phone use indicated a broader pattern of sedentary behaviours

such as watching television. Moreover, cell phone use was significantly and negatively related to cardiorespiratory endurance independent of sex, self-efficacy, and percent fat, which were also significant predictors. Buckworth and Nigg (2004) found that only computer use for men and television watching for women were negatively correlated with exercise and physical activity. In the same way, Sugiyama & al. (2008) showed, after adjusting for body mass index and socio-demographic variables, that women's time spent watching TV was positively associated with time in other sedentary behaviours and negatively with leisure-time physical activity, but no such associations were observed in men.

### *2.2.3 Body weight*

Overweight and obesity remain public health problems among young people (Rokholm, Baker, & Sorensen, 2010). Overweight and obesity impose high costs in health expenditure in countries. For example, according to a study of national costs attributed to both overweight and obesity, medical expenses in the US may have reached as high as \$78.5 billion (WHO, 2009). The problems of overweight and obesity are higher in the US than in Switzerland: among 11 year-old youth, 5 % of Swiss girls compared to 30 % of Americans girls, and 7 % of Swiss boys compared to 31 % of Americans boys were overweight or obese; among 15-year-old youth, 7 % of Swiss girls compared to 27 % of Americans girls, and 14 % of Swiss boys compared to 34 % of Americans boys were overweight or obese (Currie & al., 2012).

### *2.3 PE Curriculum Differences Between the State of Vaud in Switzerland and California in US*

There are various differences between the PE curriculum in the US and Switzerland including number of hours of PE per week, the evaluation, the number of students per teacher, coeducation, and PE uniforms. Concerning the number of required PE hours, students in Switzerland have three periods (45 minutes) of PE per week and one afternoon of sport every 15 days (only from the third school year). In the US, the standard recommendation

is 200 minutes of PE for every 10 school days in elementary school and 400 minutes for every 10 school days in middle school. However, these recommendations may not be adhered to because of school budget issues, with the teaching of PE reduced or eliminated in schools with the lowest financial resources. During the 2007–2008 school year, time spent in PE in the US decreased by 23 %; elementary schools were the most affected by this problem. In addition, California along with 18 other states, agree to give PE exemption to high school students who wish to be exempted from PE classes if they can meet the “Healthy Fitness Zone” requirements of the Fitnessgram. Thus, 38 % of Californian students do not participate in PE lessons, and this rate increases dramatically with age, from 5 % at age 12 to 77 % at age 17 (CHIS, 2007). This decline with age was observed in California but a decline is also apparent in the entire United States.

There are also major differences between the number of students, sportswear requirements, and organization of students in PE classes in Switzerland and in the US. In Switzerland, the student-teacher ratio is 20:1, and in California the ratio may be as much as 100:1. The number of students per class in PE is the highest in California when compared to the rest of the states in the US. The California Department of Education recommends an average of 40 students per teacher, but in reality, the classes are much larger. For example, during the 2007–2008 school year, PE class size increased 26 %; meanwhile, the number of teachers was reduced 22 %. Thus, in recent years, the number of students in PE classes has constantly increased up to 100 students for one teacher (The California Endowment, 2008). In the US, middle school PE classes always include boys and girls in all classes, but in Switzerland, girls and boys are often separated. Sportswear is required in Swiss PE classes but not always in the US. Some schools have PE uniforms but in other schools the students can participate in PE with street clothes and shoes.

Finally, some differences exist concerning the evaluation in PE. Letter grades are given in PE classes in the US but not in the state of Vaud. In the state of Vaud, the teachers use an evaluation notebook to indicate each year the student’s success in activity practiced as well as the possible difficulties in physical activities. The students keep the same evaluation notebook during the three years of the middle school, so the

progress can be directly visible from one year to another. Researchers have found that academic grades influence (positively or negatively) students' achievement (Brookhart & DeVoge, 1999; Brookhart & Durkin, 2003). Assessment in PE can enhance or prevent learning, motivation and achievement (Alkharusi, 2008; Lund & Kirk, 2010). Students' success or failure (in academic contexts) contributes to motivation and self-concept (Marsh & Martin, 2011; Pintrich & Schunk, 2002).

### 3. Methods

#### 3.1 *Sample*

Participants included 418 students (ages 12–14 years) from middle schools in Switzerland (n=301) and the US (n=117).

#### 3.2 *Tools*

Physical fitness was measured using assessments from the *Fitnessgram* (Cooper Institute, 2012). *Fitnessgram* physical fitness measures included cardiovascular endurance (PACER), muscular endurance (curl-ups), muscular strength (push-ups), flexibility (back-saver sit-and-reach), and body composition (Body Mass Index, BMI). The PACER is a 20-m shuttle run at a specified pace that increases every minute. Results of curl-ups and push-ups were based on the greatest number completed to a cadence. The back-saver sit-and-reach measurement was performed on one side at a time; one leg is fully extended with the foot flat against the face of a box and the arms are extended forward over the measuring scale with hands placed one on top of the other. After one side is measured, the student switches the position of the legs and reaches again. The average of number of inches on each side was used for each student in the analyses.

Questionnaires included the Motivation in Physical Activity Measure-Revised (MPAM-R) (Ryan & al., 1997) and the Physical Self-Description Short Form Questionnaire (PDSQ-S) (Marsh, Martin, & Jackson, 2010). The MPAM-R is composed of 30 items and 5 subscales: interest/enjoyment (7 items), competence (7 items), appearance (6 items), fitness (5 items), and social (5 items) motives (Ryan & al., 1997). Each item is rated on a 7-point Likert scale. Frederick and Ryan (1993) found internal consistency (alphas above 0.87 for each subscale) of the MPAM. The translation of this questionnaire in French language from Laure (2007) has been used. The PDSQ-S evaluated how an individual (middle school students) would describe themselves according to 11 different factors (subscales) (Marsh & al., 2010). The Self-Concept subscales selected for study included endurance (cardiovascular endurance), strength, flexibility, body fat, appearance, and physical satisfaction as there were specific connections to fitness and motivation variables; the coefficient alpha estimates of reliability for these subscales are 0.92, 0.92, 0.90, 0.96, 0.91, and 0.96, respectively (Marsh, 1996). Results from Marsh & al. (2010) demonstrated strong support for the psychometric properties and construct validity of the PDSQ generalizing to the PDSQ-S. The MPAM-R has been validated in the French language by Laure (2007) and the PSDQ-S by Guérin, Marsh, and Famose (2003, 2004), following the steps described in the translating approach for psychological tests developed by Vallerand and Halliwell (1983) and Vallières and Vallerand (1990).

### 3.3 Procedure

Data were collected by student teachers during two successive school years (2012–2013, 2013–2014), in the classes of six Swiss student-teachers and two American student teachers. Data were collected at two different time points (with 8–10 weeks in between). For each data collection, all fitness tests and questionnaires were administered during a one-week period alternating fitness testing and questionnaires in order to account for potential fatigue.

### 3.4 Statistical Analysis

The SPSS Software was used for all analyses and have been categorised by country and gender for fitness, motivation, and self-concept variables. Three 2 x 2 (country x gender) Multivariate Analysis of Variance (MANOVA) procedures to test statistical differences between groups were conducted with follow-up univariate Analysis of Variance (ANOVA) procedures for post-hoc analyses that included a Bonferroni Correction to adjust the alpha level ( $\alpha = .01$ ).

## 4. Results

Table 1 presents the descriptive statistics for country and gender main effects for each of the dependent variables.

Table 1. PEERS Project 2012–14\_Descriptive Statistics for Fitness, Motivation, and Self-Concept Variables.

<i>Fitness</i>	<i>Country</i>		<i>Gender</i>	
	<i>Switzerland</i>	<i>United States</i>	<i>Female</i>	<i>Male</i>
PACER	45.76 (22.65)*	36.61 (20.69)	32.97 (17.17)	50.22 (20.96)*
Curl-ups	50.35 (26.18)	57.69 (20.39)*	46.31 (25.60)	55.79 (24.08)*
Push-ups	17.26 (12.23)	13.97 (8.77)	12.91 (10.33)	18.67 (11.77)*
Sit-Reach	11.91 (12.85)	12.67 (7.40)	15.45 (11.44)	9.97 (11.47)*
BMI	20.37 (3.39)	20.53 (4.56)	20.59 (3.92)	20.29 (3.57)
<i>Motivation</i>				
Interest/Enjoy	5.02 (1.44)	5.59 (1.28)*	4.71 (1.55)	5.48 (1.23)*
Competence	4.96 (1.42)	5.72 (1.76)*	4.84 (1.46)	5.38 (1.40)*
Appearance	4.61 (1.46)	4.42 (1.66)	4.38 (1.55)	4.68 (1.50)*
Fitness	5.27 (1.35)	5.89 (1.09)*	5.25 (1.31)	5.55 (1.31)*
Social	4.26 (1.27)	4.67 (1.23)*	4.30 (1.31)	4.42 (1.23)

<i>Self-Concept</i>	<i>Country</i>		<i>Gender</i>	
	<i>Switzerland</i>	<i>United States</i>	<i>Female</i>	<i>Male</i>
Endurance	3.71 (1.33)	4.19 (0.91)*	3.61 (1.20)	4.00 (1.26)*
Strength	3.93 (1.23)	4.38 (0.95)*	3.70 (1.24)	4.28 (1.09)*
Flexibility	3.52 (1.42)	4.75 (1.14)*	3.91 (1.40)	3.79 (1.49)
Body Fat	4.80 (1.73)*	3.48 (1.52)	4.21 (1.77)	4.65 (1.76)
Appearance	3.75 (1.39)*	2.77 (1.52)	3.18 (1.42)	3.71 (1.50)*
Phy. Satisfaction	4.23 (1.24)	4.91 (1.04)*	4.10 (1.42)	4.62 (1.18)*

*Note.* Mean (Standard Deviation). \*  $p < .01$ .

Wilkes Lambda was selected as the multivariate statistic as there were violations in the normality for all fitness, motivation, and self-concept variables (univariate Kolmogorov-Smirnov  $< .05$ ). Tabachnick and Fidell (2013) suggest that larger samples and group differences present challenges in normality due to errors in both skewness and kurtosis. To address normality review of expected normal probability plots was also conducted and results suggested minor deviations for group distributions. A bootstrapping procedure was also performed to correct for violations in assumptions homogeneity of variance and after the robust methods procedure (5 % trimmed mean) no violations were present for fitness, motivation, or self-concept variables. Results for the 2 x 2 MANOVA for fitness variables indicated that there were significant main effects for country  $F(5,681) = 10.648$ , Wilkes Lambda = .927,  $p < .001$  and follow-up univariate ANOVA's determined there were significant differences in the PACER and Curl-ups. Swiss middle school students (45.76) had higher PACER scores than did students in the US (36.61). Curl-ups scores for the US students (57.69) were greater than Swiss students (50.35). There was a significant main effect for gender  $F(5,681) = 20.181$ , Wilkes Lambda = .871,  $p < .001$  and follow-up ANOVA's determined that males were significantly greater for all fitness variables except BMI. There was also a significant interaction between country and gender  $F(5,681) = 4.805$ , Wilkes Lambda = .966,  $p < .001$ , as both Swiss and US males (Swiss = 52.89, US = 40.05) were significantly better ( $p < .001$ ) for



cardiovascular endurance than Swiss and US females (Swiss = 32.93, US = 33.07). US males (60.15), Swiss males (54.65), and US females (55.19) had significantly better abdominal endurance scores than Swiss females (42.42). Figure 1 provides a graphical representation of the significant interactions.

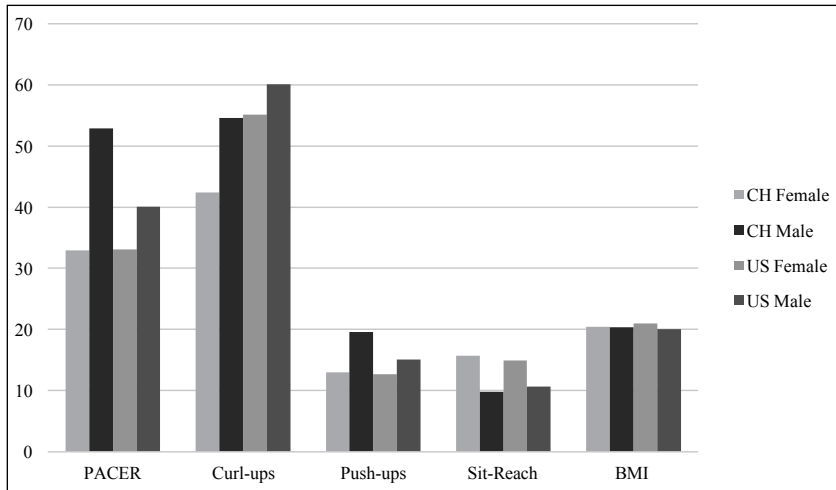


Figure 1: Country \* Gender Mean Scores for Fitness Variables.

The 2 x 2 MANOVA for motivation variables indicated that there were significant main effects for country  $F(5,763) = 19.413$ , Wilkes Lambda = .887,  $p < .001$ . Follow-up univariate ANOVA's determine there were significantly higher scores for US students on the interest-enjoyment, competence, fitness, and social sub-scales. American middle school students had higher perception for Interest/Enjoyment, Competence, Fitness, and Social subscales than Swiss middle school students. There was also a significant main effect for gender  $F(5,763) = 11.348$ , Wilkes Lambda = .931,  $p < .001$  and follow-up ANOVA's determined that males were significantly higher motives for physical activity on interest-enjoyment, competence, appearance, and fitness variables. There was no significant interaction  $F(5,763) = 2.847$ , Wilkes Lambda = .982,  $p = .015$ .

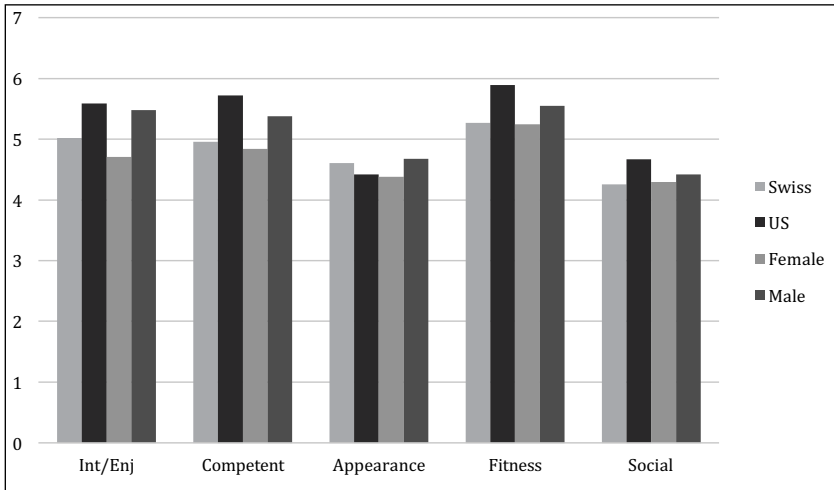


Figure 2: Country & Gender Mean Scores for Motivation Variables.

The 2 x 2 MANOVA for self-concept variables revealed a significant main effect for country  $F(6,732) = 61.072$ , Wilkes Lambda = .666,  $p < .001$ . Middle school students from the US had significantly higher perceptions of cardiovascular endurance ( $p < .001$ ), strength ( $p < .001$ ), flexibility ( $p < .001$ ), and physical satisfaction ( $p < .001$ ) as compared to the Swiss students who had higher scores for body fat ( $p < .001$ ) and appearance ( $p < .001$ ). A significant main effect for gender  $F(6,732) = 7.629$ , Wilkes Lambda = .941,  $p < .001$  was also present as males had significantly ( $p < .01$ ) higher perceptions of endurance, strength, appearance, and physical satisfaction. Finally, there was a significant interaction  $F(6,732) = 3.918$ , Wilkes Lambda = .969,  $p < .001$  and follow-up ANOVA's determined significant differences for strength ( $p < .001$ ) and body fat ( $p < .01$ ). US males (4.45), US females (4.32), and Swiss males (4.23) had significantly higher ( $p < .01$ ) perceptions of muscular strength than did Swiss females (3.41). Swiss males (5.00) and Swiss females (4.49) had higher perceptions ( $p < .01$ ) of body fat than did US females (3.63) or US males (3.32). Figure 3 represents the country gender interactions for self-concept variables.

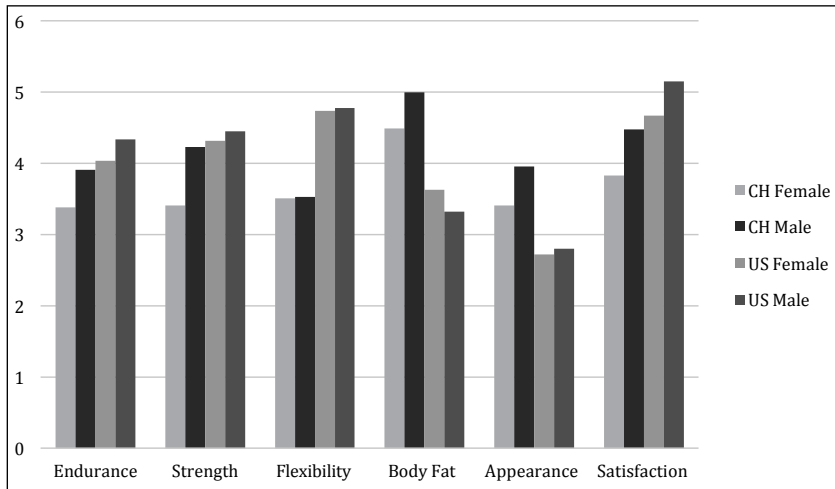


Figure 3: Country \* Gender Mean Scores for Self-Concept Variables.

## 5. Discussion

### 5.1 Physical fitness among Swiss and American students

We hypothesized that Swiss middle school PE students would have higher fitness levels than US students. This hypothesis was partially supported. No significant differences between the Swiss and US middle school students were found for the push-ups, sit-and-reach, and BMI; however, differences were shown for the PACER scores and curl-up tests. The Swiss students had higher PACER scores than the US students, which supported our hypothesis. Gender differences were also evident. Swiss and US males had higher PACER scores than females in both countries. The US students had higher curl-up scores than the Swiss students, which did not support our hypothesis. US males and females and Swiss males had higher curl-up scores than Swiss females. In this

study, we have used US fitness tests (*Fitnessgram*). US students are more familiar with these tests, and that may explain why our hypothesis is only partially supported.

One possible reason for the differences in cardiovascular endurance is the amount of time students are physically active throughout the day. The current physical activity recommendation for school-age youth is 60 minutes or more of moderate to vigorous physical activity (Strong & al., 2005). However, many children in Switzerland and the US are not meeting that recommendation due to various reasons such as lack of time spent in PE overall, lack of time spent in MVPA in PE, and lack of physical activity outside of PE classes and sports due to other factors such as screen time.

According to results from the current study, it is vital that US and Swiss children are not only physically active, but that those activities should emphasize cardiorespiratory fitness in the US and abdominal/core training in Switzerland. Successful cardiorespiratory fitness programs typically have involved continuous moderate to vigorous activities for 30 to 45 minutes duration for three to five days per week (Strong & al., 2005). Swiss PE teachers should also incorporate more abdominal/core training two to three times per week in PE classes.

Ideally, students should participate in PE classes every day. However, this is rarely the case due to school budgets and limited resources. Therefore, PE teachers should make an efficient use of the time students spend in PE classes by ensuring students spend the majority of the class period in MVPA. Girls should be especially encouraged to participate; research has shown that on average, girls spent an average of only 37.9 % of PE classes engaged in MVPA (McKenzie & al., 2006). McKenzie & al. (2006) found that PE programs that include the provision of equipment, staff training, a teaching assistant, and an updated curriculum can be successfully implemented in US middle schools to ensure that participants spend at least 50 % of the class engaged in MVPA.

### *5.2 Physical activity motivation among Swiss and American students*

We hypothesized that Swiss middle school PE students would have greater physical activity motivation than US students. The hypothesis was not supported, as results showed the US students had significantly higher scores on the interest-enjoyment, competence, fitness, and social subscales than the Swiss students. Gender differences were also apparent; results showed males had significantly higher motives for physical activity on interest-enjoyment, competence, appearance, and fitness variables.

Overall, the motivation for physical activity of students in general was high, and results support previous research that emphasized youth are motivated to be physical active for multiple reasons such as enjoyment, competence, fitness, and to socialize with/to meet friends (Ewing & Seefeldt, 1996). In their review of the correlates of physical activity and sedentariness in youth, Van der Horst, Paw, Twisk, and Mechelen (2007) revealed similar positive associations were found; specifically associations between physical activity participation and gender (male), self-efficacy, goal orientation/motivation, and physical education/school sports. PE teachers (especially in Switzerland) should focus on creating a positive motivational climate and structure classes to encourage fun and skill building, increase fitness levels, and allow for positive social interactions. The lower motivation scores may be explained by the assessment modalities in PE. The first results of a current comparative study in three states of Switzerland (Vaud, Jura, Geneva) showed that the students' intrinsic motivation scores in PE were lower in the state of Vaud (PE without grades) compared to the state of Jura (PE with non-summative grades) and Geneva (PE with summative grades; Allain, Deriaz, Voisard, & Lentillon-Kaestner, 2015). Additional considerations should also be taken to ensure girls are physically active throughout the class period in both the US and Switzerland.

### *5.3 Physical activity motivation among Swiss and American students*

We hypothesized that Swiss middle school PE students would have greater self-concept than US students. This hypothesis was partially

supported. Swiss students had significantly higher scores for body fat and appearance than US students; however, US students had significantly higher perceptions of endurance, strength, flexibility, and physical satisfaction compared to the US students. When compared with the actual fitness results, these results showed a conflict with the perceived fitness variables. Although US students perceived their endurance to be higher than the Swiss students, the PACER scores showed the opposite. Although not significant, the mean BMI for the Swiss students was slightly below the mean BMI for the US students; however, the Swiss students had higher perceptions of body fat than US students. In Switzerland, the PE teachers' expectations may be too high, having negative effects on Swiss students' physical self-concept.

Gender differences in self-concept were also revealed. US males and females and Swiss males had significantly higher perceptions of muscular strength than Swiss females. It is common for males to have a higher perception of muscular strength than females, due to actual changes that are occurring. During the middle school years, males and females may be entering puberty, and in adolescence boys gain additional muscle mass while girls gain more fat than muscle compared to boys (Haywood & Getchell, 2014). Middle school is also a period of time when social evaluation by peers becomes more important than in early childhood.

Both Swiss males and females had higher perceptions of body fat than US males and females. Body image disturbances are common among children, oftentimes even if the child has a healthy body composition (Smolak & Thompson, 2009). PE teachers should educate students about a healthy body composition, and ensure they are structuring classes and giving positive feedback to emphasize a healthy body image.

#### *5.4 Limitations and perspectives*

There were several limitations of this study. First, BMI data were calculated using self-reported height and weight measurements of the

participants. Future research should include other means of measuring body composition.

Second, samples for this study were drawn from limited schools and only middle school children were included. The US sample was different from the Swiss sample (less school, less students). Therefore, results may not be generalizable to other areas of Switzerland and the United States or other grade levels. Future research should include other areas of the countries and additional grade levels for a more holistic look at the current issues.

Future research should also include examining additional demographic variables such as race/ethnicity and socioeconomic status, as research suggests there are differences in fitness and self-concept among individuals from different race/ethnicities and socioeconomic statuses (Pate, Mitchell, Byun, & Dowda, 2011).

Finally, there was not an attempt to measure or explain cultural factors that might have influenced results between the Swiss and US samples. There were differences in class sizes, cultural norms, physical education curriculum delivery, and learning expectations. Additional efforts should be made to measure and collect data on variables that contribute to cultural differences. Participants included students from middle schools PE classes with various PE teachers and PE student-teachers in both countries. Future research should also include classes taught solely by a PE teacher. The influence of the teacher on a student's fitness, motivation, and self-concept is also another variable that would be beneficial to measure.

## 6. Conclusion

In conclusion, there are both country and gender differences between middle school students in PE programs in the United States and Switzerland. The information gained from this study can benefit PE programs in both countries. PE teachers in Switzerland should not be

too exigent on students' physical condition level and increase enjoyment and competence in sport and exercise practice. PE teachers in the US should help students to improve their cardiorespiratory endurance and be vigilant on negative appearance remarks. Nevertheless, further studies on larger samples should be carried out to confirm these results. In addition, beyond the research project, this international collaboration has allowed both teacher educators and students to discover other PE teaching practices, other PE teaching conceptions, which has been highly beneficial for their professional development.



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## Chapter 14: Intercultural Competence and Teaching Diverse Learners

### **Abstract**

Pre-service science teachers from the USA and Switzerland work in a collaborative inquiry team to explore effective methods for engaging diverse pupils. Participants construct, teach and refine one lesson over the course of six cycles; each cycle involves one participant teaching the lesson in one school serving diverse learners. During lesson instruction, other team members collect pre-determined data on student engagement and comprehension. Research on participants explores how involvement in this project affects intercultural and instructional competencies. Data suggest that individual participants experience a shift in thinking from traditional teacher-centered ideals to a more student-centered approach. Planned group actions (i.e. instructional strategies) mirror this shift as lessons become progressively more student-centered. Post-project participants describe the importance of connecting lessons to students' lives and culture, a consideration not made prior to the program. A focus on international collaboration and marginalized pupils has provided insight into the development of teaching and intercultural competencies of pre-service science teachers.

### 1. Project Rationale

Aligned with the purpose of PEERS, to create a global community of culturally competent teachers prepared to confront the challenges of educating in diverse societies, the HEP/HSU PEERS Science Project

seeks to provide preservice teachers with opportunities to understand effective methods for meeting the needs of diverse learners.

The beliefs that teachers hold may directly affect their practice; including their expectations of students and the way they design learning opportunities (Mansour 2009, Pajares 1992, Hashweh 1996). Teacher beliefs develop through years of observation of teaching, as students themselves, immersed in the context of their microcosm of American or Swiss culture. For example, if they are raised in an area where Native Americans on the local reservation are thought to be drunk, violent, and on the government dole, or if there are views that immigrants do not contribute positively to society. Such beliefs may affect what they believe Native students or immigrants in their classroom can do (Mansour 2009, Shulman 1987, Lortie 1975). Teacher beliefs about their students and school are often developed prior to teacher training and have been shown to be resistant to change or influence. Often an idealism and openness to teaching approaches not observed throughout a lifetime of schooling emerges during university teacher preparation, only to disappear when the complex environment of the first years of teaching are encountered (Zeichner and Tabachnick, 1981). Pre-service teachers in their courses focus on theoretical knowledge, teaching methods, and classroom practice that have been shown to better impact student understanding. But, new practicing teachers either stick with or revert back to what they have seen as students themselves, unable to realign their entrenched beliefs about school and the classroom with the new knowledge that their teacher preparation courses have provided (Mansour 2009).

Teacher-centered instruction in which the teacher is the authority and the students are passive recipients of knowledge is not as effective at providing opportunities to learn beyond memorization as student centered instruction, where students are active seekers of knowledge and the teacher is the facilitator (Anderson 1997, Darling-Hammond 1996). Pre-service teachers may “know” student centered instruction is superior from their teacher preparation programs, but do not implement it or they try and then abandon this type of teaching during their first years of practice (Simmons & al. 1999, Leuhmann 2007, Felix & Saujat 2007).

In a comprehensive study involving nine teacher training institutions, and following 116 new science and math teachers for their first three years of teaching, Simmons and colleagues suggested two reasons for this state of affairs in teacher education: 1) the adult centered culture of schools is too strong (i.e. lack of support for student centered teaching among administration and faculty, new teachers have little experience or knowledge of this practice to “defend” it, and new teachers do not see it in practice in schools) and 2) the lack of multiple and meaningful opportunities to practice and experience student centered teaching or learning in their teacher training programs. Pre-service teachers may only hear or read about student-centered instruction in their teacher preparation programs, never practicing it nor experiencing it themselves. Leuhmann (2007) also found that pre-service science teachers who have not had meaningful experiences with reform-based teaching (i.e. participation in and practice with inquiry learning and teaching which is student-centered, rather than gaining understanding from a textbook or lecture) are “likely to lack buy-in” and confidence in their abilities to enact this type of teaching, reducing the probability that they will be used. The “interlacing” between the techniques of management and the pedagogic necessities are one of the main characteristics of a teacher’s job, and negotiating these are often difficult, resulting in some loss of fidelity (Felix & Saujat 2008).

Understanding these realities, we created a PEERS project for pre-service teachers to develop a strong understanding of student centered teaching and its effects on youth. Additionally we wanted to provide opportunities for pre-service teachers to confront their ideas and beliefs about diverse students and explore how to better address their needs, specifically. The following ideas guided the creation of the HEP/HSU Science Project for pre-service teachers: 1) beliefs about teaching are entrenched in pre-service teachers and develop from their own prior schooling experiences (Zeichner & al. 1987, Lortie 1975); 2) people can change their ideas from contrary experiences, or when confronted in a salient manner, with contrary evidence regarding their existing beliefs (Nespor 1987, Pajares 1992, Marx and Moss 2001); 3) collaborative inquiry into teaching provides an opportunity to gather and reflect on

data about student understanding and may assist pre-service teachers' examination and alteration of their existing beliefs (Fendandez 2010, Ricks 2011); 4) asking an international collaborative inquiry group of pre-service teachers to focus on creating a lesson to meet the needs of diverse and marginalized learners may encourage the group to confront their ideas, perceptions, and beliefs about diverse learners and teaching (particularly teacher-centered instruction) in general (Fernandez 2010, Bryan and Atwater 2002); and 5) providing multiple opportunities for the group of student teachers to teach in diverse and culturally unfamiliar settings may assist pre-service teachers in developing new lenses through which they can confront their ideas and perceptions about "others" (Marx and Moss 2001, Bryan and Atwater 2002), particularly when they plan, teach and reflect in an international group.

Furthermore, knowing that beliefs about teaching are central to the practice of teaching, yet are entrenched in a foundation of "doing school" in a teacher centered manner, we wanted, as teacher educators, to affect change in these beliefs to an approach that may be better for youth who are students in the diverse secondary schools of the United States and Switzerland.

The HEP/HSU Science Project involves an international collaboration between pre-service teachers using an inquiry approach (i.e. reflective, collaborative, and investigative) based on the Lesson Study model. Lesson Study is a professional development model used widely in Japan that provides an opportunity for collaborative and individual reflection about the practice of teaching through the collaborative study of one lesson. Lesson Study participants are active in planning a lesson, collecting and analyzing data from the lesson observations, and refining the lesson based on group reflection. Multiple perspectives are likely to be present when this is internationalized, creating rich opportunities for reflection.

## 2. Project Description and Participants

Three science undergraduates interested in teaching from HSU and three science student teachers from HEP are grouped and given the task to create one lesson on a particular topic: invasive species, genetics or climate change. Guidelines are established that the lesson must especially engage marginalized learners (i.e. those traditionally ostracized by the school system such as Native American students in the U.S. or political refugees from Africa or Kosovo or general immigrants in Switzerland). Furthermore, the inquiry team of pre-service teachers must collect data from high school pupils about their understanding of the topic focusing the lesson and their engagement in the lesson.

Using these guidelines, the team collaboratively plans a lesson, including evidence that will be collected during the lesson, to determine student understanding and engagement. One member then teaches the lesson, while the others collect data about student understanding and engagement. After the lesson, the group members analyze the data together and use it to refine the lesson to further meet the goals of increasing student understanding of the topic and providing opportunities to increase the participation and interest of all students, especially marginalized learners.

Each member of the team then teaches the lesson once. The lesson is taught six times to six different classes in approximately four different schools. Three of the lessons are taught in the U.S. and three in Switzerland. The Swiss pre-service teachers travel to the U.S. to observe lessons in the fall and the U.S. pre-service teachers travel to Switzerland in the spring. Care is taken to choose schools in both countries where traditionally marginalized pupils attend. Varied classrooms were utilized: one where the students are all non-native speakers of the respective language (i.e. French), another in which a high percentage of students are classified as learning disabled, a third where a high percentage of students live in communities that have experienced cultural trauma (i.e. Native Americans), and also one with a high percentage of students who are immigrants.

Table 1: Project Timeline.

	<i>Time</i>	<i>Description</i>
<b>Planning Meeting</b>	Summer	Supervisors meet face-to-face and plan program domain of exploration and learning tasks
<b>Pre-service Student Selection</b>	Late Summer/ Early Fall	Select students using interviews
<b>Pre-service Student Contact (Online)</b>	Early Fall	Using Skype, google.chat, email and Facebook to plan lesson
<b>HEP to HSU</b>	Late Fall/Early Winter	Observe in U.S. schools, plan and teach and refine lesson
<b>Pre-service Student Contact (Online)</b>	Winter	Using Skype, google.chat, email and Facebook to refine lesson
<b>HSU to HEP</b>	Spring	Observe in Swiss schools, plan and teach and refine lesson
<b>Pre-service Student Contact (Online)</b>	Late Spring	Using Skype, google.chat, email and Facebook to write student report

### 3. Faculty Research Question

Faculty research centers on the question: How does participation in the PEERS Project impact intercultural and instructional competencies, especially related to meeting the needs of diverse learners? Given the mission of the overall PEERS program to build a global community of culturally competent teachers, understanding how the project impacts the thinking of pre-service teachers in relation to these outcomes seemed pertinent. At the time of this writing, three PEERS groups had completed the HEP/HSU Science project. These groups were labeled A, B and C and group A was the first group to participate.

Several data sets have been used to measure intercultural and instructional competencies. These include individual interviews, the Draw-a-Science-Teacher-Test (DASTT), completion of a Teaching Scenario, and faculty observation of collaborative meetings, lesson implementation and group presentations.

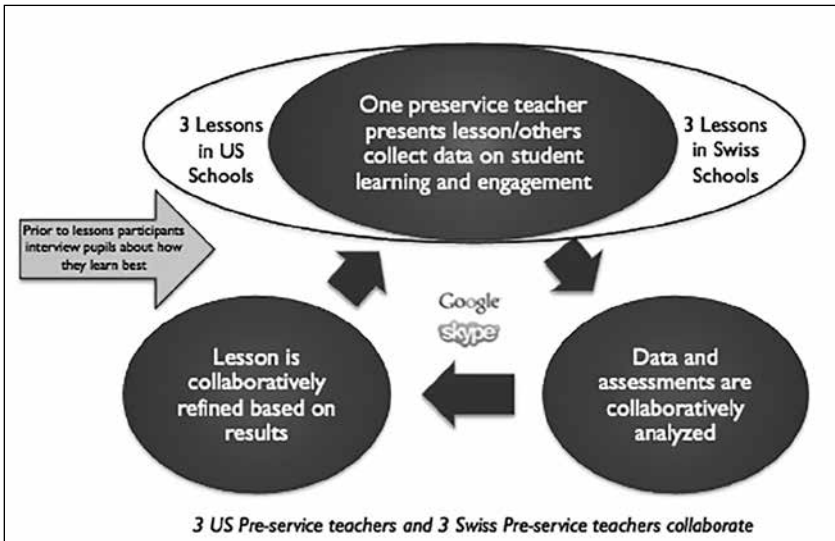


Figure 1: HEP/HSU Science Project Participant Organization.

#### 4. Methods

Multiple data sets are used to measure and observe the instructional and intercultural competency of the participants. As participants plan, collaborate and discuss their lesson we observe their meetings, taking field notes of key conversations and decisions. Several documents are requested from the group including lesson plans and instructional materials. Each lesson taught in U.S. or Swiss schools is observed and

recorded through field notes by at least one faculty advisor, if not both. Additionally participants give a final presentation summarizing their learning to a Swiss university level science instructional methods class. Field notes are taken during the presentation and for Groups B and C this presentation was recorded.

Each participant is interviewed three times. Interview questions center on group process, ideas about the meanings and impacts of intercultural competency and perspectives and beliefs related to instructional methods for diverse learners. Interviews occur pre-program, mid-program after the Swiss to U.S. exchange but prior to the U.S. to Switzerland exchange and post-program, upon completion of all activities.

Two additional methods are used to monitor ideas about teacher-centered versus student-centered beliefs. In the first, participants are asked to read a scenario about lesson planning. Participants are asked to answer a question in writing about how they would approach the situation. This assessment occurred in Group C only, at pre-program and post-program times. Second, a method developed and utilized in several studies to investigate pre-service teacher beliefs of teacher vs. student centeredness is used (Thomas & al. 2001, Markic and Eilks, 2010). Participants are asked to "Draw a typical day of teaching in your future." To control for varied artistic flair and/or abstract representations, participants are also asked to write a short description of what the students are doing and what the teacher is doing. HEP/HSU Science Groups B and C completed these drawings prior to program participation and upon program completion.



Table 2: Data Sets and Alignment to PEERS Group.

<i>Group</i>	<i>Interviews and Observations</i>	<i>DASTT</i>	<i>Scenario</i>
	<b>Measured Attribute:</b>		
	1. Instructional Competence 2. Intercultural Competence	1. Instructional Competence	1. Instructional Competence
	<b>When Measured:</b>		
<b>A (2011–12)</b>	Pre-Mid-Post		
<b>B (2012–13)</b>	Pre-Mid-Post	Pre-Post	
<b>C (2013–14)</b>	Pre-Mid-Post	Pre-Post	Pre-Post

## 5. Results

Data trends across each data set indicate increased intercultural and instructional competencies. Interview data revealed thoughts about how to meet the needs of diverse learners.

Participants in Group A described this in the following manner:

The ways that students learn are affected by their culture. We need to find ways to make lessons relevant to the students life and cultural experiences.

Different sets of students need different methods.

We need to assess and incorporate the prior knowledge and life of students.

Group B also expressed specific ideas related to how to meet the needs of diverse learners:

If you want to teach something you must do it in a way that students connect to it [...] who they are needs to be considered.

The teacher needs not to be at the center of the lesson. I need to step back and let the students learn independently.

Let the students make mistakes, from them they learn better. They need to figure it out for themselves.

Group C's learning seemed to focus on relevance and emotional safety, in regards to diverse learners. One participant summarized this in a particularly salient manner during the final presentation:

I think one of the main things that I learned was how necessary it was to have a relationship with your students and make your classroom a safe space, especially for marginalized learners who may not feel safe or accepted in society as a whole. A lot of times in classrooms that dynamic can sort of be mirrored so a marginalized learner may come into that classroom and may still not feel accepted. They may not feel like they belong there or that they can't relate to their teacher or that their teacher cannot understand them and doesn't know what they need. For me being able to talk to your students and communicate with them and find what this individual needs to be able to succeed was really important. I noticed that when we began this project that we had this idea about teaching, as if it was about us deciding what they needed to learn what we wanted to tell them and what we wanted to get from it, but by the end of it I started to think maybe it's more important to let them decide how this is useful to them. And to empower them and let them shape the direction of their learning. I don't know that we did a good job of that in this project, but I think we were starting to understand that more.

The participants in each group also discussed their intercultural competence, both related to diverse learners in their classrooms and their experiences with their international teaching peers.

Participants from Group A noted the following in regards to language learners in schools:

When I observed the lessons in French I realized I don't get any of it and this would be horrible! It made me think of English learners in classrooms. This is very crucial; you must go out of your way to understand if the students are taking in the information.

Group A participants also reported initially being unsure how to "*start conversations*" with the participants from the exchange, with one participant noting that "*Communication initially was a struggle for me. I*

*was afraid of offending the others. Then I realized we all have the same goal.” This same participant later reported that the program “changed my mind about being scared of working with different people. I realized they were just like me.”*

Group B noted learning from each other:

The (other PEERS) students were more concerned about cultural issues in the classroom. This was constructive for me because they saw certain things I could not see about my students and now I see them.

Participants in Group B also related intercultural competence to their teaching:

I need to make sure the material can be connected to students and their culture, so I will have to understand what those cultures are and make sure they can come in and be engaged with the material.

Participants in Group C were specifically focused on making content relevant to student’s lives and culture:

We need to make the scientific content related to the reality of the pupils like a game of life.

The DASTT provided insight into the images of teaching the participants held pre and post project. In general, the lower the score on a scale of 1–13 the more student-centered the drawing was considered. The average pre-program score (n=9) was 8.7 and the average post-program score was 2.8 (n=12) (see Figure 3). Figure 2 illustrates typical changes seen over time in one participant’s images (Group B). The pre-program drawing is also typical of those seen across groups: the teacher being the active part of the image and at the front of the room while the students are seated and listening. The pre-program drawing (Figure 2) scored 10 and showed the teacher standing in front of the class reading from a book. Students were seated in desks in a rounded row, listening, with several students raising their hands.

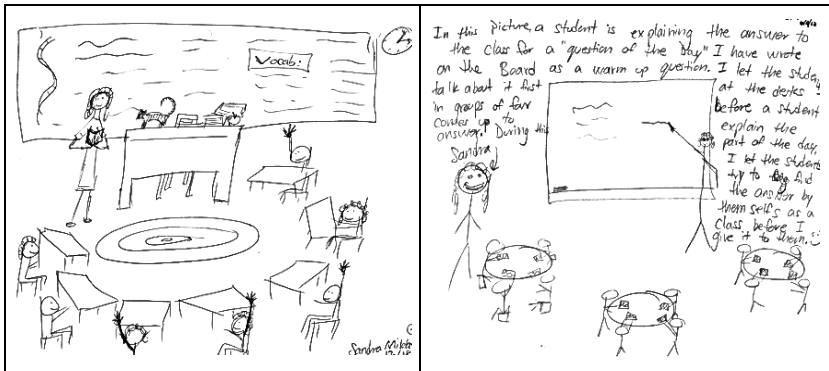


Figure 2: Pre-PEERS Drawing (Score 10) and Post-PEERS Drawing (Score 3).

This drawing would be classified as teacher-centered using the scoring rubric developed by Thomas and colleagues (2001). The post-program drawing scored a 3 on the Thomas & al. rubric and showed the teacher standing to the side of the room and seated students (grouped at tables) listening to a student explaining a concept at the front of the class.

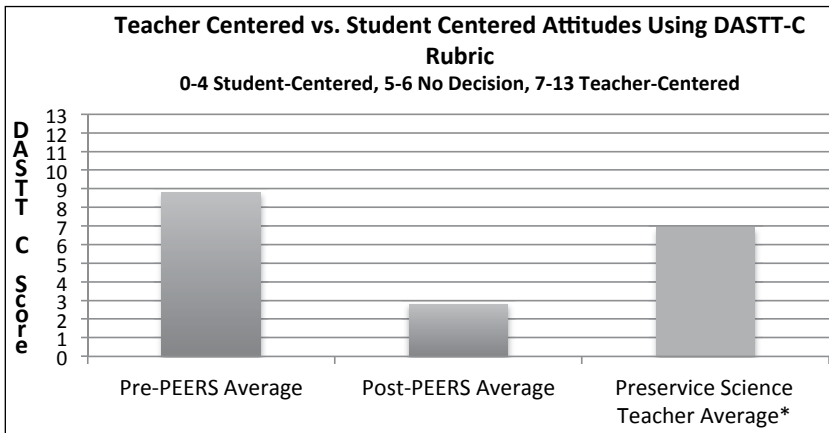


Figure 3: Pre and Post PEERS Average Scores.

\*Pre-service science teacher average scores (n=200) from Markic and Eilks 2010.

Lesson observations showed that the first lessons of all of the groups were focused on the teacher talking and providing information through a Powerpoint, the students spending a large percentage of the instructional time listening and the opportunities to learn and be assessed being focused mostly on student writing answers to questions. The first lessons often attempted to cover a tremendous amount of factual information.

The final lessons were diverse. In Group A the final lesson was a short Powerpoint interspersed with opportunities for students to discuss their preconceptions and develop their definition of an invasive species in cultural relevant ways. The final learning opportunity and assessment asked students in groups of 2–3 to create an invasive species (i.e. drawing) and define it's characteristics in writing.

Group B's final lesson involved embedded questions in a Powerpoint that required students to converse with their partner then write their own answer and finally discuss as a class. Students then completed a puzzle activity and created a labeled diagram to demonstrate their understanding.

Group C's final lesson involved the students solving a mystery using clues using a game format. Pupils were grouped in sets of 2–3 and were given different clues to a related mystery (i.e. climate change), becoming experts on their particular scenario. The teacher gave a short introduction to the lesson and then moved from group to group asking questions. At the end of the lesson each "expert" group of pupils held a "conference" and reported their findings as a class.

Across the groups, lesson progressions showed reduced teacher talk and more student interaction. Additionally, student interaction became more diverse, moving from 1–2 students asking and answering questions to all students answering questions or participating in the lesson in multiple modalities (i.e. speaking, writing, kinesthetic, critical thinking etc.). Figure 4 summarizes these changes for Group B.

A Teaching Scenario was proposed to the participants of Group C pre, mid and post program. Participants were asked to note the questions they would ask themselves prior to lesson planning and to briefly outline the learning tasks they would plan. Prior to PEERS participant the questions the participants asked themselves focused on how much time they had

to teach, what background knowledge the students had and what could be done by the instructor experimentally to pique interest. Post program participation the questions centered around what the students would want to know about the topic, how the topic could be made relevant to student lives, “what obstacles to learning” there might be, how the students could apply the content and what the students already knew about the topic that could be connected to the lesson.

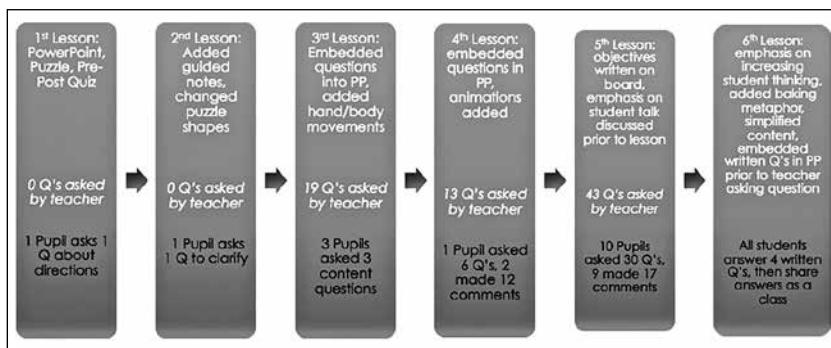


Figure 4: Faculty observation results of PEERS Group B Lesson Progression Over Time with corresponding data on pupil response.

Pre-program lesson outlines all included a lecture (“the teacher would give a lecture for half a class period”). There were some ideas about utilizing an activity or a demonstration (“prepare a short experiment – 2–5 minutes – with a chemical reaction with an enzyme to the same reaction without the enzyme”) but the amount of time they were planned, in general, was shorter than the amount of time planned for lecture. Post-program responses focused on the students being active. For example one participant noted he would “Hand off the work to the students, let them accomplish something”. Another noted she would plan “applied student projects” followed by a “presentation extravaganza/festival of learning”.

## 6. Conclusion

The objective of the PEERS Science Project is to prepare preservice teachers to better meet the needs of diverse learners. We believe the best methods to make science content accessible to all learners is to provide opportunities to learn which are explicitly relevant to student's lives and culture and that allow students to construct their own understanding; making meaning of science content in context (Zeichner 1993, Ladson-Billings 1993).

In relation to teaching competency, Pre-PEERS trends across Groups A, B and C suggested that the participants held beliefs about teaching in which the teacher is at the center of instruction and "presents" the content to the class. The students' role is to listen and accept the material. Pre-program interviews, DASTT-C drawings, the Teaching Scenario and lesson observations all provided evidence that the participants, in general, understood and believed that teaching was something that was done to students. During the program we witnessed all three groups (A, B and C) struggling with this conception. Their early lessons indicated, through the data they collected and our observations confirmed this, there was little learning occurring among the public school students who were also not uniformly engaged. When the PEERS participants would plan and try another method, such as inserting a discussion in which all students were expected to contribute rather than a lecture (PEERS Group B), they experienced overall increased pupil engagement and content understanding. When they focused the lesson on culture or place (e.g. PEERS Group A decided to use local and culturally important examples of invasive species that students knew) they found that there was more widespread participation. The group also found that when they gave the students freedom to express their own ideas that they themselves learned about their students in important ways (e.g. Native American students clearly demonstrated that they saw invasive species as negative and often gave them human-like characteristics while the immigrants to Switzerland made connections that invasive species could have positive effects and connected this to their immigrant experience).

The realization, that pupils work could reflect their cultural experiences, was a powerful one for PEERS Group A. Discovering that students bring their culture and experience to their work at school, and that providing an opportunity for the pupils to express this increased learning and engagement, was important to Group A. All members of this group indicated thereafter that learning must be connected to culture and place noting that the “*ways that students learn are affected by their culture*” and that they “*must find ways to make it relevant to their life and cultural experiences*”. These key learnings and experiences indicated not only a clearer understanding of the importance of student centered experiences, but an increased understanding of how to meet the needs of diverse learners through incorporating opportunities for pupils to connect with the content in culturally relevant ways.

Each PEERS group (A, B and C) planned lessons that progressed over time from teacher centered lectures to more student centered approaches, indicating that participants were coming to understand that placing the students at the center of instruction increased learning and engagement. This conclusion was also supported in data from the DASTT-C, which showed scores decreasing over time. Most pre-program drawings showed a classroom set-up with the teacher at the center of the drawing. Some final drawings showed dramatic differences. Two participants moved the classroom environment to outside of the school, on the beach or in the forest. They indicated in their explanation that students needed to apply their learning in a real context and that the teacher was there to facilitate, not direct. This implied that not only were participants seeing themselves more as a facilitator, but also that learning should be applied in context.

Drawings also provided evidence that Group A, B and C participants had begun to imagine that students’ family, culture and ethnicity should be included in their vision of teaching. For example, one participant’s final drawing included “foundations” of teaching at the bottom of the drawing. She envisioned these foundations as students’ “interests, home, family, values, ideas, morals, (and) experiences”. Her first drawing did not depict student interests, rather it portrayed the knowledge to be learned as being directed by the teacher.



Not all data showed that participants moved completely into the realm of student-centered ideals. Although all drawings over time decreased in score, indicating a shift in beliefs about who is the director of knowledge in the classroom, some did so more dramatically than others. This individual movement, or lack of it, was also found in other data trends such as interviews and lesson observations. Some participants seemed to hold more surface level beliefs about putting students at the center of instruction or how to maintain relationships with diverse students. For instance, some interview data suggested that the participant felt that student-centered teaching was important, but their drawing still indicated that the teacher was the director of knowledge and learning. Additionally, some participants heard and participated in group understandings, but individually struggled to internalize them. It seemed for some of the participants that they were wavering in their ideas, depending on the data source. One participant heard the others discussing the importance of student-teacher relationships and creating a comfortable environment for all students, especially marginalized learners, yet he seemed uncomfortable expressing this view himself. Additionally, he struggled to conceptualize what that might look like and, after teaching his lesson, admitted that perhaps his discomfort affected the student outcomes. While this may be an important learning in itself it provides insight into the internal struggle that new teachers often feel between what they know works (in this case connecting with students) and what they are currently capable of. Over time participants in the PEERS project demonstrated different levels of growth in terms of intercultural competency and teaching competencies.

In relation to cultural competency between US and Swiss counterparts, the idea of “others” seemed to shift, particularly among the US participants. US students reported that early in the collaboration they were afraid to “offend” Swiss group members. Talk within the groups was sometimes tentative or guarded, with missteps in communication that needed faculty mediation. Some US participants expressed exasperation as they struggled to understand the direct communication style of their Swiss counterparts. Swiss participants reported frustration and surprise at the effort group communication required. However, over

time as the groups collaborated on a common goal and continuously reflected, participants became more at ease with each other. One US participant noted that the project “*changed my mind about being scared of working with different people. I realized they were just like me.*” All groups were able to work through their differences and reported the desire for continued collaboration with their international counterparts. Some participants noted that the different perspectives on addressing the challenges of teaching were important and also necessary for meaningful solutions.

Overall the PEERS Science Project collaboration between the University of Teacher Education of State of Vaud and Humboldt State University was effective at providing opportunities for pre-service teachers to learn effective methods for instructing diverse learners and interacting with diverse people. Data repeatedly showed that participants were increasingly more student-centered in their beliefs and in their actions (Table 3), working to allow pupils to make meaning of content in ways that made sense to them (i.e. culturally relevant or applied in context or both). Additionally, participants seemed to shift, albeit at different levels, their understanding of teaching and interacting with diverse people, both pupils and peers. Data suggested (Table 3) that participants were more understanding of what it was like to be a language learner, why cultural connections in curriculum was important and that strong relationships and safe classrooms were key to providing opportunities to learn for diverse people. Their lesson progressions also showed their attempts to put these beliefs into action. All participants recognized that the PEERS project was important part of their professional and personal journey. As one early PEERS Science participant simply noted in her final interview “*PEERS changed my life.*”





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## Chapter 15: Teaching Urban Ecology in Schools in Switzerland and the United States: Considering the Design of an Ecodistrict

### **Abstract**

This PEERS Project involved faculty members and students from HEP Vaud and Lesley University during the academic year 2011–12. Due to the very different profiles of the participating students, the project was designed as follows: the Swiss students developed an interdisciplinary teaching unit focused on the topic of Ecodistricts and taught it to their senior high school students in Geography and Biology. The American students worked on an adaptation of this teaching unit for much younger pupils (2<sup>nd</sup> grade and 4/5<sup>th</sup> grades). Both teams also developed teacher’s guides for their units. Highlights of the collaboration were the discussions about the students’ different visions of sustainable development, urban ecology, and ecodistricts, and about the educational and methodological approaches of teaching education for sustainable development with younger pupils or high school students. The chapter gives an overview of both teaching units’ main features and of the benefits and challenges of the collaboration.

### 1. Introduction and Context

Due to its interdisciplinary nature, the topic of urban ecology offers broad opportunities as part of teacher training, since it has to be approached via methods that derive as much from the natural sciences as from the human and social sciences, all while taking into account the implicit or explicit value systems that underpin the area’s different epistemological concepts

(Audigier, Fink, Freudiger & Haerberli, 2011). Working on a topic within urban ecology also adheres strongly to a trend that has characterized curricula for over two decades: the growing importance accorded to learning objectives that respond to social demands by highlighting the educational dimension of studies, and the social issues considered to be a priority (Vergnolle Mainar, 2011), while remaining mindful of the expectations of the world of work (Hertig, 2017). Teaching urban ecology in the context of schools may for example be situated in the context of Education for Sustainable Development (ESD), but this is not the only path. No matter how it is presented, covering such a topic, which is both interdisciplinary and linked to sensitive social issues, requires demanding teaching considerations that represent a serious challenge for student teachers in the early part of their training. A challenge that the students involved in this PEERS project dealt with in a remarkable way, by focusing their work on a single aspect of urban ecology, the design of an ecodistrict. As urban ecology is a very broad and complex scientific field, it was not possible to come up with a teaching-learning unit that could cover all its aspects. A decision was therefore made to focus on the issues linked to the design necessary for developing an ecodistrict – a topic that allowed notably for fieldwork to be included in the teaching unit, and which also allowed for a very interesting comparison of the student teachers' views of urban ecology and the relationship between man and nature.

This chapter looks at one of the projects that ran during the first year of the PEERS program (academic year 2011–12). Atypical in many ways, this project brought together students and professors from Lesley University (Cambridge, Massachusetts) and the Haute Ecole Pédagogique du Canton de Vaud (The State of Vaud University of Teacher Education, HEP Vaud), and led to outcomes that were interesting from a range of perspectives, beginning with the challenge represented by a collaboration instigated between students training to teach pupils of very different ages. The Americans were training to teach elementary school pupils in Environmental Studies, while the Swiss students both held Masters degrees and were training to teach high school pupils. This major difference between the study focus of the students involved was

one of the atypical factors of the project. Other aspects of the context are briefly presented later in the chapter.

The topic of urban ecology was proposed by David Morimoto, Associate Professor at Lesley University (LU), during a meeting with the originators of the PEERS project in early summer 2011. In October, however, David Morimoto announced that he would have to step down from the project due to organizational reasons at LU, even though it had already begun (with student recruitment, initial contact between professors, airline bookings for students, and development of a schedule for the visit of the Swiss partners to LU). In addition, due to unavoidable circumstances, the two HEP trainers involved in the project were unable to accompany their students to Cambridge. Combined with David Morimoto's withdrawal from the project, these circumstances nearly led to the project being abandoned.

It was however kept going through an agreement between parties at the two institutions: David Morimoto agreed to supervise the visit of the Swiss partners to LU in November 2011, and to involve another member of the teaching body at LU in the project. It was not however until January 2012, over two months after the visit of the Swiss students to Cambridge, that Cristin Ashmankas, Assistant Professor and Faculty Advisor at LU, was given the task of supervising the American students. She accompanied them on their return visit to Lausanne in March 2012. Ultimately, it was two students from LU (Haley Barber and Haley Puckhaber)<sup>1</sup>, two students from the HEP (Céline Tauxe and Marie-Hélène Weissen), and three trainers (Cristin Ashmankas at LU<sup>2</sup>, François Gingins<sup>3</sup>, and the author of this chapter at the HEP Vaud) who brought the project to completion.

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1 A third student from LU was involved in the first phase of the project before having to abandon their studies.

2 Cristin Ashmankas has since left LU to take up another professional role.

3 François Gingins has been retired since 2014.

## 2. Reference Frameworks

The theoretical basis for this project derived from various academic fields and it therefore made use of multiple theoretical frameworks. These are summarized as follows, grouped into four distinct “domains.”<sup>4</sup>

### 2.1 *Urban Ecology and Ecodistricts*

Urban ecology is now considered to be a reasonably well-defined field of research in both theoretical and practical terms (Emelianoff, 2001), with goals that span both urbanism and land use planning. On the theoretical side, the very meaning of the expression “urban ecology” is undermined by a frequent confusion between ecology *of* the urban area and ecology *in* the urban area. However, from an epistemological and methodological point of view, it is clear that an approach centered on the ecology of organisms (fauna and flora) living in green spaces in urban areas, or other ecological niches, does not have the same focus as an approach that questions the relationship between the urban area and the environment (Grimm, Grove, Pickett & Redman, 2000; Barles, 2010). Urban ecology seen as an “*ecology of the urban area*” aims to “*understand the urban milieu in a holistic manner in order to propose an alternative management and design*” (Emelianoff, 2001, p. 85). The concept of urban ecology used by the PEERS project presented here is therefore that of ecology of the urban area, rather than that with a restrictive meaning (ecology in the urban area)<sup>5</sup>.

The conceptual ambiguity characterizing urban ecology results in diverging visions of the relationship between man and nature (Descola,

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4 This grouping is primarily pragmatic. Agreed with the trainers at the HEP, it allowed the Swiss students to make connections between the various theoretical frameworks they were using, and to make rational choices and interlinking even within these frameworks.

5 The different visions of urban ecology held by the students from LU and those from the HEP presented one of the obstacles to overcome in this project.



2005), which can also be found in different meanings of the notion of environment (Theys, 2010). Thus, urban ecology can be based on a metabolic conception of the urban area as an ecosystem, on a sociological conception in the line of the Chicago School, or even on a strictly naturalistic conception (Clergeau, 2010; Armand-Fargues, 1996; Blanc, 1998; Emelianoff, 2001). The current principal research themes in urban ecology are risk management, urban agriculture, sustainable transport, the urban climate (e.g. heat islands), urban metabolism (analyzing the flow of energy, materials, and various outputs), and the issues of sustainable urbanism and architecture. The principles defining ecodistricts are particularly linked with these latter issues.

An ecodistrict is “an urban development project that respects the principles of sustainable development but also adapts to the features of the land.”<sup>6</sup> The general characteristics of ecodistricts have been well-described by specialists, and some are even well-known among the general public (especially energy saving and “soft” mobility):

[...] qualified densification, [...] morphological, functional, and social diversity, valorization of the public space, decisions in favor of collective transport and soft mobility, renaturing of the habitat, ecological management of material resources, the participation of the actors concerned in the conception, implementation, and management of living conditions (Da Cunha, 2011, p. 193).

To these features can be added a focus on the localization of the district within the agglomeration – often close to the center – and on the quality of links to the rest of the town or city, as well as the question of scale: the project must be big enough to be considered a district (Boutaud, 2009), even if the district level does not allow for the resolution of all the challenges posed in the production of a (more) sustainable urban area (Da Cunha, 2011). The ecodistrict is one of the solutions proposed to counteract the major problems of urban spread and its effects on mobility and urban sprawl, energy consumption, and even the increase of social and spatial segregation. It is therefore a tool used by political authorities

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6 As described by the French Ministry for the Environment, Energy, and the Sea. Retrieved from <<http://www.developpement-durable.gouv.fr/EcoQuartier,37480.html>>.

and urban planners, but also – and increasingly – by individual and collective actors within civil society.

Ecodistrict projects have taken place since the 1990s in Germany, the UK, and in the countries of Northern Europe, and since the end of the 2000s, they have spread to most European states (Béal, Charvolin & Morel Journel, 2011). Some have become iconic, such as the Vauban district in Freiburg im Breisgau, Vesterbro (Hedebygade) in Copenhagen, Hammarby-Sjöstad in Stockholm, and BedZED in south London. Their completion has not been without problems, with criticism most frequently focused on the very limited social diversity of many projects: the cost of construction and development involves rental or sale costs that are simply beyond the reach of social groups of modest means. More generally, an ecodistrict development cannot really be envisaged without strong support from public groups (political, sometimes financial), which requires them to have the means for such actions.

## *2.2 Sustainable Development and Education for Sustainable Development*

Since the early 1990s, the general public has gradually become familiar with the concept of sustainable development. It is classically defined as follows: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Brundtland, 1987, p. 8). It thus brings together three economic, social, and environmental sections, or pillars: sustainable development consists of ensuring adequate wealth creation to satisfy the needs of the population, while reducing social inequalities and avoiding damage to the environment (Allemand, 2006; Hertig, 2011).

Sustainable development is an ideological concept and a political project based on various epistemological concepts, some of which are subject to controversy (Hertig, 2011). Numerous researchers deny it the status of an academic discipline, while others consider it to be a “paradigm around which fields of research and academic reflection are organized” (Allemand, 2007, p. 9). The main controversies linked

to the concept of sustainable development derive firstly from the view of the relationship between human societies and nature, with tensions crystallizing around the opposition between an anthropocentric view (nature in the service of man) resting on a nature-culture dualism, and a biocentric vision that affirms that all life forms have an equal right to life (Descola, 2005; Theys, 2010; Hertig, 2011). These antagonistic visions translate into an opposition between “weak durability” and “strong durability,” this latter involving highly restrictive actions designed to protect the environment. Secondly, the very term “development,” often assimilated into that of growth, is controversial in many ways, as is the arguably oxymoronic association of the words “development” and “sustainable” (Allemand, 2006, 2007; Hertig, 2011). Finally, infra- and intergenerational justice, a fundamentally ethical issue, supposes an urgent and real consideration of the needs of the most deprived in order to reduce socioeconomic disparities between and within states. It cannot be ignored that the triumph of neoliberal economics has troubled this ideal. However, despite these controversies, sustainable development, seen as a principle of action, is the bearer of a true ethics of change (Da Cunha, 2003), and it is from this perspective that Education for Sustainable Development (ESD) has been introduced into the education systems of various states over the last fifteen years.

Heir to environmental education and global education, ESD embodies a certain number of contradictions, which relate in part to the controversies surrounding the concept of sustainable development (the view of the relationship between nature and culture; relative positioning of the question of economic growth, *cf.* Varcher, 2011). But the tensions around ESD also derive from the fact that its political dimension remains too often implicit or is not fully admitted by actors in the education system (Varcher, 2011; Hertig, 2012). It also involves visions of teaching and learning that are not shared by everyone (Audigier, 2011; Varcher, 2011). However, in terms of its objectives, most researchers agree that ESD aims to ensure a “reasonable” future to both current and future generations, and to allow all pupils to acquire the knowledge and the ways of thinking that they need to understand the world in which they live and in which they will have to act as responsible citizens.

### 2.3 *Interdisciplinarity*

The huge problems faced by human societies are not disciplinary, nor are the solutions required to resolve them (Audigier & al., 2011; Hertig, 2012). Nevertheless, knowledge built across and within disciplines is vital (Astolfi, 2008; Audigier, 2011; Hertig, 2012) for pupils to understand the interactions between the multiple factors in play and the actors concerned, so that they can develop prospective scenarios and make decisions in a reasoned way.

I will not discuss here the nuances between the diverse meanings of inter- and transdisciplinarity: for readers interested in this issue, another recent text proposes an overview of this area (Diemer, 2014). Fourez (1997) notes that an interdisciplinary approach must call for disciplinary knowledge, and Lemay (2011) specifies that this approach is not limited to a simple addition of known practices and that it enables the construction of links producing meaning. A true interdisciplinary approach thus *“implies a pooling of disciplinary approaches from the moment the issue has been defined, particularly when it comes to choosing and implementing research methods”* (Poglia, 2011, p. 158). This “cross-pollination” arising from the combination of contributions from multiple disciplines is one of the keys to understanding the world (Hertig, 2009, 2012).

### 2.4 *Didactic Approach to Teaching Scientific Disciplines*

Three major models of the relationship between academic disciplines and school disciplines coexist in the French-speaking world: the model of didactic transposition (Verret, 1975; Chevallard, 1985), the model of social reference practices (Martinand, 1986), and the model of school discipline seen as an original creation of the school institution (Chervel, 1988; Audigier, 1995) (see Hertig, 2012, for an overview of the foundational principles of these three models). We could also add the concept of the disciplinary matrix, as formalized by Develay (1992). These three models and the concept proposed by Develay are

not sufficient however to understand the different ways of considering a didactic approach to the teaching of scientific disciplines.

The didactic approach used in this PEERS program<sup>7</sup> was founded on a systemic view of knowledge (Morin, 1999; Hertig, 2012) and developed around an approach that was structured as follows (Hertig, 2012): use of a trigger element to problematize the knowledge issue with the pupils; delegating the issue to the pupils; structuring the unit into “problem” units based on the questions generated by the trigger element; networking of knowledge by means of integrating concepts from the scientific disciplines concerned (geography and biology in this instance); and a review phase designed to enable the institutionalization of knowledge and conceptualization. Inspired by the socioconstructivist model, this didactic approach was designed so that pupils would understand the meaning of the knowledge learned, and thus enable them to acquire some of the intellectual tools they need to understand the world in which they live and in which they will have to act as citizens: one of the objectives of ESD.

### 3. Shared Construction of the Project: Bringing Together Divergent Visions<sup>8</sup>

The outline of the shared development work for the project was defined by the student partners during the Swiss students’ visit to the United States. Before agreeing on the structure of the teaching units to be created, they compared their relative views of urban ecology and various key aspects of this topic, including the idea of sustainable transport, the concept of the ecodistrict, and the relevance of certain sustainability indicators.

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7 This in fact was the approach implemented by the two Swiss students. Their unit plans will be covered in more detail later in the chapter.

8 The information presented in this and the following section (overview of the teaching-learning units) is based on the dissertation of the two Swiss students (Weissen & Tauxe, 2012).

The two Swiss students' vision of urban ecology had been clarified at the start of their collaboration and derived from the interdisciplinary perspective of ecology *of* the urban area. The Americans had in mind the idea of ecology *in* the urban area, and were envisaging an approach centered on an inventory of green spaces in the urban area and a description of their biological features. These differences in approach illustrate the different visions resulting from the conceptual ambiguity that characterizes urban ecology.

Different visions also became apparent when it came to the principles surrounding sustainable mobility. While the Americans focused on solutions that were based on new technologies (hybrid engines, for example) and would do little to modify the dominance of reliance on individual car use, the Swiss students emphasized the choices of public bodies aiming to develop and improve infrastructure and public transport options, and to restrict individual car use. The concept of the ecodistrict also revealed notable cultural differences on the two sides of the Atlantic: although ecodistricts have developed in the majority of western European countries since the end of the 2000s, the concept is still not widely known in the United States. The North Americans have developed ecovillages, which share some features with ecodistricts (energy efficient buildings, design and infrastructure aiming to reduce environmental impact); the ecovillage of Sawyer Hill, near the small town of Berlin, around thirty miles to the west of Boston, provides a good example<sup>9</sup>. Ecovillages are built in rural areas and are conceived of as spaces for micro-societies, with no specific concern for social diversity nor resolving the issue of transport to and fro (the car journey from Sawyer Hill to Boston takes forty-five minutes). The focus on ecological issues, with the goal of a harmonious relationship between man and his environment, makes the concept of the ecovillage substantially different from that of the ecodistrict.

Another cultural difference arose when the student partners discussed sustainability indicators: the priorities for the Americans were clearly biodiversity indicators, green spaces, and water management, while the

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9 See Sawyer Hill EcoVillage website. Retrieved from <[www.sawyerhill.org](http://www.sawyerhill.org)>.

Swiss students accorded as much importance to social and economic dimensions as to those concerning environmental impact.

These different visions can be partly explained by the fact that the LU students were studying environmental studies in parallel with their elementary teacher training, hence their particular sensitivity to environmental issues. Nevertheless, these differences are also cultural in nature: the relationship of North Americans (particularly in the United States) to nature rests largely on the idea of “wilderness,” of a nature that is wild, intact, and protected from constant damage by man’s actions (Hertig, 2011; Gunnell, 2009).

The discussions between the HEP Vaud and LU students on these issues certainly constituted one of the highlights of their collaborative work, since they enabled them to understand visions different from their own, and led them to build together a series of sustainability indicators constituting the tools of analysis for the (eco)districts studied with their pupils. The following table (table 1) summarizes the nine sustainability indicators defined by the students.

Table 1: Sustainability Indicators of a District/Ecodistrict. The names of the indicators are those used by Weissen and Tauxe (2012, pp. 21–22).

<i>Indicator</i>	<i>Characteristics</i>
Economic aspects	Location of businesses and other economic activities. Note the presence or absence of jobs in the economic sectors concerned.
Social aspects	Sociocultural, socioeconomic, and generational characteristics of inhabitants of the district. Location of meeting spaces.
Building and land use	Classification of buildings and infrastructures. Building density. Functions devolved to different areas of the district and linked to the use of ground surface.
Well-being, health, safety, and comfort	Services available in the district and facilities ensuring the health, safety, and quality of life of inhabitants.

<i>Indicator</i>	<i>Characteristics</i>
Biodiversity and green spaces	Observation and description of plant and animal species identified. Location of green spaces: private or public, man-made or natural.
Energy	Identification and classification of energy sources supplying the district. If possible, identification of sources of energy waste.
Water management	Location of any natural water sources or water courses. Water management facilities in public and private spaces.
Waste management	Location of collection points within or immediately near the district. Evaluation of waste sorting by inhabitants and businesses.
Mobility	Urban design for public transport and private transport, favoring or not favoring soft mobility. Transport habits of district inhabitants and users.

The exchanges between the student partners also enabled them to define the key characteristics of the teaching units to be developed for their pupils. These had to incorporate an initial problematization phase, outlining the issues with their pupils. The trainee teachers also planned for part of the unit to include fieldwork outside the school walls, during which the pupils would be taken to study a district according to the nine indicators listed above. The pupils would also be asked to suggest improvements to give the district studied all or some of the features of an ecodistrict. Finally, the unit had to include a general review phase.

#### 4. The Teaching-Learning Units

The two HEP students developed an interdisciplinary teaching unit for the senior high school pupils they were teaching in their respective classes, one in the context of biology lessons, the other in the context



of geography lessons. Although the two students were on placement in different institutions, they worked closely together to develop the unit, which was developed within an interdisciplinary perspective from the very beginning (Fourez, 1997; Maingain, Dufour & Fourez, 2002). The trainees of course had to deliver most of the unit in their own respective classes due to the timetable imposed, but they were able to be involved at regular intervals in their partner's class (co-presenting, paired teaching).

The unit integrated varied teaching methods: formal "ex cathedra" teaching, group research, work in the computer lab, fieldwork, etc. In addition, the unit review phase for the first two classes was presented in the form of a half-day seminar during which the different groups of pupils from the two classes presented the results of their research, in the presence of an urbanist architect involved in the development of a future ecodistrict planned in Lausanne (the *Métamorphose* project), and of the trainers supervising the student teachers. The following table (table 2) summarizes the key characteristics of the unit developed by the Swiss students.

Table 2: Outline of the Teaching Unit Developed by the HEP Students.

<i>Phase and Duration</i>	<i>Content</i>	<i>Specific Methods</i>
Trigger element, problematization (1 lesson of 45 minutes)	Identification of the major issues affecting today's urban areas Development of a shared outline of the issue	Work with series of photographs
Learning unit 1 (2 lessons of 45 minutes)	Principles and objectives of sustainable development Examples of sustainable facilities, examples of ecodistricts	"Ex-cathedra" lessons, interactive lessons, directed tasks
Learning unit 2 (5 lessons of 45 minutes)	Definition of sustainability indicators Observation/fieldwork (district near the school) Each group is given one of the sustainability indicators to focus on	Group and collective work in computer lab Group work outside class

<i>Phase and Duration</i>	<i>Content</i>	<i>Specific Methods</i>
Intermediary evaluation (2 lessons of 45 minutes)	Groups give an oral presentation, within the class, of the initial results of their work	Group presentations, visual support (slides)
Learning unit 3 (4 lessons of 45 minutes)	Improvements from the perspective of sustainability: information search, then proposals for the sector and topic studied	Group work Computer lab Development of a written portfolio and support for final presentation
General review (method for the first two classes) (2 lessons of 45 minutes)	Seminar: the classes from the two institutions meet and share the results of their work	Slide presentations In the presence of an expert (urbanist architect)
General review (method for the two other classes) (2 lessons of 45 minutes)	Pooling (within class) of results of work Comparison of proposed improvements with real examples of ecodistricts Synthesis developed collectively	Slide presentations
Final evaluation	Evaluation of written report	

The general issue of the unit was defined as follows (or in similar terms): “*What solutions can be put in place to resolve the problems of today’s urban areas from the perspective of sustainability?*” Each of these learning units, conceived as problem units (Hertig, 2012), was centered on one issue stemming from the broader issue.

On their side of the pond, the two American students developed a teaching unit designed for kindergarten and elementary pupils. In fact, rather than a teaching unit as such, they created a series of topical lessons shining a light on environmental protection issues. The outline of their

approach is presented in the following table (table 3); the information is taken from the American students' website<sup>10</sup>.

Table 3: Outline of the Lesson Sequence Developed by the Students from LU.

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10 Retrieved from <<http://halecb.wix.com/peersproject#!lesson-plans-for-pre-k-through-5th>>.

11 A children's short story written by Dr Seuss, the pseudonym of Theodor Seuss Geisel (1904–91). Very famous in the United States, this short story was used as the basis for a Franco-American animated film released in March 2012, around the time the LU students delivered their lesson sequence to their classes.

<i>Phase and Duration</i>	<i>Content</i>	<i>Specific Methods</i>
Introduction (1 lesson of 30 minutes)	Introduction to ideas of the environment and sustainability	Watching video clips
1 lesson of 60 minutes (reading)	The impact of human activities on the environment Theme of individual and collective responsibility toward the environment	Reading and discussion of the story of the “Lorax” (Seuss, 1991) <sup>11</sup>
1 lesson of 30 minutes (natural sciences)	Water pollution Focus on freshwater and ocean pollution	Group work, hands on (mixing liquids) and visual support (images)
1 lesson of 40–45 minutes (natural sciences, mathematics)	Recycling Introduction to waste sorting Graphical representation of the amount of “recycled” objects in teaching “boxes”	Work in small groups Purpose-designed kits
1 lesson of 30 minutes (social studies)	Urban, suburban, and rural habitats Explanation of the characteristics of these three types of habitat and their impact on the environment	Collective work, then card game (matching images and/or definitions of the three types of habitat)
(1 lesson of 45 minutes)	<i>How to be Green</i> Individual responsibility for reducing ecological footprint Waste sorting, recycling, restrictions on individual car transport Individual contract (engagement to act to protect the environment)	Collective work, centered around semi-structured exchanges between the teacher and the pupils (question canvas)
1 lesson of 30 minutes (social studies)	Fieldwork: what the school is doing to protect the environment (“mapping the green in your school”)	Group work Observation, inventory, report on a map of the school
Collection of lessons dedicated to a project (between 1 and 6 hours) (interdisciplinary)	Developing a project in groups: defining the characteristics of an ecodistrict, i.e. a district where the environment is protected and the focus is on ensuring a good quality of life	Group work Brainstorming Sketch and 2D plan Then making a 3D model (with recycled objects)

Without making a systematic comparison of the two teaching units (their shared points have already been mentioned), it may be interesting to briefly highlight a few significant differences, which can mostly be attributed to the fact that the units were designed for pupils of very different ages. The type and objectives of the fieldwork are not for example the same: the young pupils of the American trainee teachers used direct observation activities, while the teenagers in the classes of the HEP Vaud trainee teachers implemented research methods that went beyond observation. The group work methods were also different: while the Swiss teenagers worked on specific tasks that varied between the different groups (the expert group approach), the young Americans also worked in groups, but with an identical task for each group. The use of computing resources was important for the HEP Vaud trainees' students, while the young pupils of the LU trainees did not use the computer as a tool but often expressed themselves through drawing. The learning evaluation methods were not of course the same, and the way of approaching the knowledge object itself differed, since the Swiss teachers were able to discuss more abstract concepts in class than the American trainees could have done with their young pupils. This particularly manifested itself through the priority given by the LU students to certain sustainability indicators that are more accessible for young children than others (for example green spaces, waste management, and water management).

## 5. Assessment and Perspectives

The main problem faced by the participants of this project was the fact that the student partners were on very different courses of study. This certainly limited the scope of the project, and perhaps its intrinsic interest. In many ways, rather than a project in which development, implementation, and evaluation were equally shared, this was an interdisciplinary project designed by the HEP Vaud, and then adapted by the LU students under

the supervision of Cristin Ashmankas. Ultimately, this had a significant impact on the comparative scope of the project. It would also certainly have been interesting to research more deeply into the cultural differences between divergent visions of sustainable development, urban ecology, and the relationship between man and nature.

That said, the positive aspects of this project must be highlighted. Above all, it was an opportunity for all the participants involved to develop personally through numerous moments of exchange, during week-long visits to Boston/Cambridge and to Lausanne, and through the intermediary of social networking resources. For the student teachers, collaborating with colleagues whose views on ecology and on the teaching approach to social hot topics or scientific controversies were very different from their own, was doubtless instructive, for it led them to question and alter their own visions and views – a reflective approach that all teachers must or should implement on an ongoing basis.

This project also led to several achievements that deserve to be mentioned here. Firstly, the project was presented at the PEERS Symposium organized as part of the World Association for Educational Research conference (WAER), held in Reims in June 2012. In addition to the three trainers involved (Cristin Ashmankas, François Gingins, and myself), the two Swiss students were able to participate in this research presentation thanks to support from the HEP Vaud. This was an important opportunity for them to gain their first experience of participating in a major conference, and of preparing a research communication.

Furthermore, the two HEP Vaud students focused their dissertation on the PEERS project. They also developed a detailed teaching guide allowing other teachers to implement a teaching unit on ecodistricts, and a redesigned version of this guide (Tauxe & Weissen, 2013) was uploaded to the website of the “Education 21” foundation, the national center for delivery and skills that supports the implementation of ESD in Switzerland. Teaching units looking at ecodistricts, with a structure more or less inspired by that developed by the two Swiss students, have been implemented in several institutions in the Canton of Vaud. Finally,

the two students produced a brief article presenting their project in the *Prismes* journal produced by the HEP Vaud (Weissen & Tauxe, 2013). The American student teachers produced a website dedicated to the project, and many of the documents that they produced for the implementation of their teaching unit are still available from this resource<sup>12</sup>.

Plans for collaboration between the HEP Vaud and the LU in the field of ESD have not yet been finalized beyond a second experience of the PEERS project (see Alain Pache's chapter in this volume) (Pache, 2017), due to Cristin Ashmankas having moved away from the institution. Focusing purely on the project described here, a particular highlight was the very strong engagement of the two Swiss students, who learned a great deal about interdisciplinarity through this experience, and who produced very high quality work; the two American students involved from the beginning of the project were also strongly invested once Cristin Ashmankas began supervising their work. The respective partner visits to Boston and Lausanne led to very rich personal and cultural exchanges. And finally, it is doubtless that the pupils taught by the students, and the students themselves, gained most from this project. The former, whether very young or teenagers, were able to acquire tools for understanding the world. The latter, as young teachers, gained personal, teaching, and methodological experiences that they will draw upon for the rest of their professional lives.

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12 Home page retrieved from <<http://halecb.wix.com/peersproject#>>.





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## Chapter 16: Ideology, Culture and Language Preparing International and Critically Conscious Teachers: Difficulties and Advantages of a PEERS Project Focusing on Interculturalism

### **Abstract**

For three consecutive years, a group of students from the University of Teacher Education of State of Vaud (HEP Vaud), and from the College of Education at San Diego State University (SDSU), has collaborated to define a student exchange project. Three students from each institution engaged in individual projects implemented in two particular contexts: foreign language classes in the school system of Vaud, and bilingual education in the California public school system. Through a methodology based on pre and post reflection, interviews, and questionnaires to focus groups, the projects intended to explore how teachers addressed challenges in multilingual and multicultural classes. Students and faculty from both institutions focused on specific issues of research including how educational systems address the needs of linguistically and culturally diverse students; effective pedagogical approaches to implementing *interculturalism*; and implementing critical thinking, technology, and collaboration within the day-to-day teaching and learning practices.

*“I will never teach in the same way again!”*

A student during the exchange

## 1. Introduction

The main aim of this article is not to outline the methods of collection and analysis resulting in a series of rigorously scientific research results, but rather to acknowledge the number and complexity of processes triggered by confrontation with the Other, whether this is represented by individuals, places, habits, and customs, or above all by experiences of schooling from the point of view of pupils and particularly of teachers.

The belief that communication and exchange, collaboration around a project, and shared experience – with partners living, studying, and working on the other side of the world, near or far away – represent undeniable added value and indisputable enrichment in a program of teacher education is the key motivation for all the individuals who have taken part in the PEERS (*Projet d'Étudiants et d'Enseignants-chercheurs en Réseaux Sociaux* or Student and Teacher-Researchers Social Networks Project) program.

That said, motivation and engagement should not prevent us from remaining clear-headed about the obstacles and difficulties, both external and internal to the individual, that punctuate such an international experience. Fortunately so, as it is the inevitable confrontation of the person we are with the Other that we meet that engenders linguistic and intercultural understanding and a reflective step back from the opposed ideologies.

The trainers and trainee teachers involved in the project have benefited from a unique experience that has enabled them to experience real-life situations involving concepts that are now fundamental to the training of teachers preparing to practice their profession in a school context where a variety of languages, cultures, ethnicities, and social classes mix on a daily basis. In such a context the role and behavior

of teachers, and the pedagogical and didactic choices that they make, can only be defined from a plurilingual and intercultural pedagogical perspective.

Despite the confrontation between different schools of thought, theoretical references, and educational policies, it was immediately evident that the shared experiences of the exchange project were comparable on both sides of the ocean.

The experiences of the project participants thus correspond to the words of Cuq (2003) who defines the concept of interculturalism as follows:

[...] interculturalism affirmed the importance of the inter- prefix, which enabled us to go beyond the multicultural. The intercultural is in fact the exchange between different cultures: coordination, connection, and mutual enrichment. Far from being an impoverishment, as claimed by conservatives, actual contact between different cultures offers an opportunity in which everyone can find a supplement to their own cultures (which they do not of course wish to give up) (Cuq, 2003, p. 136).

Chaves, Favier and Pelissier (2012) define *multiculturalism*, at the level of society, as “the cohabitation and parallel coexistence of several sociocultural groups within a society” and pluriculturalism, at the level of the individual, as “the capacity to identify with, and participate in, multiple cultures.”

As for *interculturality*, they describe it as follows:

The intercultural is defined as a dynamic process of exchanges between different cultures. The intercultural exists only where there is an exchange, an encounter, or a sharing. It is not a fact to be taught but rather an approach that aims to build bridges and links between cultures. This approach therefore requires a constant rebuilding of identity in relation to alterity; it is about accepting the diversity of perspectives, encountering other points of view, and understanding different ways of life; and also understanding that an individual is rarely the product of a sole cultural affiliation.

This is indeed what emerged from the spontaneous and non-transcribed discussions of participants in the HEP Vaud-SDSU PEERS project, with a focus on the experience rather than the tangible outcomes initially

aimed for by the shared work, over the course of the three instances described in this chapter.

## 2. Outline of the HEP Vaud-SDSU PEERS Project

The exchange between the University of Teacher Education, State of Vaud (HEP Vaud) in Switzerland and San Diego State University (SDSU) in the United States took place over the course of three academic years, along the broad framework of the protocol defined for PEERS program projects. However, it was not always possible to follow this protocol to the letter due to unforeseen circumstances, particularly regarding student participation. We will return to this point later in the chapter.

Over the three academic years, between fall 2011 and spring 2014, with an OUT component (visit by the HEP Vaud group to SDSU) in October-November and an IN component (visit by the SDSU group to HEP Vaud) in March-April, this beta-test PEERS project was run as a collaboration between myself and two colleagues from SDSU, accompanied respectively by 7 and 9 students from each institution. It enabled us to explore a number of teaching/learning approaches, both at the level of pupils through visits and classroom observations, and at the level of trainee teachers, through the use of reflective and analytical learning approaches to visits and discussions that aimed to challenge opinions and lived experiences of the Other.

The shared and enduring objective was always to contribute to the development of competencies such as openness to the international (global) dimension of learning, taking critical distance in all learning situations, and gauging the role played by language in all its forms. These objectives applied to all the individuals involved in the project, both tutors and tutees.

From the earliest moments of the three PEERS projects shared by HEP Vaud and SDSU, the issue of language played a major role.

Although the exchange between two plurilingual educational contexts was one of the project's leading features, it quickly became apparent that there would only be one working language: English. Swiss educational policy has made English an international language learned by all pupils from elementary school onward, along with two of the three national languages. The students from HEP Vaud were thus able to cope fairly easily in an Anglophone training context.

When it comes to the Californian educational policy concerning languages, however – we have insufficient space to consider such policies in the United States as a whole – French is clearly a low priority given the numerical, economic, and sociocultural weight of Spanish and Mandarin Chinese. Neither the professors nor the students from SDSU would have been able to participate in the projects if French had been even very partially used.

The English linguistic and cultural skills of the trainee teachers from the HEP enabled them to spend their time in San Diego in a situation of almost complete immersion, which was therefore particularly instructive and enriching. In contrast, during their visits to Lausanne, the professors and students from California required linguistic and cultural mediation at all times. This did however serve to further demonstrate the benefit provided by every situation of contact with otherness, even if easy or undemanding: acting as mediators enabled the Swiss professor and students to see in a new light the everyday realities that they took for granted.

The *Common European Framework of Reference for Languages* (CEFR, 2001) highlights the relationship that exists between intercultural awareness and the skill of mediation:

Knowledge, awareness and understanding of the relation (similarities and distinctive differences) between the “world of origin” and the “world of the target community” produce an intercultural awareness. It is, of course, important to note that intercultural awareness includes an awareness of regional and social diversity in both worlds. It is also enriched by awareness of a wider range of cultures than those carried by the learner's L1

and L2. This wider awareness helps to place both in context. [...]

Intercultural skills and know-how include:

- the ability to bring the culture of origin and the foreign culture into relation with each other;
- cultural sensitivity and the ability to identify and use a variety of strategies for contact with those from other cultures;
- the capacity to fulfil the role of cultural intermediary between one's own culture and the foreign culture and to deal effectively with intercultural misunderstanding and conflict situations;
- the ability to overcome stereotyped relationships (CEFR, 2001, p. 103–105).

### 3. Participant Profiles: The Trainee Teachers

Somewhat surprisingly, one fact was clear on both sides of the ocean: it was not always easy to find students who were ready to launch themselves into the adventure of the exchange. This was due to many reasons, primarily of a practical nature. Time after time, students who were very interested in the project and met all the required criteria for participation had to pass up on the opportunity due to a lack of childcare provision, major commitments relating to their placements, or important coursework linked to their training due just at the time of departure.

The partner institutions agreed from the beginning that the project would be designed for students training to teach middle and high school level. The first exchange with SDSU involved three students from the high school teaching stream, while the two others involved students from the middle school teaching stream. Since the professors involved came from a background of language teacher training, and a linguistic question was integral to the exchange between the two institutions (situated in Anglophone and Francophone countries but strongly marked by plurilingualism), the project participants from SDSU were mostly training to teach English as a first and second language, and the participants from the HEP were training to teach foreign languages.

#### 4. Participant Profiles: The Teacher Trainers

The personal, professional, and ideological profiles of the trainers involved – in terms of education and educability – had an unquestionably important role in the achievement and success of the PEERS project, providing as much distance and diversity as that between HEP Vaud and SDSU.

The three professors participating in the project immediately found common ground in their shared belief that internationalization and mobility should be part of twenty-first-century teacher training. They also discovered a shared plurilingual profile, a background combining teaching experience and academic education, and an insatiable curiosity to seek out new knowledge and new encounters.

This was however challenged by the impact of different views of education – in terms of the dominant and traditional educational philosophy – on methods of teaching and learning that affect the everyday life of teachers and pupils, and thus the ways in which they view the teaching profession. The Californian approach is more strongly influenced by ideology, with a particularly strong attachment to pedagogical thinkers such as Paulo Freire, and places greater emphasis on the development of transversal competencies rather than the accumulation of knowledge. The approach in Romandy (French-speaking Switzerland), on the other hand, allows space to choose transversal competencies but nevertheless provides a curriculum marked by explicit requirements regarding knowledge and disciplinary skills.

In summing up what the PEERS project had given them, the three trainers were in unanimous agreement: shared school visits, long discussions alone or with the students, and invitations to observe their respective lessons were opportunities for each of them to enrich their theoretical knowledge and open up to the educational landscapes of the two countries, thus achieving one of the principal objectives of the internationalization of teacher education (Koziol & al., 2011).

## 5. Topics and Types of Collaboration

With the academic year beginning in September and the “OUT” leg of the HEP Vaud-SDSU exchange project taking place toward the end of October, the real launch of the shared project was always going to be the week in San Diego. These meetings immediately demonstrated the common interests of participants, and a plethora of possible study ideas emerged which then came up against reality. This was the reality of an overloaded timetable, different pedagogical schools of thought, and school systems based on different principles and language barriers. The long, in-depth discussions about these aspects were not documented, either with note-taking or audio recording, but they were moments of great richness and might each have provided material for research in their own right.

The shared interests and engagement of each individual involved enabled the project to be concluded within six months on three occasions; promising beginnings did not always culminate in conclusive outcomes from the point of view of the research results, but this is an inherent risk in any group project, particularly when collaboration is primarily remote. Such projects were however very fruitful for student education, with the plans and processes being important sources of learning and development for the trainee teachers, even without concrete outcomes.

In the first instance of the project, the topic of interest was how education can take into consideration the diversity of pupils on an everyday basis, particularly from the point of view of their linguistic and cultural needs. From this “umbrella question,” the six students developed six aspects of this topic, in six different contexts, in relation to their personal interests and with a view to carrying out research that would form an integral part of the coursework required to obtain their respective teaching diplomas.

The first shared discussions in San Diego led to an “umbrella question” encompassing the questions that formed the basis of the individual research carried out by the six students: “How do the Swiss and American education systems take into consideration the linguistic needs of pupils with different languages and cultures?” The question was approached from three points of view: the institutions, the teachers, and the pupils.



In San Diego, one student investigated educational institutions to find out how they managed the issues of race, language, and unequal treatment. The second student worked with four teachers to measure the impact of teaching ideology on the results of their pupils learning English as a second language. Finally, the third student investigated the effect of high strategy tests on the dropout rate of pupils with English as a second language and from a lower socioeconomic background.

In Lausanne, the three students focused on the case of pupils with different language levels (too low or too high) in the foreign language class they attended. The first student investigated the institutional aspect by analyzing the Romandy, Swiss, and European official decisions and declarations. The second interviewed four teachers to discover what methods they used in their lessons with pupils at different levels. The third student looked at the way in which these pupils experienced their linguistic difference.

The six students shared theoretical reading and resources, and used the same research techniques: literature reviews, document analysis, questionnaires, interviews, and classroom observation. Several shared observations emerged from their work: ideology weighs heavily on education, which is never neutral; contradictions must always be questioned and different educational actors given the opportunity to speak; and theory and practice produce a *praxis*, an educational action underlined by a pedagogy of hope (as defined by Paulo Freire).

The second instance of the exchange project suffered from difficulties relating to the respective and sometimes challenging situations of the participants. With only one student at HEP Vaud and three students with very different profiles at SDSU, it was impossible to bring the project to a concrete and tangible conclusion. The initial idea had however enjoyed consensus: to investigate the concept of interculturality and its implementation in a global context from two angles, the place of interculturality in foreign language teaching (German in the Romandy area of Switzerland, English as a foreign language in San Diego) and its place in the teaching of non-language disciplines (history in both contexts).

During the first shared discussions in San Diego it became immediately evident that the research interests and reflections would be

the same as in the first project: in the two different contexts the issues to investigate were the same, and still connected to the linguistic, social, and intercultural dimensions of language teaching and teaching in general. The research question shared by the four students was outlined as follows: “How can the intercultural perspective be integrated in different contexts and different teaching disciplines?” The research approach consisted of implementing various pedagogical and didactic approaches involving an intercultural perspective, accompanied by questionnaires and/or interviews.

In San Diego, the project was implemented in history and English classes in a vocational high school where two of the three students participating in the project were teaching, and which was visited during the stay in San Diego. These two students completed their diploma course.

In Lausanne, the sole HEP student was on a middle school teaching diploma course spread over two years. He used the 2012–13 year to develop the theoretical framework and outline the concepts, thanks in particular to the exchanges that took place during the PEERS project. He then implemented teaching units as part of his middle school teaching placement, and completed his thesis during the following academic year.

The third instance of the project brought together six students who shared two key characteristics: a very strong command of English, and participation on a totally voluntary basis, i.e. not linked to their diploma coursework. The concrete culmination of the project in that year would therefore be an end in itself. The subject that interested the whole group was the analysis of the presence in the common curricula of the two regions concerned (Romandy and California) of three competencies considered indispensable in the educational context of the twenty-first century: critical thinking, the use of technology, and the ability to collaborate.

During the first shared discussions in San Diego it became immediately evident that the research interests and reflections would be the same as in the first two projects: in the two different contexts the issues to investigate were the same and still connected to the linguistic, social, and intercultural dimensions of language teaching and teaching in

general. One additional shared feature emerged during the meeting in the fall: in both California and the United States in general, as in Switzerland and Europe, individuals working in the field of education were struggling to implement common and coordinated curricula.

In the United States there was lively discussion about this initiative:

The Common Core is a set of high-quality academic standards in mathematics and English language arts/literacy (ELA). These learning goals outline what a student should know and be able to do at the end of each grade. The standards were created to ensure that all students graduate from high school with the skills and knowledge necessary to succeed in college, career, and life, regardless of where they live. Forty-two states, the District of Columbia, four territories, and the Department of Defense Education Activity (DoDEA) have voluntarily adopted and are moving forward with the Common Core (Common Core State Standards Initiative, 2017, retrieved from: <<http://www.corestandards.org/about-the-standards>>).

Switzerland was also working toward a consistent arrangement:

The intercantonal harmonization of compulsory education agreement (HarmoS) covers the duration and objectives of schooling levels and language teaching, as well as time blocks, and daily routine, while updating the provisions of the 1970 schooling agreement regarding the compulsory school age and the duration of compulsory education. The agreement came into effect on August 1, 2009 (Conférence Suisse des Directeurs de L'Instruction Publique [Swiss Conference of Cantonal Ministers of Education], 2017, retrieved from: <<http://www.edk.ch/dyn/11737.php>>).

Collaborative pairs formed very quickly and spontaneously, and the students began to work in a particularly productive fashion. They decided to analyze the respective curricula and their transposition to the classroom from three angles: the development of critical thinking, the emergence of technological tools, and collaborative pedagogy. Each student contributed to data collection through questionnaires and interviews carried out in their respective placement institutions.

Remote collaboration and the second visit culminated in a shared presentation of project results during the final day of the spring term. This was the first “PEERS Study Day,” centering on the students’ presentation of their research project, and framed by lectures given by four external

speakers from Europe and the United States. The program represented an important moment of experience and intercultural and linguistic awareness, in which mediation played a key role; the external speakers in effect added diversity to diversity, both with their origin and their professional, linguistic, and cultural profiles.

- Dr. Gregg Glover, Associate Director of Admissions at the Graduate School of Education, Harvard University – *Internationalization of Teacher Training and Globalization*;
- Dr. Fred Dervin, Professor of Multicultural Education at the University of Helsinki (Finland) – *Internationalization of Teacher Training and the Intercultural Dimension*;
- Pierre Moinard, Head of Distance Teaching at the University of Cergy-Pontoise (France) – *Distance Teacher Training: A Framework*;
- Dr. Gerry O'Reilly, Senior Lecturer in Geography and International Affairs Coordinator for St Patrick's College, Dublin – *Internationalization and Education: Experiences from Dublin*.

## 6. Outcomes and Evaluation

Physical and sociocultural distance between the countries, educational contexts, and personal circumstances contributed to both the added value and to the obstacles faced by this PEERS project over the course of three academic years.

Although the two one-week in-person visits in each of the three years were unique, fruitful, and well-organized, the intermediary and above all concluding phases were challenging, and distance was not always conducive to a productive conclusion to the project (a publication, for example), nor to continuation of the collaboration between participants who exceeded the time required to complete the project.

It is difficult in such circumstances to evaluate the results of these three instances of our PEERS project except through outcomes and

regular events. I would highlight two of these: firstly, the publication and oral examination of individual certification work, and secondly, as part of the third instance of the project, the organization of a PEERS study day held in Lausanne in March 2014. This second form of collaborative work evaluation is characteristic of PEERS projects focused on research, development, and training, and has the particular value of including student presentations on the project and its results in an international and plurilingual context ensured by the presence of experts from several different countries. Ideally, every PEERS-type project would culminate in such an assembly, but again, reality poses limits that are sometimes impossible to overcome.

## 7. Obstacles and Incompletion

At the beginning of this chapter I noted the importance of remaining clear-headed and realistic about both the strong and the weak points of our PEERS project, in order to avoid obscuring its true benefits with an idealistic vision of the interlinguistic and intercultural situation. Perfection is not the only alternative to inertia, and it is the journey that counts, not the destination.

It must therefore be recognized that in an age of global communication where the virtual reigns supreme and “everyone is connected at all times,” remote collaborative working still often remains illusory. The key moments of this project were always those between the two in-person visits, and after the end of the academic year. Working on shared documents thanks to tools such as Dropbox, which is undeniably effective, requires strict discipline and precise time organization, particularly when there is a time difference of nine hours between the homes of the participants. Fitting this organization into the burden of training and teaching in two different places requires careful juggling, and unfortunately did not always lead to the hoped-for success, at least in the context of the HEP Vaud-SDSU project.

In our case, the problem of spatial distance was compounded by the difficult issue of the working and thus writing language. The Swiss participants were required to demonstrate a sufficient level of English, and were able to do so as a result of their plurilingual education system (with both official languages and English taught from elementary school). The participants on the Californian side certainly had the advantage of a much stronger English-Spanish bilingualism, but had no knowledge of French. The working language was therefore always English and in particular the English of education, which led to a number of difficulties concerning terminology and thus the definition of concepts related to the questions at hand.

## 8. Consistent Features and Benefits

Following these three consecutive projects, the professor from HEP Vaud, namely myself, is the person best able to highlight the consistent positive aspects and beneficial effects demonstrated during the three exchanges between HEP Vaud and SDSU.

Firstly, I would note the relative ease with which the initial study questions always emerged from the early discussions between the professors, who met twice a year, and the students who were meeting one another for the first time. These were:

- How do the Swiss and American education systems take into consideration the linguistic needs of pupils with different languages and cultures?
- How can the intercultural perspective be integrated in different contexts and teaching disciplines?
- How are the development of critical thinking, the emergence of technological tools, and collaborative pedagogy, which are key elements in the respective curricula, transposed into everyday teaching?

Looking at these questions, which reflect pedagogical and didactic concerns that trainee teachers must master during their training, and considering how easily they emerged, it is clear that despite everything that separates the two educational systems represented in the HEP Vaud-SDSU project, the challenges of education and teacher training are the same, and correspond to those highlighted in the studies cited in the bibliography. The first consistent feature is thus a shared need to respond collectively to problems affecting educational systems at a global level.

A second element raised by all three instances, and one which gained the unanimous support and satisfaction of project participants, is contact on the ground. Having the opportunity to go into schools, see pupils and teachers at work there, and discuss things with them, was always mentioned as the high point for each exchange visit on both sides of the Atlantic. The groups from Lausanne were particularly struck by the way in which classes were staffed and organized in the San Diego schools: the pedagogical use of space, particularly the display and projection walls; the priority accorded to tasks and collaboration, giving the teacher the role of enabler rather than bearer of knowledge; and the evaluation of the work of all pupils with a strong emphasis on the process and progress rather than the results. On their return visit to Lausanne, the Californians expressed their wonder and admiration of the typically Swiss dual vocational education system, which is being considered with interest by an increasing number of countries, including the United States.

Returning to the definitions proposed earlier, and particularly to the vision of experience and (inter)cultural awareness as a dynamic process – a continuous coming and going between the cultures present –, an added value to the project also resides in the fact that students and professors were required to play the role of mediator, which enabled them to gain a better understanding of what seemed to them to be entirely familiar.

Finally, we should note what the three HEP Vaud-SDSU projects brought to everyone on a strictly personal level, varying according to disciplinary and professional identity. These effects could, and perhaps should, be expressed through a qualitative research approach, but the obstacles identified earlier challenged the students as well as the trainers:

the shortness of the time spent together, the difficulty of remote working, and the management of very busy professional schedules.

The experience had a great impact; the effects were not scientifically measured and left no real observable traces, but they often peppered the working discussions and informal conversations, through such phrases as “I will never teach in the same way again!”

## 9. Conclusions and Perspectives

The PEERS project shared by HEP Vaud and SDSU did not continue beyond 2014, as practical, essentially financial, obstacles, as well as issues linked to the duration of the exchange visits in light of the long journey separating the two countries, overcame the training benefits.

However, the three occurrences discussed in this chapter reiterate the need to support and develop international exchanges as an integral part of teacher education.

Although research topics are likely to emerge very easily from the initial contact between partners – the challenges to be overcome in the educational landscape are in no danger of disappearing – the obstacles must be accounted for on several levels. Particular care must therefore be taken to solve practical problems (funding, travel, and accommodation), and to have clear communication with all trainee teachers, particularly via an evaluation of the results of completed projects, which should be integrated before, during, and after each project as part of the study plan of the students and trainers who wish to take part in the adventure of the international exchange.



*Conclusion*



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## Chapter 17: The PEERS Program: a New Way to Internationalize Teacher Education

### **Abstract**

This concluding chapter of the collective work *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives* aims to highlight the key points of the three preceding sections. To achieve this, a quality approach paradigm is used, which seeks to uncover the distinctive elements of the axiological and contextual frameworks, as well as the resources, practices, and models used in the PEERS program projects, as covered in the three sections: (1) “*Issues, Opportunities, and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural, and Connected World*”; (2) “*Case Studies and Lessons Learned from the PEERS Project in Southern Countries*”, and (3) “*Results of Research-Oriented PEERS Projects*.” This combined reflection enables us to define a series of original and novel characteristics that make the PEERS program a new way of approaching the internationalization of teacher education through research and innovation in educational theory and practice, in our increasingly globalized, multicultural, and connected world.

## 1. Introduction

Created in 2011–12, the PEERS (*Projet d'Étudiants et d'Enseignants-chercheurs en Réseaux Sociaux* or Student and Teacher-Researchers Social Networks Project) program (Gilles, Gutmann & Tedesco, 2012a, 2012b) has enabled the participation of nearly 500 students over six academic years, from 2011 to 2017, in 81 different PEERS projects. Over a hundred professors have also participated in this program, in a variety of projects, with some taking part over several years.

We return to the definition of PEERS as proposed by Gilles (2017) for this innovative international exchange program:

The PEERS program proposes international exchanges adapted to the context of teacher training institutions wishing to take advantage of internationalization in order to link training, research, and practice. PEERS is based on the completion of Research and Innovation (R&I) projects during the academic year, during which international groups of professors and students from teacher training partner institutions collaborate remotely as well as during two placements of one week. For the students, the PEERS program aims to develop competencies in distance collaboration with the help of Information and Communication Technology (ICT), the management of intercultural groups, and the continuous improvement of their activities through reflective thinking and the spirit of research. For the professors, the PEERS program aims to better link research and training, to foster opportunities for international publications, and to reinforce their skills in the management of international research projects.

Within the framework of this chapter, we propose to present the key points of the three sections that make up this work, *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. The first section, entitled “*Issues, Opportunities, and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural, and Connected World*”, focuses on the foundations and general features of PEERS projects, as well as the context of globalization in the intercultural and connected world in which it is situated. The second section, “*Case Studies and Lessons Learned from the PEERS Project in Southern Countries*” constitutes, as its title indicates, a series of chapters presenting case studies on PEERS projects

focused on innovation and cooperation in the developing world. Finally, the third section, “*Results of Research-Oriented PEERS Projects*,” considers the results from PEERS projects that have enabled the implementation of theoretical and practical educational research, generally taking the form of small-case research studies or innovations in the design of teaching units.

## 2. Theoretical Framework

The quality approach guiding our analysis of the PEERS program projects can be considered as a paradigm in the sense conceived by Kuhn (1983, p. 238): “*a collection of beliefs, recognized values, and techniques shared by members of a given group*.” For a community of teacher-researchers and students considering the advantages of an internationalization program such as PEERS in the context of teacher training, the quality approach paradigm presents one of the advantages described by Tardif (2001, p. 4): “*A paradigm not only suggests practices, but it also provides a specific framework for interpretation and understanding. In addition, it favors differentiated questions and responses because it constitutes a conceptual filter. It is equally crucial to highlight that a paradigm orientates, if not even shapes, representations.*”

It is with a view to making available a shared framework of interpretation for facilitating exchange and interaction, while also favoring the reflective approaches of continuous improvement, that we have proposed a quality approach paradigm for over fifteen years in the framework of R&I (Research & Innovation) projects in collaboration with different teams and in fields as diverse as evaluation design, general didactic methods, and school integration (Gilles, 2002; Gilles & al., 2007; Gilles & Renson, 2009; Gilles, Polson & Reynders, 2009; Gilles, 2010a; Gilles, 2010b; Gilles & al., 2011; Gilles, Tièche Christinat & Delévaux, 2012). The proposed paradigm constitutes a tool for enabling analyses and interactions between actors from different horizons. It is founded upon two frameworks of reference and four key factors. These four key factors are: a collection of

needs expressed by actors; an academic corpus combining principles and practices, of validated efficacy; theoretical models that give coherence to the interventions and analyses of actors; and the human and material resources necessary for execution. We believe that placing the PEERS program in a quality approach will enable these four key factors to be considered in a coherent and concomitant fashion. These key factors are also influenced by elements of two background frameworks: the first, axiological in nature, is related to the values conveyed, while the second is contextual and concerns a series of organizational, socioeconomic, historical, and cultural variables that determine the state of the environment, in the broadest sense of the term, in which the international projects of the PEERS program take place.

### 3. Key Points from the Section “Issues, Opportunities, and Challenges for the Internationalization of Teacher Training in a Globalized, Multicultural, and Connected World”

In regard to the contextual and axiological frameworks of the PEERS program, the first three introductory chapters (Gilles, 2017; Grin, 2017; O'Reilly, 2017) highlight the profound societal transformations that we are witnessing in the early twenty-first century, both on the economic front due to globalization and the linking of economies, and on the technological and social front with the emergence of a multicultural, connected society. Based on an analysis of the origins of the European Union (EU), the chapter by Grin (2017) allows us to understand the historical and humanist foundations of the voluntarist policies implemented by the EU since the second half of the twentieth century with a view to creating a space for the free movement of people, in which students are encouraged to study in foreign institutions, most notably through the creation of the ambitious Erasmus+ cooperation and mobility program. It is in this context that European higher education institutions have been internationalizing. In the area of teacher education, the PEERS program offers several advantages:

The PEERS program has a direct influence on involved teachers and students. But the influence of the program is much wider as it creates European and international collaboration networks, brings contributions to research and the creation of knowledge and, in the end, has transformative effects through the impact on pupils. As we know, these pupils will be the citizens of tomorrow. The more citizens can understand complexity and evolve in a world characterized by rapid transformations on a global scope, the more they will have a chance to pass sound judgment on the major challenges linked to the building of Europe (Grin, 2017).

Regarding the models that should inspire us when it comes to training effective teachers who can demonstrate critical thinking and an awareness of the issues raised by a globalized world, O'Reilly (2017) notably emphasizes the principle of empathy at the heart of PEERS projects:

Collaboration involves pedagogy and empathetic education and discovery (or enquiry-based) learning. More than one type of intelligence exists, with social and emotional intelligence progressively valued in workplaces (Goleman, 1996; Ioannidou and Konstantikaki, 2008). Empathetic intelligence is based on a theory of relatedness which is dynamic regarding thinking and feeling; ways in which each contributes to making of meaning. It is built on person-centered situations and professional contexts. Salient skills, abilities and attitudes underpin effectiveness in contexts with enthusiasm, expertise, capacity to engage, and empathy itself. [...]. Social usefulness of empathy and organization is crucial in developing cultures of learning essential for students and lecturers, on practice and professional relationships (Arnold, 2005). This perspective must be forefront in the digital age. Given the (emotionally) distancing effect of technology, students must develop empathetic intelligence so as to engage effectively as illustrated by PEERS collaborations where empathic learning is reinforced (Marron and Descoeudres, 2015). (O'Reilly, 2017).

Based on PEERS experiences in Ireland, O'Reilly (2017) also emphasizes the socioconstructivist nature of the learning achieved through the program:

In this constructivist approach, students were not provided with exact answers, but rather skills and materials to find answers themselves. Learners were encouraged to draw on their experience and prior knowledge, calling on that of peers, in group learning scenarios.

This “empathic intelligence” and “socioconstructivist approach” stimulated within PEERS projects are among the unique features of this

program, which is designed to internationalize the student curriculum by making use of research and training within tertiary teacher training institutions.

Two further striking observations from this introductory section: the clarification of objectives for both the teacher-researchers and the students in relation to the needs that the PEERS program aims to meet; and the formalization of the PEERS model through six distinct stages during the realization of projects. The first introductory chapter (Gilles, 2017) highlights the opportunities that the scheme offers to teacher-researchers, particularly in regard to developing their skills for managing international R&I projects involving students and practitioners, but also in relation to international publication of the results obtained with their partners. For students, the emphasis is on skill development in the areas of remote collaboration using ICT, the management of intercultural groups, and the continuous improvement of their activities through reflective practice and the research spirit. Six stages characterizing the PEERS procedural model have been clearly identified and defined: (1) preparation of the project before the start of the academic year; (2) remote team building and analysis of the project at the beginning of the process; (3) first one-week visit to the partner institution during the first term of the academic year; (4) remote collaboration during the following months; (5) second visit to the partner institution in the second term; and (6) concluding stage of remotely compiling the final report during the closing weeks of the academic year.

#### 4. Key Points from the Second Section, “Case Studies and Lessons Learned from the PEERS Project in Southern Countries”

The six chapters describing PEERS experiences in developing countries (two in Bolivia, one in Burkina Faso, one in Madagascar, and two in Mozambique) reveal a common thread: a rich intercultural exchange that,



in the majority of cases, leads to a primarily constructive questioning of the paradigms guiding the action and reflection of trainee teachers. In regard to the good practices identified and the models put into use, becoming aware of issues of alterity, notably thanks to the human and theoretical framing of the teacher-researchers, enables a reduction in the negative impact of ethnocentrism, and contributes to solving the challenges linked to the encounter of very different cultures on both sides.

In relation to the contextual and axiological frameworks, the following observations are particularly noteworthy:

- A “Northern” culture benefiting from the development of economic, scientific, and technological means, established democracy, and social and judicial order, but troubled by a certain standardization of life that sometimes produces a crisis of values, particularly among young people, and which can partly explain forms of school dropout and a lack of motivation at school.
- A “Southern” culture benefiting from the ever-present need to adapt to constant changes and improve living conditions, and to tackle multiple social, political, and educational challenges, but troubled by innumerable obstacles of every order, which make changes difficult and sometimes lead to a dangerous devaluation of the individual and his/her physical and spiritual safety, with a consequent influence on the quality of school education.

In regard to the needs covered by the PEERS program, many of these projects have – in addition to the needs met for the teacher-researchers and students (*cf.* previous section) – the advantage of creating a significant social impact that is capable of generating motivation for positive and sustainable change within the communities and families involved, as long as an adequate way of supporting these communities over the long term can be found. Such is the case, for example, with the project developed

in Madagascar, which has long-term support from the “Zazakely” non-governmental organization (NGO)<sup>1</sup> that partners the project:

The Zazakely association, the third partner, is both the object and purpose of the research: largely financed by a Swiss NGO, its mission is to prevent the poorest from dropping out of school, by providing lunch to targeted pupils and giving them help with revision in addition to the education provided at the district’s public primary school (Gay & Razafimbelo, 2017).

This is also the case with the two Bolivian experiences discussed in the second section of the book. These were developed as two complementary projects, each in two periods, for a total duration of three years.

In three years, these projects influenced 28 students from three continents (15 in the first two steps and 13 in the last two steps), 5 faculty members from three universities and more than 50 families in three Andean communities (three communities in the first two steps and two communities in the last two steps) (Aliss, Hsieh, Silva, Morimoto & Gilles, 2017).

It is clear that the viability of these projects is affected not only by their duration, but also by the global context in which they are carried out. A context that can, for example in the case of the Bolivian communities, explain the inertia that was observed among some families at the start of the project.

In order to highlight the key ideas of these experiences and the relevance of the PEERS project in developing countries, we reproduce the following extracts of analysis, reflection and conclusion presented in the different chapters that constitute this section of the work.

From the chapter on the PEERS project in Madagascar, we recall the idea that the

experience of otherness is considered an essential dimension of the anthropological and historical approach that sets out to build knowledge about the culture of the other and of their own culture in return. However, there is no guarantee that the actor that embarks on this experience will use it as a step leading towards a questioning of the culture of the other and of his own and thus towards knowledge. Distancing

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1 For more information on the Zazakely association, see <<https://www.zazakelysuisse.ch/>>.

is the process by which social actors become aware that their usual behavior is only one possibility among many. Ethnocentrism is a fundamental trap here that needs to be steered around (since it is impossible to abolish it) and it is an epistemic obstacle, i.e. a barrier to understanding others (Gay & Razafimbelo, 2017).

The chapter focusing on the PEERS project carried out with partners in Mozambique enables an appreciation of the importance of foundational values in human relations:

Indeed, each person's experiences depend on his or her own values. Moreover, this experience has shown me something I was not aware before about Mozambique. Indeed, I also had the experience of otherness with people with whom I shared the same culture. I observed that sometimes, despite the fact that our culture is very different, if values such as tolerance and respect are present, we can create friendships (Fanny, a Swiss student cited by Afonso, 2017).

The chapters on the PEERS projects in Bolivia illustrate the importance of interuniversity cooperation, and the significance of the engagement with Andean communities in making possible sustainable development.

Successful execution was shown by the community members' increased knowledge and improved cooking practices, as well as their management of natural energy resources (Zurita & Vargas, 2017).

Working with real people on real projects made me realize there's much more to consider than just applying what is learned in the academic pursuit of a career, we need to be more aware of the history, needs and rights of communities we are working with and realize that you can teach as long as you notice you are learning (USIP student cited by Aliss, Hsieh, Silva, Morimoto & Gilles, 2017).

The chapter on the PEERS project in Burkina Faso explores the question of sustainable development from a double perspective: that of the members of the Burkina Faso group, and those of the Swiss group.

Mankind has to contend with a string of concerns, but water remains one of the major challenges of our century, present and future. [...]. It has revealed that children are enthusiastic about exchanges between them and able to change behavior patterns. Furthermore, aware of the importance of the resource, they are capable of taking the initiative when they are involved in the reflection and action (Clavel & Idani, 2017).

The final chapter, “The Added Value of an International and Intercultural Exchange: The PEERS-Mozambique Project,” expresses the added value of an international and intercultural exchange in the following words:

[...] to understand that in discovering the Other, it is in the end ourselves that we question, and that the encounter with diversity is a continual source of richness if we are ready to welcome it and challenge ourselves. [...] travel abroad thus enables a student to acknowledge numerous aspects they had not been aware of previously, to step away from their routine and their prejudices, and thus become a better teacher in their home country (Laffranchini Ngoenha, 2017).

## 5. Key Points from the Third Section, “Results of Research-Oriented PEERS Projects”

The “Results of Research-Oriented PEERS Projects” section includes seven chapters describing educational theory and practices projects carried out in developed countries. Some of these projects constitute true small-case research studies based on surveys and observations, while others are of a more theoretical nature, or are distinguished by their innovation in the area of teaching unit design.

The first chapter of this research-oriented PEERS projects section concerns the project carried out in collaboration with the National Institute of Education (NIE) in Singapore in the area of specialized education (Walker, Sermier & Tièche Christinat, 2017). The second chapter provides a comparative analysis between Switzerland and Spain in relation to gender stereotypes among primary school pupils (Bréau, Lentillon-Kaestner & Ribalta Alcade, 2017). The third looks at the development of teaching units focused on food in the context of education for sustainable development, and was carried out in collaboration with Lesley University in Boston (Pache, 2017). The fourth is a comparative analysis between Switzerland and US physical education, physical fitness, motivation, and self-concept in middle school students (Lentillon-Kaestner, Alicea & Braithwaite, 2017). The

fifth chapter considers one of the PEERS projects in partnership with Humboldt State University (HSU), where the participants constructed, taught, and improved teaching unit plans designed for marginalized pupils (Grigioni & Morago, 2017). The sixth PEERS project focuses on teaching urban ecology in schools in Switzerland (Lausanne) and in the United States (Boston), considering the design of an ecodistrict (Hertig, 2017). Finally, the concluding chapter of this third section explores how teachers from San Diego (US) and Lausanne (Switzerland) addressed challenges in multilingual and multicultural classes through a methodology based on pre- and post-reflection, interviews, and questionnaires to focus groups (Margonis, 2017).

In relation to the needs covered, the chapters relating to these R&I-focused PEERS projects, carried out in partnership with developed countries, demonstrate how they enable professors to expand their academic networks. The majority of these projects resulted in academic publications or communications at international congresses, sometimes including students.

[...] benefits for the faculty members: it was very interesting to discuss about researches and various teacher training strategies. Such an experiment permitted to enlarge our scientific networks and to initiate a fruitful collaboration (Pache, 2017).

[...] the project was presented at the PEERS Symposium organized as part of the World Association for Educational Research Conference (WAER), held in Reims in June 2012. In addition to the three trainers involved (Cristin Ashmankas, François Gingsins, and Philippe Hertig), the two Swiss students were able to participate in this research presentation thanks to support from the HEP Vaud. This was an important opportunity for them to gain their first experience of participating in a major conference, and of preparing a research communication (Hertig, 2017).

We also observe that these PEERS projects enabled the trainee teachers to have very enriching intercultural experiences while also requiring them to cope with the limitations of remote collaboration, where ICT was required in order to achieve the objectives of the international groups. These projects also enabled research and training to be integrated into the student curriculum. Different levels of research expertise were sometimes apparent within the international groups, as for example in the case of the partnership between the HEP Vaud and the NIE:

Involvement in the PEERS project provided an effective initiation into the research process for the Swiss participants while allowing the Singaporean participants to put their research skills into practice (Walker, Sermier & Tièche Christinat, 2017).

In addition to these transversal skills, the students also had to master a common working language: English. As one Swiss student noted, in the context of the partnership with the NIE in Singapore:

Thanks to the participation in this project, we were able to improve our level in English. Indeed, we trained it by communicating with our partners, but also by reading scientific articles in English (Isabelle, Manon, and Katya from Switzerland, cited by Walker, Sermier & Tièche Christinat, 2017).

This linguistic challenge also led to interesting realizations of benefit to the students' professional career:

When I observed the lessons in French I realized I don't get any of it and this would be horrible! It made me think of English learners in classrooms. This is very crucial; you must go out of your way to understand if the students are taking in the information (Testimony of a HSU student cited by Grigioni & Morago, 2017).

These R&I-focused PEERS projects are an opportunity for students to realize how diverse educational contexts can be, and to break with cultural stereotypes, as Pache (2017) highlights:

In cultural terms, the students emphasize openness to the world, an ability to move beyond prejudices and stereotypes. For example, the Swiss students were surprised to see that a school in Cambridge (Boston, MA) was based on the principles of sustainable development (locally produced organic food in the school canteen, environmentally-friendly heating and insulation, for example).

A willingness to discover new approaches is particularly apparent when the novelty concerns pedagogical practices, as was the case with the physical education projects developed with Humboldt State University in California:

In addition, beyond the research project, this international collaboration has allowed both teacher educators and students to discover other PE teaching practices, other

PE teaching conceptions, which has been highly beneficial for their professional development (Lentillon-Kaestner, Alicea & Braithwaite, 2017).

The resources available in other educational contexts very often surprise the members of the international groups, sometimes with unexpected effects on the development of research projects:

Although there were differences in the type of interventions and equipment available in Singapore and Switzerland, the exposure to different treatments opened the eyes of the participants to interventions of which they were not aware prior to the collaboration. In the project on the effects of dolphin therapy it was impossible for the Swiss student to collect data as dolphin therapy was not being used either in her professional context, or anywhere else in Switzerland (Walker, Sermier & Tièche Christinat, 2017).

In regard to the model of internationalizing teacher education proposed by the PEERS program, one-week visits to partner institutions play a major role in becoming aware of social codes and cultural particularities:

We liked to discover the richness of the different cultures in Singapore [...] In this project we collaborated with persons from each of the three majority cultural groups [...] confronted with the different cultures, we learned to respect different social codes, for example not looking at some men in the eye when talking, or not refusing a proposition too directly (Isabelle, Manon, and Katya from Switzerland, cited by Walker, Sermier & Tièche Christinat, 2017).

These intercultural differences sometimes constitute obstacles for interpersonal relations that must be overcome.

Some US participants expressed exasperation as they struggled to understand the direct communication style of their Swiss counterparts. Swiss participants reported frustration and surprise at the effort group communication required. However, over time as the groups collaborated on a common goal and continuously reflected, participants became more at ease with each other (Hertig, 2017).

For many students, the projects thus provide food for thought far beyond the aspects strictly linked to their research.

## 6. Conclusions

Through the key points outlined above, we have defined a series of characteristics of PEERS projects by using the quality approach paradigm as a framework for interpretation. We have discussed the requirements of this program for the internationalization of teacher education in the early twenty-first century: the development of international R&I project management skills; mastery of ICT and remote collaboration practices; the management of international groups; and continuous development of one's pedagogical and didactic behaviors through reflective practice and a spirit of research.

We have also shown two types of context in which PEERS projects take place: partnerships with institutions from developing countries, and partnerships with institutions from developed countries, the latter more often focused on empirical research. Despite the very different contexts, similarities due to the format proposed by the program have been observed: team building; discussions for defining a shared project and objectives; planning and sharing tasks over an academic year; management of an international R&I project in the area of educational theory and practice; the socioconstructivist approach; a one-week stay within a partner institution; inviting partners to one's own institution for a return one-week visit; cultural and pedagogical discoveries; remote collaborations using ICT; management of oneself and accounting for others in a multicultural group; emotional intelligence; collective assembly of a report; scholarly dissemination; building one's personal/professional network; and impact on one's practice. This group of very diverse characteristics, which is shared by all the PEERS projects, constitutes the DNA of the program.

In regard to the axiological framework that forms the background of the PEERS program, we return to the declaration of Walker, Sermier, & Tièche Christinat (2017), inspired by Gacel-Avila (2005):

One of the basic and fundamental functions of a university should be the fostering of global consciousness among students, to make them understand the relation



of interdependence between people and societies, to develop in students an understanding of their own and other cultures and respect for pluralism (p. 123).

We are confident that the PEERS program, through the international collaborations that it makes possible, will fulfill this function within teacher training institutions, and will enable trainee students to improve their understanding of the world, and their professional effectiveness, in a humanist approach.

But as we have also highlighted, another of the original aspects of the PEERS program is that it is equally beneficial to the professors involved in the projects. They also benefit, particularly in terms of expanding their research networks and developing opportunities for collaboration and international academic publications.

The PEERS program, like any internationalization program, has its costs, but in the context of teacher training this should be put into perspective by considering the potential impact on the generations of pupils that will be taught by the students when they qualify. As numerous accounts have demonstrated, experiencing an international PEERS program project over the course of an academic year is a highly significant experience.

Let us not forget that between its creation in 2011–12, up to 2016–17, no fewer than 81 PEERS projects have taken place over six academic years, involving nearly 500 students and over one hundred professors. Over these six years, the number of projects covered by the program has continued to grow, from four in 2011–12 to 25 PEERS projects in 2016–17.

We hope that the PEERS program will continue to grow in future, and that through this new form of internationalizing teacher education, those benefiting directly (future student teachers and their professors), and indirectly (generations of pupils and students taught by the direct beneficiaries), will develop the skills to collaborate intelligently, respecting the Other and his or her differences, in order to contribute with the critical distance necessary for a humanist society in an increasingly globalized, multicultural, and connected world.



# Bibliography

- Abélès, M. (2008). Politique et globalisation – Perspectives anthropologiques. *L'homme – Revue française d'anthropologie*, 185–186. doi: 10.4000/lhomme.24131.
- Abdallah-Preteuille, M. (2004). *L'éducation interculturelle*. Paris: PUF.
- Afonso, E. (2017). Cultural Issues in Teacher Education: From Multicultural Context to Inter/Cultural Journeys. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Agarwal, P., Said, M., Schoole, C., Sirozie, M., & de Wit, H. (2007). The Dynamics of International Student Circulation in a Global Context, in P. Altbach & P. McGill Peterson (Eds.), *Higher Education in the New Century: global challenges and innovative ideas*, pp. 109–144. Rotterdam: Sense.
- Agnew, J. (2008). *The Geography of the World Economy*. Oxford: Oxford UP.
- Aldrich, R. (2008). Education for survival: an historical perspective in History of Education. *Journal of the History of Education Society*. Vol. 39, Issue 1. Retrieved from: <[http://www.tandfonline.com/loi/thed20?open=44#vol\\_44](http://www.tandfonline.com/loi/thed20?open=44#vol_44)> [accessed 4 July 2015].
- Alfaro, C. (2008). Global student teaching experiences: Stories bridging cultural and inter-cultural difference. *Multicultural Education*, 15, 20.
- Alfaro, C., & Quezada, R. L. (2010). International teacher professional development: Teacher reflections of authentic teaching and learning experiences. *Teaching Education*, 21(1), 47–59.
- Aliss, E., Gilles, J.-L., Bruyninckx, M., Detroz, P., Cauchie, D., & Dethier, G. (2010). La création d'un centre spécialisé d'appui à l'évaluation pédagogique en Bolivie, comme résultat d'une alliance éducative internationale, in Castillo Moncada, D., Muniz Garcia, M.,

- Arriaga Méndez, J. (Eds.), *Memorias del: XVI Congreso Mundial de Ciencias de la Educación*. Monterrey, Nuevo León, México.
- Aliss, E., Gilles, J.-L., Galarza I., & Dethier, G. (2010). Le développement de projets semestriels interdisciplinaires en tant qu'instrument d'évaluation de performances complexes, in Castillo Moncada, D., Muniz Garcia, M., Arriaga Méndez, J. (Eds.), *Memorias del: XVI Congreso Mundial de Ciencias de la Educación*. Monterrey, Nuevo León, México.
- Aliss, E., Hsieh, R., Silva, R., Morimoto, D., & Gilles, J.-L. (2017). Conservation of Native Biodiversity (*Polylepis* and *Compsospiza*) and Improving the Quality of Life in an Andean Community of Bolivia. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Aliss, E., Zurita, M., Gilles, J.-L., Balderrama, J.-A., Da Silva, A., Prosperi, O., & Rijyevskaia, V. (2012). Educational intervention plan to promote protection of environment and improvement of living conditions: Reduction of firewood consumption from *Polylepis* forests (Andean Mountain forests), in Baillat, G., & al. (Eds.), *Livre des résumés du 17e Congrès de l'Association mondiale des sciences de l'éducation*. Université de Reims, France.
- Alisson, F.B., & Ulisses, E.C.C. (2011). Climate change, migration and health in Brazil. In E. Piguet (Ed.), *Migration and climate change* (pp. 49–73). UNESCO. Cambridge University Press.
- Alkharusi, H. (2008). Effects of classroom assessment practices on students' achievement goals. *Educational Assessment*, 13, 243–266. doi: 10.1080/10627190802602509.
- Allain, M., Deriaz, D., Voisard, N., & Lentillon-Kaestner, V. (2015). NOTEPS : Les effets de l'évaluation sommative sur les processus d'enseignement-apprentissage en éducation physique et sportive (EPS) au degré secondaire 1. *Rapport de recherche financée par l'Office Fédéral des Sports et le Service de l'Éducation Physique et du Sport du Canton de Vaud (SEPS)*. 31 Août, Lausanne : Haute Ecole Pédagogique du Canton de Vaud.
- Allemand, S. (2006). *Le développement durable*. Paris: Autrement.

- Allemand, S. (2007). *Les paradoxes du développement durable*. Paris: Le Cavalier Bleu.
- Altbach, P. G., Reisberg, L., & Rumbley L. E. (2009). *Trends in global higher education: Tracking an academic revolution*. Report prepared for the UNESCO 2009 World Conference on Higher Education. Paris, France: United Nations Educational, Scientific and Cultural Organization (246 pages).
- Altet, M. (2012). Comment articuler Formation et Recherche: l'exemple des apports des recherches du Réseau OPEN sur les pratiques enseignantes à la formation des enseignants. *Formation et pratiques d'enseignement en questions*, No. 14, pp. 37–45. Retrieved from <[http://www.revuedeshep.ch/site-fpeq-n/Site\\_FPEQ/14.html](http://www.revuedeshep.ch/site-fpeq-n/Site_FPEQ/14.html)>.
- Anderson, L. W., & Krathwohl, D. R. (2001). *A taxonomy for learning, teaching, and assessing*. New York: Longman.
- Anderson, O. R. (1997). A neurocognitive perspective on current learning theory and science instructional strategies. *Science Education*, 81, 67–89.
- Arcidiacono, B. (2011). *Cinq types de paix: une histoire des plans de pacification perpétuelle, XVII<sup>e</sup>-XX<sup>e</sup> siècles*. Paris: PUF.
- Armand-Fargues, M. (1996). L'environnement urbain entre écologie et urbanisme. In E. Le Bris (Ed.), *Villes du sud: sur la route d'Istanbul* (pp. 167–199). Paris: ORSTOM.
- Armstrong, F. (2002). The historical development of special education: humanitarian rationality or “wild profusion of entangled events”? *History of Education*, 31(5), 437–456.
- Arnold, R. (2005). *Empathic Intelligence: Teaching Learning Relating*. University of New South Wales Press.
- Astolfi, J.-P. (2008). *La saveur des savoirs*. Issy-les-Moulineaux: ESF.
- Audigier, F. (1995). Histoire et géographie: des savoirs scolaires en question entre les définitions officielles et les constructions des élèves. *Spirale*, 15, 61–89.
- Audigier, F. (2000). Concepts de base et compétences clés pour une éducation à la citoyenneté démocratique. Strasbourg: Conseil de l'Europe.

- Audigier, F. (2011). Education en vue du développement durable et didactiques. In F. Audigier, N. Fink, N. Freudiger & Ph. Haerberli (Eds.), *L'éducation en vue du développement durable: sciences sociales et élèves en débats* (Cahiers de la Section des Sciences de l'éducation de l'Université, No. 130) (pp. 47–71). Geneva: University of Geneva.
- Audigier, F., Fink, N., Freudiger, N. & Haerberli, P. (Eds.). (2011). *L'éducation en vue du développement durable: sciences sociales et élèves en débats* (Cahiers de la Section des Sciences de l'éducation de l'Université, No. 130). Geneva: University of Geneva.
- Babault, S. (2006). *Langue, école et société à Madagascar: Normes scolaires, pratiques langagières et enjeux sociaux*. Paris: L'Harmattan.
- Baena-Extremera, A., & Ruiz Montero, P. J. (2009). Tratamiento educativo de la coeducación y la igualdad de sexos en el contexto escolar y en especial en educación física. *Aula Abierta*, 2, 111–122.
- Baggini, J., & Fosl, P. S. (2007). *The Ethics Toolkit: A Compendium of Ethical Concepts and Methods*. Malden: Blackwell.
- Bakhtine, M. (1986). *Speech Genres and Other Late Essays*. Austin: University of Texas Press.
- Banks, J. A. (2001). *Cultural diversity and education* (4<sup>th</sup> ed.). Boston: Allyn & Bacon.
- Barles, S. (2010). Ecologies urbaine, industrielle et territoriale. In O. Coutard & J-P. Lévy (Eds.), *Ecologies urbaines* (pp. 61–83). Paris: Economica/Anthropos.
- Barley, N. (1983). *The innocent anthropologist: Notes from a mud hut*. Long Grove, IL: Waveland Press, Inc.
- Bates, J. (1997). *The effects of study abroad on undergraduates in an honors international program* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9815480).
- Baud P., Bourgeat, S., & Bras, C. (1998). *Dictionnaire de Géographie*. 2<sup>nd</sup> edition. Paris: Hatier.
- Béal V., Charvolin, F. & Morel Journal, C. (2011). La ville durable au risque des écoquartiers. Réflexions autour du projet New Islington à Manchester. *Espaces et sociétés*, 147, 77–97.

- Belalcazar, C. (2011). Integración de la perspectiva de género en las instituciones de formación docente: una guía para la igualdad de género en las políticas y prácticas de la formación docente. *Encuentro nacional de docentes en educación para el desarrollo*. UNESCO.
- Bem, S. L. (1981). Gender schema theory: a cognitive account of sex typing. *Psychological review*, 88, 354–364.
- Bensa, A. (2006). *La fin de l'exotisme: Essais d'anthropologie critique*. Toulouse: Anacharsis.
- Bereni, L., Chauvin, S., Jaunait, A., & Revillard, A. (2008). *Introduction aux gender studies. Manuel des études sur le genre*. Paris: De Boeck.
- Berger, P. L., & Luckmann, T. (2006). *The social construction of reality: a treatise in the sociology of knowledge*. Paris: Armand Colin.
- Bitsch, M.-T. (2008). *Histoire de la construction européenne de 1945 à nos jours*. Bruxelles: Éditions Complexe.
- Blais, J.-G., & Gilles, J.-L. (2011). *Évaluation des apprentissages et technologies de l'information et de la communication – Tome II*. Québec: Presses de l'Université de Laval.
- Blanc, N. (1998). 1925–1990: l'écologie urbaine et le rapport ville-nature. *L'Espace géographique*, 27(4), 289–299.
- Blaya, C., Gilles, J.-L., Plunus, G., & Tièche Christinat, C. (2011). Accrochage scolaire et alliances éducatives: vers une intégration des approches scolaires et communautaires. *Éducation et francophonie*, Vol. XXXIX: 2 (pp. 227–249).
- Bohm, A., Davis, D., Meares, D., & Pearce, D. (2002). *The Global Student Mobility 2025 Report: forecasts of the Global Demand for International Education*. Canberra: IDP.
- Bois, J., & Sarrazin, P. (2006). Les chiens font-ils des chats? Une revue de littérature sur le rôle des parents dans la socialisation de leur enfant pour le sport. *Sciences et motricité*, 57, 9–54.
- Bouchard, P., & Saint-Amant, J. C. (1996). *Garçons et filles: stéréotypes et réussite scolaire*. Montréal: les éditions du Remue-ménage.
- Bourdieu, P. (2004). *Science of science and reflexivity*. (R. Nice, Trans.). Chicago: University of Chicago Press. (Original work published 2001).

- Boutaud, B. (2009). Quartier durable ou éco-quartier? *Cybergéo: European Journal of Geography*. Retrieved from <<http://cybergeog.revues.org/22583>>.
- Bréau, A. (2013). *Quand la classe devient une équipe ou quand “JE” est remplacé par “NOUS”*. Retrieved from <<https://apprendreeneps.wordpress.com/2013/10/11/quand-la-classe-devient-une-equipe-ou-quand-je-est-remplace-par-nous/>>.
- Bréau, A. (2015). Bienvenida, Barcelona! *Zoom*, 25, 3–4.
- Bréau, A. (2016). PEERS, une expérience à vivre. *Zoom*, 25, 3–4.
- Bréau, A., & Lentillon-Kaestner, V. (2016). Lutter contre les stéréotypes de genre: un enjeu d’actualité et d’égalité pour l’école. *L’éducateur*, 5, 32–34.
- Bréau, A., Ribalta-Alcalde, D., & Lentillon-Kaestner, V. (2016). *Les stéréotypes de genre chez des élèves scolarisés en milieu primaire: une comparaison internationale entre Lausanne & Barcelone*. Communication présentée lors du colloque international, “Penser les nouvelles problématiques éducatives dans une perspective internationale”, 18 novembre 2016, Créteil.
- Bréau, A., & Lentillon-Kaestner, V. (2017). Les garçons face à la mixité et la non mixité en EPS. *eJRIEPS*, 40, 4–30.
- Bréau, A., Lentillon-Kaestner, V., & Ribalta Alcalde, D. (2017). Football, Dance, Dolls and Toy Cars: Comparative Analysis Between Switzerland and Spain in Relation to Gender Stereotypes Among Primary School Pupils. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Brook Napier, D. (2005). Implementing Educational Transformation Policies: Investigating Issues of Ideal Versus Real in Developing Countries, In: David P. Baker & Alexander W. Wiseman (Eds.), *Global Trends in Educational Policy* (International Perspectives on Education and Society, Vol. 6), Emerald Group Publishing Limited, pp. 59–98.
- Brookhart, S. M., & DeVoge, J. G. (1999). Testing a theory about the role of classroom assessment in student motivation and achievement. *Applied Measurement in Education*, 12(4), 409–425. doi: 10.1207/S15324818AME1204\_5.



- Brookhart, S. M., & Durkin, D. T. (2003). Classroom assessment, student motivation, and achievement in high school social studies classes. *Applied Measurement in Education*, *16*(1), 27–54. doi: 10.1207/S15324818AME1601\_2.
- Brundtland, H. G. (1987). *Our common future: the world commission on environment and development*. Oxford: Oxford University Press.
- Bruner, J. (1966). *Toward a Theory of Instruction*. Cambridge: Belknap Press.
- Bryan, L., & Atwater, M. (2002). Teacher beliefs and cultural models: a challenge for science teacher preparation programs. *Science Education*, *86*(6), 821–839.
- Bryman, A. (2004). *Social research methods* (2<sup>nd</sup> ed.). New York: Oxford University press.
- Buckworth, J., & Nigg, C. (2004). Physical activity, exercise, and sedentary behavior in college students. *Journal of American College Health*, *53*(1), 28–34. doi: 10.3200/JACH.53.1.28–34.
- Burke, J. C. (2001). Graduate school should require internships for teaching. *Chronicle of Higher Education*, *48*(6), B16. Retrieved from <<http://www.chronicle.com/article/Graduate-Schools-Should/23560>>.
- Butler, J. (2004). *Undoing gender*. New York: Routledge.
- Cannon, J. A., & Arnold, M. J. (1998). Student expectations of collegiate internship programs. *Journal of Education for Business*, *73*(4), 202–206.
- Carlson, J. S., & Widaman, K. F. (1988). The effects of study abroad during college on attitudes toward other cultures. *International Journal of Intercultural Relations*, *12*(1), 1–17. doi:10.1016/0147–1767(88)90003.
- Casini, A. & Piguët, S. (2015). *Enseigner ailleurs pour mieux enseigner chez soi. Importance des rencontres interculturelles dans la formation des enseignants* (Unpublished master's thesis). University of Teacher Education of State of Vaud, Lausanne, Switzerland.
- Castelli, D. M., & Beighle, A. (2007). The physical education teacher as school activity director. *Journal of Physical Education, Recreation, and Dance*, *78*(5), 25–28. doi: 10.1080/07303084.2007.10598020.

- Castelli, D. M., & Erwin, H. E. (2007). Chapter 4: A comparison of personal attributes and experiences among physically active and inactive children. *Journal of Teaching in Physical Education*, 26(4), 375–389.
- Castelli, D. M., & Valley, J. A. (2007). Chapter 3: The relationship of physical fitness and motor competence to physical activity. *Journal of Teaching in Physical Education*, 26(4), 358–374.
- Castillo Andrés, O., Romero Granados, S., Gonzalez Ramirez, T., & Campos Mesa, M. (2012). Gender equity in physical education: the use of information. *Sex roles*, 67, 108–121.
- Castillo, O. D. (2009). *Evaluacion de los factores psicosociales y didacticos relacionados con le equitad de genero en educacion fisica*. Doctoral thesis, University of Seville. Spain.
- Cavalier, R. (2015). Meta-ethics, Normative Ethics and Applied Ethics. Online Guide to Ethics and Moral Philosophy. Retrieved from: <[http://caae.phil.cmu.edu/cavalier/80130/part2/II\\_preface.html](http://caae.phil.cmu.edu/cavalier/80130/part2/II_preface.html)> [accessed 30 July 2015].
- Cavalli, M., Coste D., Crisan A., & Van de Ven, P.-H. (2009). *L'éducation plurilingue et interculturelle comme projet*. Strasbourg: Conseil de l'Europe. Retrieved from: <[www.coe.int/lang/fr](http://www.coe.int/lang/fr)>.
- CECR (2001). *Cadre européen commun de références pour les langues*. Strasbourg: Conseil de l'Europe.
- Chaponnière, M. (2011). Les rôles de sexe jouent-ils encore un rôle? *Questions au féminin*, 8–12.
- Charlot, B. (2014). 40 Education et globalisation. In J. Beillerot & N. Mosconi (Eds.), *Traité des sciences et pratiques de l'éducation* (pp. 479–488). Paris, France: Dunod. doi 10.3917/dunod.beill.2014.01.0479.
- Châtaigner, J.M. (2014). Madagascar: le développement contrarié. *Afrique Contemporaine*, 251, 107–124. 10.3917/afco.251.0107.
- Chauvière, M., & Plaisance, E. (2003). L'éducation spécialisée contre l'éducation scolaire? Entre dynamiques formelles et enjeux cognitifs. [SNE against general education? Between formal dynamics and cognitive issues]. In G. Chatelanat & G. Pelgrims (Eds.), *Education et enseignement spécialisé: ruptures et*

- intégrations [SNE: separations and integrations]* (pp. 29–55). Bruxelles: De Boeck.
- Chaves, R.M., Favier L., & Pelissier S. (2012). *L'interculturel en classe*. Grenoble: Presses universitaires de Grenoble (PUG).
- Cherney, I. D., Harper, H. J., & Winter, J. A. (2006). Nouveaux jouets: ce que les enfants identifient comme “jouets de garçons” et “jouets de filles”. *Enfance*, 3, 266–282.
- Chervel, A. (1988). L'histoire des disciplines scolaires. Réflexions sur un domaine de recherche. *Histoire de l'éducation*, 38, 59–119.
- Chevallard, Y. (1985). *La transposition didactique. Du savoir savant au savoir enseigné*. Grenoble: La Pensée sauvage.
- Chiland, C. (2003). *Le transsexualisme*. Paris: PUF.
- Childress, L. K. (2009). Internationalization plans for higher education institutions. *Journal of Studies in International Education*, 13(3), 289–309. doi:1028315308329804.
- CHIS (2007). California Health Interview Survey, UCLA: Center for Health Policy Research. Retrieved from: <<http://www.chis.ucla.edu>>.
- Chochoard, Y., Gilles, J.-L., & Rupp-Nantel, K. (2016). Le programme PEERS: un modèle novateur d'internationalisation dans les métiers de la formation – Le cas concret du projet PEERS HEP Vaud – UQAM 2015–2016 “Optimiser l'impact de la formation continue universitaire: développement d'un nouvel instrument d'évaluation”. Paper presented at the 50e congrès du Canadian Bureau of International Education (CBIE) – Internationalization for All, 14<sup>th</sup> November 2016. Ottawa, Canada. Retrieved from <<http://tinyurl.com/peers-cbie-2016>>.
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry*. San Francisco: Jossey Bass.
- Clanet, Cl. (2002). *L'interculturel: introduction aux approches interculturelle en éducation et en sciences humaines*. Toulouse: Presses Universitaires du Mirail.
- Clavel, L., & Idani, F. (2017). Learning Sequences About Water. In J.-L. Gilles (Ed.), *Linking Research and Training in*

- Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Clergeau, Ph. (2010). Ecologie urbaine et biodiversité. In O. Coutard & J.-P. Lévy (Eds.), *Ecologies urbaines* (pp. 154–165). Paris: Economica/Anthropos.
- Clifford, J. (1988). *The predicament of Culture. Twentieth-Century Ethnography, Literature and Art*. Cambridge: Harvard University Press.
- Coe, D. P., Pivarnik, J. M., Womack, C. J., Reeves, M. J., & Malina, R. M. (2006). Effect of physical education and activity levels on academic achievement in children. *Medicine & Science in Sports and Exercise*, 38(8), 1515–1519. doi: 10.1249/01.mss.0000227537.13175.1b.
- Cohen-Émerique, M. (1999a). L'approche interculturelle dans le processus d'aide. In J. Demorgon & E. Lipianski (Eds.), *Guide de l'interculturel en formation*. Paris: Retz, 228–240.
- Cohen-Émerique, M. (1999b). Le choc culturel: méthode de formation et outil de recherche. In J. Demorgon & E. Lipianski (Eds.), *Guide de l'interculturel en formation*. Paris: Retz, 301–315.
- Colás, M. P. (2007). La construcción de la identidad de género: enfoques teóricos para fundamentar la investigación e intervención educativa. *Revista de Investigación Educativa*, 25, 151–166.
- Colbert, V., Chiappe, C., & Arbolea, J. (2012). The New School Program: More and Better Primary Education for Children in Rural Areas in Colombia, In H. Levin & M. Lockheed (Eds.), *Effective Schools in Developing Countries*, Routledge Library Editions: Education, pp. 52–68.
- Collet, I. (2011). *Comprendre l'éducation au prisme du genre. Théories, questionnements, débats*. Genève: Carnets des sciences de l'éducation.
- Comenius Association (2017). *Comenius Association: European Network of Teacher Training Institutes*. Retrieved from: <<http://www.associationcomenius.org/spip.php?lang=fr>> [accessed 7 April 2017].

- Commission européenne. (2014a). *Comprendre les politiques de l'Union européenne – Education, formation, jeunesse et sport*. Luxembourg: Office des publications de l'Union européenne.
- Commission européenne. (2014b). *Comprendre les politiques de l'Union européenne – Recherche et innovation*. Luxembourg: Office des publications de l'Union européenne.
- Conférence Intercantonale de l'Instruction Publique de la Suisse romande et du Tessin (CIIP) (2010). *Plan d'étude Romand (PER)*. Neuchâtel: Secrétariat général de la CIIP. Retrieved from <<http://www.plandetudes.ch/web/guest/capacites-transversales1/#REFL>>.
- Cornelius, A. R. (2012). *Intentional Internationalization of Higher Education: A Strategic Institutional Response To Globalization*. Georgia Southern University: Electronic Theses & Dissertations. 396. Retrieved from <<http://digitalcommons.georgiasouthern.edu/etd/396>>.
- Corsaro, W. (2005). *The sociology of childhood*. Thousand Oaks, CA: Pine Forge.
- Coste, D., Moore D., & Zarate, G. (2009). *Compétence plurilingue et pluriculturelle*. Strasbourg: Conseil de l'Europe. Retrieved from: <[www.coe.int/lang/fr](http://www.coe.int/lang/fr)>.
- Costes, J., Houadec, V., & Lizan, V. (2008). Le rôle des professeurs de mathématiques et de physique dans l'orientation des filles vers des études scientifiques. *Educations et formations*, 77, 55–61.
- Council of Europe. (2016). *Human Rights*. Retrieved from: <<http://www.coe.int/en/web/portal/human-rights>> [accessed 7 August 2015].
- Crance, M. C., Trohel, J., & Saury, J. (2014). Construction d'une œuvre chorégraphique en collège et émergence d'une compagnie de danse scolaire. *Revue STAPS*, 103, 69–85.
- Cuddy, A. J., Fiske, S. T., & Glick, P. (2008). Warmth and competence as universal dimensions of social perception: the stereotype content model and the bias map. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 61–149). New York: Academic Press.
- Cuq, J.-P. (Ed.). (2003). *Dictionnaire de didactique du français langue étrangère et seconde*. Paris: CLE International.

- Currie, C., Zanotti, C., Morgan, A., Currie, D., de Looze, M., Roberts, C., & Barnekow, V. (Eds.). (2012). *Social determinants of health and well-being among young people. Health Behaviour in School-aged Children (HSBC) study: International report from the 2009/2010 survey*. Copenhagen, WHO Regional Office for Europe. Health Policy for Children and Adolescents, No. 6.
- Da Cunha, A. (2003). Développement durable: éthique du changement, concept intégrateur, principe d'action. In A. Da Cunha & J. Ruegg (Eds.), *Développement durable et aménagement du territoire* (pp. 13–28). Lausanne: Presses polytechniques et universitaires romandes.
- Da Cunha, A. (2011). Les écoquartiers, un laboratoire pour la ville durable: entre modernisations écologiques et justice urbaine. *Espaces et sociétés*, 144–145, 193–200.
- Dafflon-Nouvelle, A. (2006). *Filles-garçons. Socialisation différenciée ?* Grenoble: Presses universitaires.
- Dahl, Ø. (2006). *Signes et significations à Madagascar: des cas de communication culturelle*. Paris: Présence Africaine.
- Darling-Hammond, L. (1996). The right to learn and the advancement of teaching: Research, policy, and practice for democratic education. *Educational Researcher*, 25, 5–17.
- Darling-Hammond, L., LaPointe, M., Meyerson, D., Orr, M. T., & Cohen, C. (2007). *Preparing school leaders for a changing world: Lessons from exemplary leadership development programs*. Stanford, CA: Stanford University, Stanford Educational Leadership Institute.
- Davis, T.M. (Ed.). (1997). *Open doors, 1996/1997: Report on international educational exchange*. New York: Institute of International Education.
- Davisse, A. (2010). Filles et Garçons en EPS: différents et ensemble ? *Revue Française de Pédagogie*, 171, 87–91.
- Day, C. F. (2001). Développement professionnel et pratique réflexive: finalités, processus et partenariats. *Carrefours de l'éducation*, 2, 12, p. 40–54. doi: 10.3917/cdle.012.0040.

- De Boissieu, C. (2009). Sexes et genres à l'école maternelle: un essai de modélisation du concept de genre scolaire. *Recherches et éducatives*, 2, 23–43.
- De Miguel González, R., & Donert, K. (Eds.). (2014). *Innovative Learning Geography in Europe: New Challenges for the 21<sup>st</sup> Century*. Cambridge: Cambridge Scholars Publishing.
- Deardorff, D. (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of Studies in International Education*, 10, 241–266.
- Deci, E. L., & Ryan, R. M. (2000). The “what” and the “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. doi: 10.1207/S15327965PLI1104\_01.
- Deming, W. E. (1986). *Out of the crisis*. MIT-CAES.
- Denzin, N., & Lincoln, Y. (Eds.). (2005). *The sage handbook of qualitative research* (3<sup>rd</sup> ed.). Thousand Oaks: SAGE Publications.
- Dervent, F. (2015). The effect of reflective thinking on the teaching practices of preservice physical education teachers. *Issues in Educational Research*, 25(3), pp. 260–275. Retrieved from <<http://www.iier.org.au/iier25/dervent.pdf>>.
- Descola, P. (2005). *Par-delà nature et culture*. Paris: Gallimard.
- Develay, M. (1992). *De l'apprentissage à l'enseignement: pour une épistémologie scolaire*. Paris: ESF.
- Dewey, J. (1897). My Pedagogic Creed. *School Journal*, Vol. LIV, 3 (January 16), pp. 77–80.
- Dewey, J. (1899). *The School and Society*. Chicago: The University of Chicago Press.
- Diemer, A. (2014). L'EDD, une initiation à la complexité, la transdisciplinarité et la pédagogie critique. In A. Diemer & C. Marquat (Eds.), *Education au développement durable. Enjeux et controverses* (pp. 99–118). Louvain-la-Neuve: De Boeck.
- Donnelly, J. E., & Lambourne, K. (2011). Classroom-based physical activity, cognition, and academic achievement. *Preventative Medicine*, 52, S36-S42. doi: 10.1016/j.ypmed.2011.01.021.

- Dooly, M., & Villanueva, M. (2006). Internationalisation as a key dimension to teacher education, *European Journal of Teacher Education*, 29: 2, 223–240. doi: 10.1080/02619760600617409.
- Douglass, W. A., & Lyman, S. M. (1976). L'ethnie: structure, processus, saillance. *Cahiers Internationaux de Sociologie*, LXI, 197–220.
- Dowling-Naess, F. (2001). Narratives about young men and masculinities in organised sport in Norway. *Sport, education and society*, 6, 125–142.
- Dumont, R. (2008). *De la langue à la culture: un itinéraire didactique obligé*. Paris: L'Harmattan.
- Dunning, D., & Kruger, J. Unskilled and unaware of it: How difficulties in recognizing one's own incompetence lead to inflated self-assessments. *Journal of Personality and Social Psychology*, Vol. 77(6), Dec 1999, 1121–1134. Retrieved from: <<http://psycnet.apa.org/?fa=main.doiLanding&doi=10.1037/0022-3514.77.6.1121>> [accessed 30 August 2015]; Dunning-Kruger Effect. Retrieved from: <[http://rationalwiki.org/wiki/Dunning-Kruger\\_effect](http://rationalwiki.org/wiki/Dunning-Kruger_effect)> [accessed 30 August 2015].
- Duru-Bellat, M. (2011). Ce que la mixité fait aux élèves. In F. Milewski, F. & H. Périer (Eds.), *Les discriminations entre les femmes et les hommes* (pp. 233–251). Paris: Presse de Sciences Po.
- Education Quotations. (2015). *Education Quotations*. Retrieved from: <<https://www.google.ie/search?q=education+quotations&espv=2&biw=1202&bih=834&tbm=isch&tbo=u&source=univ&sa=X&ved=0CDEQsARqFQoTCOH07fG-8cYCFsMs2wodhP8BCw&dpr=1>> [accessed 15 August 2015].
- Elias, N., & Dunning, E. (1994). *Sport et civilisation: la violence maîtrisée*. Paris: Fayard.
- Embassy of the Republic of Singapore: Tokyo. (2004). *Swearing in Speech by Prime Minister Lee Hsien Loong*. Retrieved from <[http://www.mfa.gov.sg/content/mfa/overseasmission/tokyo/press\\_statements\\_speeches/2004/200408/press\\_200408\\_5.html](http://www.mfa.gov.sg/content/mfa/overseasmission/tokyo/press_statements_speeches/2004/200408/press_200408_5.html)>.
- Emelianoff, C. (2001). L'écologie urbaine entre science et urbanisme. *Quaderni*, 43, 85–99.



- Encyclopædia Britannica (Eds.). (2015). Globalization. Retrieved from: <<https://www.britannica.com/topic/globalization>> [accessed 10 July 2015].
- Encyclopædia Britannica (Eds.). (2015). Hannah Arendt: American Political Scientist. Retrieved from: <<https://www.britannica.com/biography/Hannah-Arendt>> [accessed 7 July 2015].
- Engstrom, D., & Jones, L. P. (2007). A broadened horizon: The value of international social work internships. *Social Work Education*, 26(2), 136–150. doi:10.1080/02615470601042631.
- Epiney, G. (2014). PEERS-Mozambique: une expérience unique. *Zoom*, 17, 26 September, 6–7.
- Erickson, F. (2004). Culture in society and in educational practices. In J. A. Banks & C. A. Banks (Eds.), *Multicultural education: Issues and perspectives* (pp. 31–60). Hoboken, NJ: John Wiley & Sons.
- Esposito, F., & Levrat, N. (Eds.). (2010). *Europe: de l'intégration à la Fédération*. Louvain-la-Neuve: Bruylant-Academia, Genève: Université de Genève.
- EUROPA, EC. (2015). *Enlargement*. Retrieved from: <[https://europa.eu/european-union/topics/enlargement\\_en](https://europa.eu/european-union/topics/enlargement_en)> [accessed 10 August 2017].
- European Agency for Development in SNE (EADSNE) (2014). *Country information for Switzerland*. Retrieved from <<https://www.european-agency.org/publications/ereports/sne-country-data-2012/sne-country-data-2012>>.
- European Agency for Development in SNE (EADSNE). (2010). *SNE: Country data 2010*. Odense, Denmark: Author.
- European Commission. (2009). *Gender and education (and employment): gendered imperatives and their implications for women and men. Lessons from research for policy makers*. Belgium: Brussels.
- European Commission. (2014). *Report on equality between women and men*. Belgium: Brussels.
- European Commission, EACEA. (2015). *Erasmus+*. Retrieved from: <[https://eacea.ec.europa.eu/erasmus-plus\\_en](https://eacea.ec.europa.eu/erasmus-plus_en)> [accessed 4 June 2015].

- European Commission, EACEA. (2015). *EU activities in the field of higher education*. Retrieved from: <[http://ec.europa.eu/education/policy/higher-education\\_en](http://ec.europa.eu/education/policy/higher-education_en)> [accessed 4 June 2015].
- European Parliament (2015). *Internationalisation of Higher Education*. Retrieved from: <[http://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL\\_STU\(2015\)540370\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2015/540370/IPOL_STU(2015)540370_EN.pdf)> [accessed 22 June 2017].
- Ewing, M. E., & Seefeldt, V. (1996). *Patterns of sport participation and attrition in American agency-sponsored sports*. In F. L. Smoll & R. E. Smith (Eds.), *Children and youth in sport: A biopsychosocial perspective* (pp. 31–45). Madison, WI: Brown & Benchmark.
- Fagrell, B., Larsson, H., & Redelius, K. (2012). The game within the game: girls' underperforming position in physical education. *Gender and education*, 24, 101–118.
- FAO (2015). *The State of Food Insecurity in the World 2015*. Retrieved from <<http://www.fao.org/3/a-i4646e/index.html>>.
- Fassa, F. (2013). L'éducation à l'égalité entre les sexes dans l'école romande, une question vive ou inerte? *Revue des HEP et des institutions assimilées de Suisse Romande et du Tessin*, 16, 13–29.
- Faulconer, T. (2003, April). "These kids are so bright!" *Pre-service teachers' insights and discoveries during a three week teaching practicum in Mexico*. Paper presented at the 2003 Annual Meeting of the American Educational Research Association. Available from ERIC document reproduction service, No. ED482507.
- Felix, C. and Saujat F. (2008). L'aide au travail personnel des élèves entre déficit de prescriptions et "savoirs méthodologiques": un double regard didactique et ergonomique. *Les Dossiers des sciences de l'éducation*, 19, 27–39.
- Fernandez, M. (2010). Investigating how and what prospective teachers learn through microteaching lesson study. *Teaching and Teacher Education: An International Journal of Research and Studies*, 26(2), 351–362.
- Ferréol, G., & Jucquois, G. (Eds.). (2003). *Dictionnaire de l'altérité et des relations interculturelles*. Paris: Armand Colin.

- Field, T., Diego, M., & Sanders, C.E. (2001). Exercise is positively related to adolescents' relationships and academics. *Adolescence*, 36(141), 105–110.
- Fischer, E. (2006). Robe et culottes courtes: l'habit fait-il le sexe? In A. Dafflon-Nouvelle (Ed.), *Filles-garçons: socialisation différenciée?* (pp. 241–266). Grenoble: Presses universitaires.
- Fjeldså, J., & Kessler, M. (2004). *Conservación de la biodiversidad de los bosques de Polylepis de las tierras altas de Bolivia. Una contribución al manejo sustentable en los Andes* (DIVA Technical Report 11). Santa Cruz: Editorial FAN.
- Fleer, M., & Ridgway, A. (Eds.). (2014). *Visual Methodologies and Digital Tools for Researching with Young Children: Transforming Visuality*. NY: Springer. Retrieved from: <<http://www.springer.com/us/book/9783319014685>> [accessed 10 August 2015].
- Fontaine, P. (2013). *Jean Monnet: Actualité d'un bâtisseur de l'Europe unie*. Lausanne: Fondation Jean Monnet pour l'Europe, Paris: Economica. Collection "Les Cahiers Rouges."
- Fontayne, P., Sarrazin, P., & Famose, J. P. (2001). Les pratiques sportives des adolescents: une différenciation selon le genre. *STAPS*, 55, 23–37.
- Fourez, G. (1997). Qu'entend par "îlot de rationalité"? Et par "îlot interdisciplinaire de rationalité"? *Aster*, 25, 217–225.
- Frederick, C. M., & Ryan, R. M. (1993). Differences in motivation for sport and exercise and their relationships with participation and mental health. *Journal of Sport Behavior*, 16, 125–145.
- Fredericks, J. A., & Eccles, J. S. (2005). Family socialization, gender and sport motivation and involvement. *Journal of sport and exercise psychology*, 27, 3–31.
- Freinet, C. (1956). *Les méthodes naturelles dans la pédagogie moderne*. Paris: Bourrellet.
- Freinet, C. (1960). *L'Éducation du Travail*. Paris: Editions Ophrys.
- Freire Institute (2017). Paulo Freire. Retrieved from: <<http://www.freire.org/paulo-freire/>> [accessed 17 March 2017].
- Friend, M. (2000). Myths and misunderstandings about professional collaboration. *Remedial and Special Education*, 21(3), 130.

- Furetière, A. (1690). *Essai d'un dictionnaire universel contenant généralement tous les mots français tant vieux que modernes, et les termes de toutes les sciences et des arts*. Retrieved from <<http://gallica.bnf.fr/ark:/12148/btv1b8626830v/f164.image.r=antoine%20furti%C3%A8re>>.
- Gacel-Avila, J. (2005). The internationalisation of higher education: A paradigm for global citizenry. *Journal of Studies in International Education*, 9, 121–136. doi:10.1177/1028315304263795.
- Gao, Z., Lodewyk, K., & Zhang, T. (2009). The role of ability beliefs and incentives in middle school students' intentions, cardiovascular fitness, and effort. *Journal of Teaching in Physical Education*, 28(1), 3–20.
- Gard, M. (2008). When a boy's got to dance: new masculinities, old pleasures. *Sport, education and society*, 13, 181–193.
- Gardner, H. (1983). *Frames of Mind: the Theory of Multiple Intelligence*. New York: Basic Book Inc.
- Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.
- Garfinkel, H. (1994). *Studies in ethnomethodology*. Cambridge: Polity Press. (Original 1967).
- Gay, D. (2017). Comment enseigner l'interculturel? L'éducateur. Forthcoming.
- Gay, D., & Razafimbelo, C. (2017). Learning Through Otherness Experiences in Malagasy Schools: ENS of Antananarivo, HEP Vaud and Zazakely Association Exchanges. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Gay, G. (2002). Culturally responsive teaching in special education for ethnically diverse students: Setting the stage, *International Journal of Qualitative Studies in Education*, 15(6), 613–629. doi:10.1080/0951839022000014349.
- Geertz, C. (1996). *Ici et là-bas: L'anthropologue comme auteur*. Paris: Métailié.

- Géraud, M.-O., Leservoisière, O., & Pottier, R. (2000). *Les notions clés de l'ethnologie, analyses et textes*. Paris: Armand Colin.
- Ghasarian, C. (Ed.). (2002). *De l'ethnographie à l'anthropologie réflexive*. Paris: Armand Collin.
- Gianettoni, L. (2011). Orientations scolaires et professionnelles en Suisse. *Questions au féminin*, 46–50.
- Gil-Robles, J. M., de Quadros, F., & Velo, D. (Eds.). (2014). *The European Union and social market economy*. Bari: Cacucci Editore.
- Gilles, J.-L. (2002). *Qualité spectrale des tests standardisés universitaires – Mise au point d'indices éducatifs d'analyse de la qualité spectrale des évaluations des acquis des étudiants universitaires et application aux épreuves MOHICAN check up '99* – Thèse de doctorat en Sciences de l'éducation (559 pages). Liège: Université de Liège, Faculté de psychologie et des sciences de l'éducation. Retrieved from <<http://hdl.handle.net/2268/2217>>.
- Gilles, J. L., Polson, D., & Reynders, S. (2009). L'accrochage scolaire... vers un dispositif de concertation intersectorielle. *Journal du droit des jeunes (JDJ)*, 290, 28–29. Retrieved from <[http://orbi.ulg.ac.be/bitstream/2268/10304/1/Article\\_JDJ\\_290.PDF](http://orbi.ulg.ac.be/bitstream/2268/10304/1/Article_JDJ_290.PDF)>.
- Gilles, J.-L. (2010a). *Qualité spectrale des tests standardisés universitaires*. Sarrebruck: Editions universitaires européennes.
- Gilles, J.-L. (2010b). Colloque “Alliances éducatives”. In Castillo Moncada D., Muniz Garcia, M., & Arriaga Méndez, J. (Eds.), *Memorias del: XVI Congreso Mundial de Ciencias de la Educación*. Monterrey (Nuevo León, México): Escuela de Ciencias de la Educación.
- Gilles, J.-L. (2014). *Foreword. PEERS Summer Symposium*, July 1–3 2014. Brussels, Belgium: SwissCore. Retrieved from <<http://tinyurl.com/PEERS-SS-2014-JLG>>.
- Gilles, J.-L. (2015). Un projet PEERS pour optimiser le transfert des acquis en formation continue. *Zoom*, 22, 24–25. Retrieved from <<http://tinyurl.com/zoom-peers-uqam>>.
- Gilles, J.-L. (2017). Origin, Foundations, Objectives and Original Aspects of the PEERS Program Linking Research and Training in Internationalization of Teacher Education. In J.-L. Gilles (Ed.),

*Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives.* Bern: Peter Lang.

- Gilles, J.-L. & Ramelot, P. (2010). Comment favoriser le partage d'expérience entre experts du terrain et chercheurs du monde académique pour faire progresser les connaissances en évaluation ?. In Castillo Moncada, D., Muniz Garcia, M., Arriaga Méndez, J. (Eds.), *Memorias del: XVI Congreso Mundial de Ciencias de la Educación.* Monterrey, Nuevo León, México.
- Gilles, J.-L., & Potvin, P. (2012). Les enjeux d'une approche qualité pour les acteurs d'alliances éducatives engagés dans une dynamique de partage d'expérience. In J.-L. Gilles, P. Potvin & C. Tièche Christinat (Eds.), *Les Alliances éducatives pour lutter contre le décrochage scolaire.* Bern: Peter Lang.
- Gilles, J.-L., & Renson, J. (2009). Pratiques réflexives en didactique générale: description d'un dispositif mis en place par la DGIE dans le cadre de la formation des enseignants du supérieur. *Puzzle*, 26, 38–43. Retrieved from <[http://orbi.ulg.ac.be/bitstream/2268/22287/1/article\\_final.pdf](http://orbi.ulg.ac.be/bitstream/2268/22287/1/article_final.pdf)>.
- Gilles, J.-L., & Soldevila, S. (2014a). PEERS Program Presentation. Paper presented at the *Rencontre d'automne de l'association Comenius.* Lausanne, Switzerland: Haute école pédagogique du canton de Vaud.
- Gilles, J.-L., & Soldevila, S. (2014b). PEERS: Student & Researcher Social Network Projects. Paper presented at the *Erasmus Congress and Exhibition 2014 (ERACON 2014)*, 28 April – 2 May 2014. Nicosia, Cyprus: University of Nicosia.
- Gilles, J.-L., & Soldevila, S. (2016). Internationaliser la formation des enseignants de demain à l'aide de projets collaboratifs orientés recherche: le programme PEERS. In O. C. Adigüzel (Ed.), *Abstract Book – XVIII AMSE-AMCE-WAER CONGRESS – Teaching and Training Today for Tomorrow*, 30 May – 2 June 2016 (pp. 73–77). Iskeshir, Turkey: Anadolu University. Retrieved from <<http://tinyurl.com/AMSE2016-JLG-SS-PEERS>>.

- Gilles, J.-L., Bosmans, C., Mainferme, R., Piette, S.-A., Plunus, G., Radermaecker, G., & Voos, M.-C. (2007). Apports d'un modèle de paramétrage des actions didactiques et d'une approche qualité dans le contexte du CAPAES. In Weiss-Lambrou R., & Laurier, M. (Eds.), *Livre des résumés du 24e congrès de l'Association Internationale de Pédagogie Universitaire (AIPU): Vers un changement de culture en enseignement supérieur – Regards sur l'innovation, la collaboration et la valorisation* (p. 106). Montréal: Université de Montréal. Retrieved from <<http://hdl.handle.net/2268/5900>>.
- Gilles, J.-L., Bosmans, C., Mainferme, R., Plunus, G., Radermaecker, G., & Voos, M.-C. (2007). *Apports d'un modèle de paramétrage des actions didactiques et d'une approche qualité dans un contexte de régulation de dispositifs de formation d'enseignants*. Liège: Université de Liège, unité de Didactique générale et intervention éducative (DGIE). Retrieved from <<http://docplayer.fr/3825273-Gilles-j-l-bosmans-c-mainferme-r-plunus-g-radermaecker-g-et-voos-m-c.html>>.
- Gilles, J.-L., Detroz, P., & Blais, J.-G. (2011). An international online survey of the practices and perceptions of higher education professors with respect to the assessment of learning in the classroom. *Assessment & Evaluation in Higher Education*, Vol. 36, No. 6, pp. 719–733(15).
- Gilles, J.-L., Detroz, P., Crahay, V., Tinnirello, S., & Bonnet, P. (2011). La plateforme ExAMS, un “assessment management system” pour instrumenter la construction et la gestion qualité des évaluations des apprentissages. In Blais, J.-G., & Gilles, J.-L. (Eds.), *Evaluation des apprentissages et technologies de l'information et de la communication* (pp. 11–40). Laval (Canada, Quebec): Presses de l'Université de Laval. Retrieved from <<http://tinyurl.com/exams-2011-preprint>>.
- Gilles, J.-L., Gay, D., Counet, J.-P., Tièche-Christinat, C., & Freiburghaus, A.-D. (2013). Alliances éducatives dans la lutte contre la déscolarisation et le décrochage dans les pays du Sud: le cas de l'école Zazakely à Madagascar. *Education & Formation*, 300, 109–122.

- Gilles, J.-L., Gutmann, C., & Tedesco, B. (2012a). The PEERS Concept, a New Approach to Internationalization of Teacher Education. In G. Baillat (Ed.), *Livre des résumés du 17e Congrès de l'Association mondiale des sciences de l'éducation* (p. 114). Reims: Université de Reims, France. Retrieved from <[http://www.univ-reims.fr/gallery\\_files/site/1/1697/1713/24344/34100.pdf](http://www.univ-reims.fr/gallery_files/site/1/1697/1713/24344/34100.pdf)>.
- Gilles, J.-L., Gutmann, C., & Tedesco, B. (2012b). Colloque “PEERS Projects, a New Key Component for the Internationalization of Teacher Education”. In G. Baillat (Ed.), *Livre des résumés du 17e Congrès de l'Association mondiale des sciences de l'éducation* (pp. 112–115). Reims: Université de Reims, France. Retrieved from <[http://www.univ-reims.fr/gallery\\_files/site/1/1697/1713/24344/34100.pdf](http://www.univ-reims.fr/gallery_files/site/1/1697/1713/24344/34100.pdf)>.
- Gilles, J.-L., Potvin, P., & Tièche Christinat, C. (Eds.). (2012). *Les Alliances éducatives pour lutter contre le décrochage scolaire*. Bern: Peter Lang.
- Gilles, J.-L., Tièche Christinat, C., & Delevaux, O. (2012). Origine, fondements et perspectives offertes par les alliances éducatives dans la lutte contre le décrochage scolaire. In Gilles, J.-L., Potvin, P., & Tièche Christinat, C. (Eds.), *Les alliances éducatives pour lutter contre le décrochage scolaire* (pp. 3–20). Bern: Peter Lang.
- Goleman, D. (1996). *Emotional Intelligence, why it can matter more than IQ*. London: Bloomsbury.
- Golombok, S., & Fivush, R. (1994). *Gender development*. Cambridge: University Press.
- Gorely, T., Holroyd, R., & Kirk, D. (2003). Muscularity, the habitus and the social construction of gender: towards a gender-relevant physical education. *British journal of sociology of education*, 24, 429–448.
- Goupil, G. (2007). *Comprendre la pédagogie Freinet. Genèse d'une pédagogie évolutive*. Mayenne: éditions Amis de Freinet (118 pages).
- Grigioni, S., & Morago, S. (2017). Intercultural Competence and Teaching Diverse Learners. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.



- Grimm, N. B., Grove, J. M., Pickett, S. T. A., & Redman, C. L. (2000). Integrated approaches to long-term studies of urban ecological systems. *BioScience*, 50(7), 571–584.
- Grin, G. (2003). *The battle of the single European market: Achievements and economic thought, 1985–2000*. London: Kegan Paul.
- Grin, G. (2014). *Méthode communautaire et fédéralisme: Le legs de Jean Monnet à travers ses archives*. Lausanne: Fondation Jean Monnet pour l'Europe.
- Grin, G. (2017). The Building of Europe: a Humanist Undertaking. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Grissom, J. B. (2005). Physical fitness and academic achievement. *Journal of Exercise Physiology Online*, 8(1), 11–25.
- Guérin, F., Marsh, H. W., & Famose, J. P. (2003). Construct validation of the Self-Description Questionnaire II with a French sample. *European Journal of Psychological Assessment*, 19(2), 142–150. doi: 10.1027//1015–5759.19.2.142.
- Guérin, F., Marsh, H. W., & Famose, J. P. (2004). Generalizability of the PSDQ and its relationship to physical fitness: The European French Connection. *Journal of Sport and Exercise Psychology*, 26(1), 19–38.
- Guerraoui, Z. & Troadec B. (2000). *Psychologie interculturelle*. Paris: Armand Colin.
- Guissepi, R. (Ed.) (2015). *The History of Education: A project by History World International, World History Center*. Retrieved from: <[http://history-world.org/history\\_of\\_education.htm](http://history-world.org/history_of_education.htm)> [accessed 10 August 2015].
- Guizada, B. (1996). *Inventario forestal y propuesta de manejo de bosques nativos andinos*. Caso: El Palmar, Chuquisaca. FUNDFORMA, Cochabamba. 40 p. (Informe no publicado).
- Gunnel, Y. (2009). *Ecologie et société*. Paris: Armand Colin.
- Hadis, B. (2005). Why are they better students when they come back? Determinants of academic focusing gains in the study abroad

- experience. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 11, 57–70.
- Hallal, P. C., Victora, C. G., Azevedo, M. R., & Wells, J. C. (2006). Adolescent physical activity and health: A systemic review. *Sports Medicine*, 36(12), 1019–1030. doi: 10.2165/00007256-200636120-00003.
- Hands, B., Larkin, D., Parker, H., Straker, L., & Perry, M. (2009). The relationship among physical activity, motor competence and health-related fitness in 14-year-old adolescents. *Scandinavian Journal of Medicine & Science in Sports*, 19(5), 655–663. doi: 10.1111/j.1600-0838.2008.00847.x.
- Hardin, M., & Greer, J. D. (2009). The influence of gender role socialization, media use, and sports participation on perceptions of gender appropriate sports. *Journal of sport behavior*, 32, 207–226.
- Hargreaves, J. A. (1994). *Sporting Females. Critical issues in the history and sociology of women's sports*. London: Routledge.
- Harper, R. (2004). The use of group work and presentations on field trips to facilitate active learning. In: Healey, M. and Roberts, J. (Eds.), *Engaging Students in Active Learning: Case Studies in Geography, Environment and Related Disciplines*, pp. 95–7, University of Gloucester. Retrieved from: <<http://www2.glos.ac.uk/gdn/active/student.htm>> [accessed 3 August 2015].
- Hart, R. (1997). *Children's participation: the theory and practice of involving young citizens in community development and environmental care*. London: Earthscan (208 pp.).
- Hashweh, M. (1996). Effects of science teachers' epistemological beliefs in teaching. *Journal of Research in Science Teaching*, 33(1), 47–63.
- Haute Ecole Pédagogique (2014). *Mission statement*. Lausanne: Haute école pédagogique du canton de Vaud.
- Haywood, K. M., & Getchell, N. (2014). *Life span motor development* (6<sup>th</sup> ed.). Champaign, IL: Human Kinetics.
- Held, D., McGrew, A., Goldblatt, D., & Perraton, J. (Eds.). (1999). *Global Transformations*. Stanford: Stanford University Press.

- Hennessey, A. B., S. Herzog, S. K., & Sagot, F. (2003). *Lista anotada de las aves de Bolivia*. Quinta edición. Santa Cruz de la Sierra: Asociación Armonía / BirdLife International.
- HEP Vaud (2004). *Référentiel de compétences professionnelles*. Lausanne: HEP Vaud. Retrieved from <<http://www.hepl.ch/files/live/sites/systemsite/files/interfilieres/referentiel-competences-2015-hep-vaud.pdf>>.
- HEP Vaud (2017). *Mission et organisation: la HEP en bref*. Lausanne: HEP Vaud. Retrieved from <<http://www.hepl.ch/cms/accueil/mission-et-organisation/hep-en-bref.html>>.
- HEP Vaud (2017). *Programme PEERS: Collaborer au delà des frontières*. Lausanne: HEP Vaud. Retrieved from <<http://www.hepl.ch/cms/accueil/actualites-et-agenda/actu-hep/peers-collaborer-au-dela-des-fro.html>>.
- Herrick, C. (2010). Lost in the field: ensuring student learning in the ‘threatened’ geography fieldtrip. *Area*, 42(1), pp. 108–16.
- Hertig, P. (2009). Les sciences humaines et sociales à l’école, un enjeu majeur pour l’intelligibilité du monde. *Prismes*, 11, 5–9.
- Hertig, P. (2011). Le développement durable: un projet multidimensionnel, un concept discuté. In A. Pache, P.-Ph. Bugnard & Ph. Haerberli (Eds.), “Education en vue du développement durable. Ecole et formation des enseignants: enjeux, stratégies et pistes” [Thematic issue]. *Formation et pratiques d’enseignement en question*, 14, 19–38.
- Hertig, P. (2012). *Didactique de la géographie et formation initiale des enseignants spécialistes. Conception et première évaluation du nouveau dispositif de formation initiale des enseignants de géographie du Secondaire supérieur à la HEP Vaud* (Géovisions No. 39). Lausanne: Institut de géographie de l’Université.
- Hertig, P. (2017). Teaching Urban Ecology in Schools in Switzerland and the United States: Considering the Design of an Ecodistrict. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.

- Hertig, P. (2017). La géographie dans le Plan d'études romand: une discipline en tension entre des finalités ambitieuses et des pratiques éloignées des visées curriculaires. In C. Vergnolle Mainar & O. Tripiet-Mondancin (Eds.), *Programmes et disciplines scolaires. Quelles reconfigurations curriculaires ?* (pp. 99–108). Toulouse: Presses universitaires du Midi.
- Hirst, P., & Thompson, G. (1996). *Globalization in questions: the international economy and the possibilities of governance*. Cambridge, UK: Polity Press.
- Hively, K., & El Alayli, A. (2014). “You throw like a girl”: the effect of stereotype threat on women’s athletic performance and gender stereotypes. *Psychology of sport and exercise, 15*, 48–55.
- Huanca, N. E., Hosner, P. A. & B. Hennessey (2009). Nest, vocalizations, and conservation status of endangered Cochabamba Mountain-Finches (*Compsospiza garleppi*). *The Wilson Journal of Ornithology, 80*(3) 215–223.
- Hurley, J., Proctor, & J., Ford, R. (1999). Collaborative inquiry at a distance: Using the Internet in geography education. *Journal of Geography, 98*(3), pp. 128–40.
- Hyde, J. S., & Jaffee, S. (2000). Becoming a heterosexual adult. *Journal of social issues, 56*, 283–296.
- Ibisch, P. L., & Mérida, G. (Eds.). (2004). *Biodiversity: The richness of Bolivia. State of knowledge and conservation*. Santa Cruz: Ministry of Sustainable Development, Editorial FAN.
- Idani, T. F. (2009). *L'Homme et l'eau dans la vallée du Nakambé au Ganzourgou/ Burkina Faso. (Man and water in the Nakambé valley in Ganzourgou/Burkina Faso)* (Unpublished PhD thesis). Bordeaux 3.
- Idani, T.F. (2014a). La question du développement durable au préscolaire et au primaire au Burkina Faso, in T. Karsenti (Ed.), Proceedings of the 5<sup>th</sup> International Symposium of the RIFEFF, *la Francophonie en question*. Montreal (Canada): RIFEFF.
- Idani, T.F. (2014b). Changement climatique et adaptation paysanne au Burkina Faso: le cas de Saria au centre-ouest, in B. Charlerly de la Masselière & B. Calas (Eds.), *À la croisée du transect. De la*

- montagne à la ville. Eloge d'une géographie tropicale traversière.*  
Toulouse: Presses universitaires du Mirail.
- Ioannidou, F., & Konstantikaki, V. (2008). Empathy and emotional intelligence: What is it really about? *International Journal of Caring Sciences*, 1(3): 118–123.
- Jaakkola, T. T., Sääkslathi, A., Yli-Piipari, S., Manninen, M., Watt, A., & Liukkonen, J. (2013). Student motivation associated with fitness testing in the physical education context. *Journal of Teaching in Physical Education*, 32(3), 270–286.
- Kent, M., Gilbertson, D.D., & Hunt, C. (1997) Fieldwork in geography teaching: a critical review of the literature and approaches, *Journal of Geography in Higher Education*, 21(3), pp. 313–32.
- Kessler, M., & Driesch, P. (1993). Causa de Historia de la destrucción de Bosques Altoandinos en Bolivia. *Ecología en Bolivia*, No. 21, 1–18.
- Ki-Zerbo J. (2013). *A quand l'Afrique? Entretien avec René Holenstein.* Lausanne: Edition d'en bas.
- Kilpatrick, W. H. (1918). The project method. *Teacher College Record*, 19, 319–335.
- Kissock, C., & Richardson, P. (2010). Calling for action within the teaching profession: it is time to internationalize teacher education, *Teaching Education*, 21: 1, 89–101. doi: 10.1080/10476210903467008.
- Kitsantas, A., & Meyers, J. (2001). *Studying abroad: Does it enhance college student cross cultural awareness?* Paper presented at the combined Annual Meeting of the San Diego State University and the U.S. Department of Education Centers for International Business Education and Research (CIBER 2001), San Diego, CA, March 28–31. Retrieved from <<https://eric.ed.gov/?id=ED456648>>.
- Kitzinger, J., Markova, I., & Kalampalikis, N. (2004). Qu'est-ce que les focus groups? *Bulletin de psychologie*, 47, 237–243.
- Knight, J. L., & Guiliano, T. A. (2001). He's a laker, she's a "looker": the consequences of gender stereotypical portrayals of male and female athletes by the print media. *Sex roles*, 45, 217–229.

- Knoll, M. (1997). The project Method: Its Vocational Education Origin and International Development. *Journal of Industrial Teacher Education*, Vol. 34, No. 3.
- Knouse, S. B., & Fontenot, G. (2008). Benefits of the business college internship: A research review. *Journal of Employment Counseling*, 45(2), 61–66.
- Kohlberg, L. (1966). A cognitive-developmental analysis of children's sex-role concepts and attitudes. In E. E. Maccoby (Ed.), *The development of sex differences* (pp. 82–173). Stanford: University Press.
- Kolb, D.A. (1984). *The Experiential Learning Theory of Development*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Kontopodis, M., Wulf, C., & Fichtner, B. (2011). Children, Development and Education: Cultural, Historical, Anthropological Perspectives In Fler, M. & I. Pramling Samuelsson (Eds.), *International perspectives on early childhood education and development*. Retrieved from: <<http://www.springer.com/series/7601>> [accessed 12 August 2015].
- Koziol, S., Greenberg, J., Williams, L., Niehaus, E., & Jacobson, C. (2011). Internationalizing Teacher Education: A Systemic Initiative. Paper presented at the *International Conference on Education for Teaching*. Glasgow, Scotland.
- Kuhn, T. S. (1983). *La structure des révolutions scientifiques*. Paris: Flammarion.
- Ladson-Billings, G. (1995). But that's just good teaching! the case for culturally relevant pedagogy. *Theory into Practice*, 34(3), 159–165.
- Laffranchini Ngoenha, M. (2017). The added value of international exchange. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Laure, P. (2007). *Activités physiques et santé*. Paris: éditions Ellipses.
- Le Goff, C. (2002). Un tremplin pour réussir en EPS. *Revue EPS*, 295, 40–44.
- Le Maner-Idrissi, G. (1997). *L'identité sexuée*. Paris: Dunod.

- Le Maner-Idrissi, G., & Renault, L. (2006). Développement du “schéma de genre”: une asymétrie entre filles et garçons? *Enfance*, 3, 251–263.
- Le Robert (2003). *Dictionnaire*. Paris: VUEF.
- Leaper, C., & Friedman, C. K. (2006). The socialization of gender. In J. E. Grusec, & P. D. Hastings (Eds.), *Handbook of socialization: theory and research* (pp. 561–587). New York: Guilford Press.
- Lee, A. M., Carter, J. A., & Xiang, P. (1995). Children’s conceptions of ability in physical education. *Journal of Teaching in Physical Education*, 14(4), 384–393.
- Lemay, V. (2011). La propension à se soucier de l’Autre: promouvoir l’interdisciplinarité comme identité savante nouvelle, complémentaire et utile. In F. Darbellay & T. Paulsen (Eds.), *Au miroir des disciplines. Réflexions sur les pratiques d’enseignement et de recherche inter- et transdisciplinaires* (pp. 25–47). Bern: Peter Lang.
- Lemos, M. S., & Verissimo, L. (2014). The relationships between intrinsic motivation, extrinsic motivation, and achievement, along elementary school. *Procedia – Social and Behavioral Sciences*, 112, 930–938. doi: 10.1016/j.sbspro.2014.01.1251.
- Lenclud, G. (1992). Le grand partage ou la tentation ethnologique. In G. Althabe, D. Fabre, & G. Lenclud (Eds.), *Vers une ethnologie du présent*. (pp. 9–37). Paris: Editions de la Maison des Sciences de l’Homme.
- Lentillon-Kaestner, V., Alicea, S., & Braithwaite, R. (2017). A Comparative Analysis between Switzerland and US Physical Education Physical Fitness, Motivation & Self-Concept in Middle School Students. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Lentillon, V. (2009). Les stéréotypes sexués relatifs à la pratique des activités physiques et sportives chez les adolescents français et leurs conséquences discriminatoires. *Bulletin de psychologie*, 62, 15–28.

- Lepp, A., Barkley, J. E., Sanders, G. J., Rebold, M., & Gates, P. (2013). The relationship between cell phone use, physical and sedentary activity, and cardiorespiratory fitness in a sample of U.S. college students. *International Journal of Behavioral Nutrition and Physical Activity*, 10(1), 79. Retrieved from: <<http://www.ijbnpa.org/content/10/1/79>>.
- Leservoisier, O. (Ed.). (2005). *Terrains ethnographiques et hiérarchies sociales, retour réflexif sur la situation d'enquête*. Paris: Karthala.
- Leutwyler, B. (2014). Between Myths and Facts: The Contribution of Exchange Experiences to the Professional Development of Teachers. *Journal of Curriculum and Teaching*, 3(2), 106–117.
- Levesque, C., Copeland, K. J., & Pattie, M. D. (2010). Intrinsic and extrinsic motivation. *International Encyclopedia of Education* (3<sup>rd</sup> ed.), 618–623. doi: 10.1016/B978-0-08-044894-7.00612-6.
- Lévi-Strauss, C. (1976). Jean-Jacques Rousseau, founder of the sciences of man. In *Structural Anthropology*, Vol. 2 (M. Layton, Trans.). Chicago, IL: University of Chicago Press. (Original work published 1962).
- Lewis, A. E. (2009). *Race in the schoolyard: Negotiating the color line in classrooms and communities*. New Brunswick, NJ: Rutgers University Press.
- Lewis, T.L., & Niesenbaum, R.A. (2005). The benefits of short-term study broad. *The Chronicle of Higher Education*, 51(39), B20.
- Leyens, J., Yzerbyt, V., & Schadron, G. (1996). *Stéréotypes et cognition sociale*. Bruxelles: Mardaga.
- Liebig, B., Rosenkranz-Fallegger, E., & Meyerhofer, U. (2009). *Handbuch gender-kompetenz. Manuel de compétences dans le domaine du genre. Guide pratique pour les universités et les hautes écoles spécialisées*. Zurich: VDF.
- Lincoln, Y. (1997). Self, subject, audience, text: Living at the edge, writing in the margins. In W. G. Tierney & Y. Lincoln (Eds.), *Representation and the text – Re-framing the narrative voice* (pp. 37–55). New York: State University of New York Press.



- Lischer, R. (2007). Analyse statistique de la situation de l'offre en pédagogie spécialisée. [Statistical analysis of the special education provision]. *Pédagogie spécialisée*, 2, 18–23.
- Lopez-Villar, C. (2011). Una propuesta para la coeducación desde el deporte y la danza. *Didáctica de la educación física*, 37, 78–91.
- Lopez-Villar, C. (2014). Masculinidades lúdicas. La construcción de identidades masculinas desde la publicidad infantil. In J. Piedra (Ed.), *Generos, masculinidades y diversidad* (pp. 100–130). Universidad Octaedro.
- Loreman, T. (2010). Essential inclusive education-related outcomes for Alberta preservice teachers. *Alberta Journal of Educational Research*, 56(2), 124–142.
- Lortie, D. (1975). *Schoolteacher: A sociological study*. Chicago: University of Chicago.
- Lotan, M., Merrick, J., & Carmeli, E. (2005). Physical activity in adolescence: A review with clinical suggestions. *International Journal of Adolescent Medicine and Health*, 17(1), 13–21. doi: 10.1515/IJAMH.2005.17.1.13.
- Luehmann, A. (2007). Identity development as a lens to science teacher preparation. *Science Education*, 91(5), 822–839.
- Lund, J. L., & Kirk, M. F. (2010). *Performance-based assessment for middle and high school physical education (2<sup>nd</sup> ed.)*. Champaign, IL: Human Kinetics.
- Lyons, J. (2015). *Paulo Freire's Educational Theory*. Retrieved from: <<http://www.newfoundations.com/GALLERY/Freire.html>> [accessed 17 July 2015].
- Maccoby, E. E. (1990). Le sexe, catégorie sociale. *Actes de la recherche en sciences sociales*, 83, 16–26.
- Mahon, J. (2010). Fact or fiction? Analyzing institutional barriers and individual responsibility to advance the internationalization of teacher education, *Teaching Education*, 21: 1, 7–18, doi: 10.1080/10476210903466893.
- Mailos, M.-F. (2000). Les stages d'éducation comparée. In D. Groux & N. Tutiaux-Guillon, *Les échanges internationaux et la comparaison en éducation: pratique et enjeux*. Paris: L'Harmattan, 181–187.

- Maingain, A., Dufour, B. & Fourez, G. (2002). *Approches didactiques de l'interdisciplinarité*. Brussels: De Boeck.
- Mäkitalo, A., Jakobsson, A., & Säljö, R. (2009). Learning to reason in the context of socioscientific problems. In K. Kumpulainen, C. Hmelo-Silver & M. César (Eds.), *Investigating Classroom Interaction: Methodologies in Action* (pp. 7–26). Rotterdam: Sense Publishers.
- Malina, R. M. (2001). Physical activity and fitness: Pathways from childhood to adulthood. *American Journal of Human Biology*, 13(2), 162–172. doi: 10.1002/1520-6300(200102/03)13:2<162::AID-AJHB1025>3.0.CO;2-T.
- Malrieu, P. (2003). *La construction du sens dans les dires autobiographiques*. Toulouse: Erès.
- Mansilla, V. B., & Jackson, A. (2011). *Educating for Global Competence: Preparing Our Youth to Engage the World*. New York: Council of Chief State School Officers' EdSteps Initiative & Asia Society Partnership for Global Learning.
- Mansour, N. (2009). Science teachers' beliefs and practices: Issues, implications and research agenda. *International Journal of Environmental and Science Education*, 4(1), 25–48.
- Margonis, R. (2017). Ideology, Culture and Language Preparing International and Critically Conscious Teachers. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Markic, S., & Eilks, I. (2010). First-year science education student-teachers' beliefs about student- and teacher-centeredness parallels and differences between chemistry and other science teaching domains. *Journal of Chemical Education*, 87, (3), 335–669.
- Marron, S., & Descoedres, M. (2015). Just Little things as to how to Include... *Journal of the Comenius Association*, No. 24, pp. 35–37.
- Marsh, H. W. (1996). Physical Self Description Questionnaire: Stability and discriminant validity. *Research Quarterly for Exercise & Sport*, 67(3), 249–264.

- Marsh, H. W., & Martin, A. J. (2011). Academic self-concept and academic achievement: Relations and causal ordering. *British Journal of Educational Psychology, 81*(1), 59–77. doi: 10.1348/000709910X503501.
- Marsh, H. W., Martin, A. J., & Jackson, S. (2010). Introducing a short version of the Physical Self Description Questionnaire: New strategies, short-form evaluative criteria, and applications of factor analyses. *Journal of Sport and Exercise Psychology, 32*(4), 438–482.
- Martin, C. L., & Halverson, C. F. (1981). A schematic processing model of sex typing and stereotyping in children. *Child development, 52*, 1119–1134.
- Martinand, J.-L. (1986). *Connaitre et transformer la matière*. Bern: Peter Lang.
- Martineau, S. (2005). L'observation en situation: enjeux, possibilités et limites. *Recherches qualitatives, 2*, 7–17.
- Marx, H. and Moss, D. (2001). Please mind the culture gap: intercultural development during a teacher education study abroad, *Journal of Teacher Education, 62*: 35.
- Marzano, R.J. (2011). Art and Science of Teaching / The Perils and Promises of Discovery Learning, *Educational Leadership*, September 2011, 69(1), pp. 86–7.
- Mayer, R. (2004). Should there be a three-strikes rule against pure discovery learning? The case for guided methods of instruction. *American Psychologist, 59*(1), pp. 14–9.
- McCormack, W. (2004). New direction in study abroad: Opportunities for students in the professional schools. *The Journal of Higher Education, 37*, 369–376.
- McHale, M., Crouter, A. C., & Whiteman, S. D. (2003). The family contexts of gender development in childhood and adolescence. *Social Development, 12*, 125–148.
- McKenzie, T. L., Catellier, D. J., Conway, T., Lytle, L. A., Grieser, M., Webber, L. A., & Elder, J. P. (2006). Girls' activity levels and lesson contexts in middle school PE: TAAG baseline. *Medicine and*

- Science in Sports & Exercise*, 38(7), 1229–1235. doi: 10.1249/01.mss.0000227307.34149.f3.
- McManus, R., & O'Reilly, G. (2016). Heritage Tourism and the Commodification of Contested Spaces: Ireland and the Battle of the Boyne Site. In G. Hooper (Ed.), *Heritage and Tourism in Britain and Ireland: Conservation, Nation, Identity*. London: Palgrave Macmillan Press.
- McManus, R., & O'Reilly, G. (2011). Internationalization and Geography Fieldwork: Opportunities for Skills Enhancement, *Journal of the Comenius Association*, No. 20, September 2011, pp. 20–25.
- McManus, R., & O'Reilly, G. (2013). International Student Collaboration in Geography: Learning by Doing Together. *Journal of the Comenius Association*, No. 22, pp. 23–27.
- Meirieu, P. (2006). *L'éducation et le rôle des enseignants à l'horizon 2020*. UNESCO Report: Horizon 2020. Retrieved from <<http://www.meirieu.com/RAPPORTSINSTITUTIONNELS/UNESCO2020.pdf>>.
- Melhuus, M. (2003). Issues of relevance: anthropology and the challenges of cross-cultural comparison. In: R.G. Fox, A. Gringrich (Eds.), *Anthropology by Comparison*. (pp. 70–91) London, New York: Routledge.
- Merrick, J., Morad, M., Halperin I., & Kandel, I. (2005). Physical fitness and adolescence. *International Journal of Adolescent Medicine and Health*, 17(1), 89–91. doi: 10.1515/IJAMH.2005.17.1.89.
- Michalet, C.-A. (2004). *Qu'est-ce que la Mondialisation? Petit traité à l'usage de ceux et celles qui ne savent pas encore s'il faut être pour ou contre*. Paris, France: La Découverte.
- Michalet, C.-A. (2007). *Mondialisation, la grande rupture*. Paris, France: La Découverte.
- Michaud, P. A., & Narring, F. (1996). La condition physique des enfants et des adolescents: Comment la mesurer? Une revue de littérature. *Archives de Pédiatrie*, 3(5), 497–504. doi: 10.1016/0929-693X(96)86412-8.
- Mieyaa, Y., & Rouyer, V. (2010). Genre, identité sexuée et émergence de cultures enfantines différenciées à l'école maternelle. *Actes*

- du colloque international*. Ministère de la Culture et de la Communication, Paris.
- Mieyaa, Y., Rouyer, V., & le Blanc, A. (2010). Identités sexuées et expériences scolaires: le point de vue des jeunes enfants scolarisés à l'école maternelle. In V. Rouyer, S. Croity-Belz & Y. Prêteur (Eds.), *Genre et socialisation de l'enfance à l'âge adulte: expliquer les différences, penser l'égalité* (pp. 63–72). Toulouse: Erès.
- Ministry of Economy and Finance (MEF) (2007). *General population and housing census 2006*. Ouagadougou, Burkina Faso: National Institute of Statistics and Demography (INSD).
- Ministry of Economy and Finance (MEF) (2010). *Strategy for accelerated growth and sustainable development (SCADD)*. Ouagadougou, Burkina Faso.
- Ministry of Economy and Finance (MEF) (2013). *Performance report for the year 2013*. National Technical Secretariat of the SCADD (STN/SCADD). Ouagadougou, Burkina Faso: MBA group.
- Ministry of Education (MOE) (2004). *Enhancing support for children with special needs*. Retrieved from <<http://www.moe.gov.sg/media/press/2004/pr20040918.htm>>.
- Ministry of Education (MOE) (2017). Resources to support mainstream students with special needs. Retrieved from <<https://www.moe.gov.sg/education/programmes/resources-to-support-mainstream-students-with-special-needs>>.
- Ministry of water, hydraulic developments and sanitation (MEAHA) (2013). *Annuaire statistique 2012 de l'eau potable et de l'assainissement des eaux usées et excréta*. Ouagadougou: National Office of Water and Sanitation (ONEA).
- Moerman, M. (1990). *Talking culture: ethnography and conversation analysis*. Philadelphia: University of Pennsylvania Press.
- Moerman, M. (1994). Le fil d'Ariane et le filet d'Indra: Réflexions sur ethnographie, ethnicité, identité, culture et interaction. In C. Labat & G. Vermès (Eds.), *Qu'est-ce que la recherche interculturelle ? Du contact à l'interaction* (pp. 129–146). Paris: Editions Fontenay St-Cloud, L'Harmattan.
- Monnet, J. (1976). *Mémoires*. Paris: Fayard.

- Moreau Desfarges, P. (2016). *La mondialisation*. Paris, France: PUF.
- Moreno, C. (2006). Formes de mixité et inégalités de réussite entre filles et garçons. In G. Cogérino (Ed.), *La mixité en EP. Paroles, réussites, différenciations*. (pp. 40–54) Paris: Editions Revue EPS.
- Morgan, M., Gibbs, S., Maxwell, K., & Britten, N. (2002). Hearing children's voices: methodological issues in conducting focus groups with children aged 7–11 years. *Qualitative research*, 25, 5–12.
- Morin, E. (1999). *La tête bien faite*. Paris: Seuil.
- Morin, E. (2005). *Introduction à la pensée complexe*. Paris: Seuil.
- Morrow, J., Zhu, W., Franks, B. D., Meredith, M. D., & Spain, C. (2009). 1958–2008: 50 years of youth fitness tests in the United States. *Research Quarterly for Exercise and Sport*, 80(1), 1–11. doi: 10.1080/02701367.2009.10599524.
- Motl, R. W. (2007). Chapter 2: Theoretical models for understanding physical activity behavior among children and adolescents: Social cognitive theory and self-determination theory. *Journal of Teaching in Physical Education*, 26(4), 350–357.
- Mucchielli, R. (1998). *L'analyse de contenu: documents et des communications*. Paris: ESF.
- Muller, N., & Olgiati, A. (2016). *Les stéréotypes de genre chez les élèves de cycle 1 dans les jouets et les activités sportives: une étude de cas entre Lausanne et Barcelone*. Master thesis, unpublished, Lausanne.
- Murphy, F., & Descoedres, M. (2016). Towards Quality Physical Education in Ireland and Switzerland. *Journal of the Comenius Association*, No. 25, pp. 22–24.
- Naish, M., Rawling, E., Hart, C. (2002) The enquiry-based approach to teaching and learning geography, In Smith, M. (Ed.), *Teaching Geography in secondary schools: a reader*. London and NY: Routledge, pp. 63–69. Retrieved from: <[http://www.univpgri-palembang.ac.id/perpus-fkip/Perpustakaan/Pendidikan%20&%20Pengajaran/%5BMargaret\\_Smith%5D\\_Teaching\\_Geography\\_in\\_Secondary\\_S\(BookFi.org\).pdf](http://www.univpgri-palembang.ac.id/perpus-fkip/Perpustakaan/Pendidikan%20&%20Pengajaran/%5BMargaret_Smith%5D_Teaching_Geography_in_Secondary_S(BookFi.org).pdf)> [accessed 26 April 2017].
- Narayanan, V. K., Olk, P. M., & Fukami, C. V. (2010). Determinants of internship effectiveness: An exploratory model. *Academy of*

- Management Learning and Education*, 9(1), 61–80. doi:10.5465/AMLE.2010.48661191.
- Nathalie, F. (2011). Représentation d'élèves sur le développement durable et le réchauffement climatique. In F. Audiger (Ed.), *L'éducation en vue du développement durable: sciences sociales et élèves en débats. Cahiers de la section des sciences de l'éducation*, cahier No. 130, pp. 93–113, July 2011.
- National Institute of Education. (2017). *Global connections*. Retrieved from <<http://www.nie.edu.sg/about-nie/global-connections>>.
- Naughton, G. A., Carlson, J. S., & Greene, D. A. (2006). A challenge to fitness testing in primary schools. *Journal of Science and Medicine in Sport*, 9(1–2), 40–45. doi: 10.1016/j.jsams.2006.01.002.
- Nava Romano, C. (2014). *Par quels facteurs s'explique l'abandon ou la poursuite des études lors de la transition primaire-secondaire des étudiants inscrits dans les écoles du département de Cochabamba (Bolivie) ?*. Thèse de doctorat. Université de Liège, Belgique.
- Nava Romano, C. (2012). La participation sociale dans le cadre de la nouvelle loi Avelino Siñani-Elizardo Pérez. In J.-L. Gilles, P. Potvin & C. Tièche Christinat (Eds.), *Les Alliances éducatives pour lutter contre le décrochage scolaire*. Bern: Peter Lang.
- Nava Romano, C. (2015). ¿Por qué los chicos abandonan el colegio? *Revista cuarto intermedio* No. 107. Cochabamba-Bolivia. (pp. 6–21).
- Navarro, G., Molina, J. A., & De la Barra, N. (2005). Classification of the high-Andean Polylepis forest in Bolivia. *Plant Ecology*, 176:113–130.
- Nespor, J. (1987). The role of beliefs in the practice of teaching. *Journal of Curriculum Studies*, 19, (4), 317–328.
- Ngoenha, S. (2013). *Intercultura, alternativa a governação biopolítica?* Publiflix. Maputo.
- Nicholls, J. (1984). Conceptions of ability and achievement motivation. In R. E. Ames and C. Ames, *Research on motivation in education: Student motivation* (pp. 39–73). New York, NY: Elsevier Science & Technology Books.

- Nilsson, B. (2003). Internationalisation at Home from a Swedish Perspective: The Case of Malmö. *Journal of Studies in International Education*. Vol. 7, Issue 1. pp. 27–40. Retrieved from: <<http://journals.sagepub.com/doi/abs/10.1177/1028315302250178>> [accessed 25 August 2016].
- Nonis, K. P. (2006). Integrating children with special needs: Singapore preschool teachers share their feelings: Preliminary investigation. *The Journal of the International Association of Special Education*, 7(1), 4–10.
- O'Reilly, G. (2014). The EU and Humanitarian Action: Breaking Down Boundaries. *European Journal of Geography*, Vol. 41, pp. 88–97. Retrieved from: <<http://www.eurogeographyjournal.eu/articles/7.THE%20EU%20AND%20HUMANITARIAN%20ACTION%20BREAKING%20DOWN%20BOUNDARIES!.pdf>> [accessed 25 March 2017].
- O'Reilly, G. (2015). *School of History and Geography: Gerry O'Reilly Profile*. Retrieved from: <[https://www.dcu.ie/history\\_geography/people/gerry-o-reilly.shtml](https://www.dcu.ie/history_geography/people/gerry-o-reilly.shtml)> [accessed 25 March 2017].
- O'Reilly, G. (2017). Preparing Critically and Globally Conscious Teachers. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- OFSPPO (2013). *Activité physique et santé des enfants et des adolescents: recommandations pour la Suisse*. Macolin, Office fédéral du sport (OFSPPO).
- Ouédraogo, F.C., Nikiema, E., Kagambega, I., & Compaore, E. (2012). Mobilité comme résilience des maraichers burkinabè face à la vulnérabilité alimentaire. *Revue de Géographie de l'Université de Ouagadougou RGO*, No. 00 pp. 1–33, October 2012.
- Owen Blakemore, J. E., Berenbaum, S. A., & Liben, L. S. (2009). *Gender development*. New York: Psychology Press.
- Pache, A. (2014). *L'alimentation à l'école. Enseigner une géographie renouvelée*. Rennes: Presses universitaires de Rennes.
- Pache, A. (2017). Teaching food practices and sustainability in an international context. In J.-L. Gilles (Ed.), *Linking Research and*



- Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Pache, A., Hertig, P., & Curnier, D. (2017). Approaching complexity in the context of education for sustainable development: research and perspectives. In P. Blaze, J. Weakland & A. Wals (Eds.), *Envisioning futures for environmental and sustainability education* (pp. 375–384). The Netherlands: Wageningen Academic Publishers.
- Padilla, C., & Zurdo, R. (2003). Democratización de la danza: expresión y desarrollo de la creatividad. Expresión, creatividad y movimiento. *Congreso internacional de Expresión Corporal y Educación*. Salamanca: Amaru.
- Pajares, M. (1992). Teachers' beliefs and educational research: cleaning up a messy construct. *Review of Educational Research*, 62, (3), 307–332.
- Paquay, L., & Sirota, R. (Eds.). (2001). Le praticien réflexif – La diffusion d'un modèle de formation. Recherche et formation (INRP), No. 36.
- Parkes & Griffiths (2008). Parkes, R. J., & Griffiths, T. G. (2009). *Comparative education, border pedagogy, and teacher education in an age of internationalisation*. Refereed paper presented at 'Teacher education crossing borders: Cultures, contexts, communities and curriculum' the annual conference of the Australian Teacher Education Association (ATEA), Albury, 28 June-1 July. Retrieved from <[https://ia800201.us.archive.org/26/items/ERIC\\_ED524668/ERIC\\_ED524668.pdf](https://ia800201.us.archive.org/26/items/ERIC_ED524668/ERIC_ED524668.pdf)>.
- Pate, R. R., Mitchell, J. A., Byun, W., & Dowda, M. (2011). Sedentary behaviour in youth. *British Journal of Sports Medicine*, 45(11), 906–913. doi: 10.1136/bjsports-2011-090192.
- Pearson, N., & Biddle, S. J. (2011). Sedentary behavior and dietary intake in children, adolescents, and adults: A systematic review. *American Journal of Preventative Medicine*, 41(2), 178–188. doi: 10.1016/j.amepre.2011.05.002.

- Pease, P.C. (1993). *Expanding student teaching program abroad: A step toward diversity*. Paper presented at the annual meeting of the Association of Teacher Educators, Los Angeles, California.
- Pecore, J. L. (2015). From Kilpatrick's Project Method to Project-Based Learning. In M. Y. Ryaman & B. C. Bruce (Eds.), *International Handbook Of Progressive Education*, 155–171. New York: Peter Lang US.
- Pence, H. M., & Macgillivray, I. K. (2008). The impact of an international field experience on preservice teachers. *Teaching and Teacher Education*, 24(1), 14–25. doi:10.1016/j.tate.2007.01.003.
- Percy-Smith, B., & Thomas, N. (2010). *A Handbook of Children and Young People's Participation – Perspectives from Theory and Practice*. London and New York: Routledge (378 pp.).
- Perrenoud, P. (2001). *Développer la pratique réflexive dans le métier d'enseignant*. Paris: ESP.
- Perret-Clermont, A.-N. (1979). *La construction de l'intelligence dans l'interaction sociale*. Bern: Peter Lang.
- Peyronie, H. (2013). *Le mouvement Freinet, du fondateur charismatique à l'intellectuel collectif*. Caen: PUC.
- Phillion, J., Malewski, E., Sharma, S., & Wang, Y. (2009). Reimagining the curriculum in study abroad: Globalizing multiculturalism to prepare future teachers. *Frontiers: The Interdisciplinary Journal of Study Abroad*, 18, 323–339.
- Phtiaka, H. (2002). Teacher education for a new world. *International Studies in Sociology of Education*, 12: 3, 353–374. doi: 10.1080/09620210200200098.
- Piaton, G. (1974). *La pensée pédagogique de C. Freinet*. Toulouse: Privat.
- Pierre, G., & Fernand, V. (2009). *Dictionnaire de la géographie*. 10<sup>th</sup> updated edition. Paris: PUF.
- Pintrich, P. R., & Schunk, D. (2002). *Motivation in education: Theory, research, and applications (2<sup>nd</sup> ed.)*. Upper Saddle, NJ: Prentice-Hall, Inc.
- Poglia, E. (2011). Conditions épistémologiques, méthodologiques et pratiques de l'interdisciplinarité en sciences humaines et sociales: le

- cas de la communication interculturelle. In F. Darbellay & T. Paulsen (Eds.), *Au miroir des disciplines. Réflexions sur les pratiques d'enseignement et de recherche inter- et transdisciplinaires* (pp. 157–187). Bern: Peter Lang.
- Pontais, C. (2013). Enjeux et petits riens qui changent tout. Eléments de réflexion pour enseigner les mêmes pratiques sportives aux filles et aux garçons. *ABCD de l'égalité*, 1–4.
- Pourtois, J.-P., Desmet, H., & Lahaye, W. (2006). In L. Paquay, M. Crahay & J.-M. De Ketele (Eds.), *L'analyse qualitative en éducation. Des pratiques de recherche aux critères de qualité* (pp. 135–142). Bruxelles: De Boeck.
- Prensky, M. (2001). "Digital Natives, Digital Immigrants Part 1", *On the Horizon*, Vol. 9 Issue: 5, pp. 1–6. doi: 10.1108/10748120110424816.
- Quermonne, J.-L. (2015). *Le système politique de l'Union européenne: Des Communautés économiques à l'Union politique*. Issy-les-Moulineaux: LGDJ.
- Quezada, R. L. (2010). Internationalization of teacher education: creating global competent teachers and teacher educators for the twenty-first century. *Teaching Education*, 21: 1, 1–5. doi: 10.1080/10476210903466885.
- Quezada, R. L., & Cordeiro, P. (2007). Internationalizing Schools and Colleges of Education: Educating Teachers for Global Awareness. *Teacher Education Quarterly*. California Council on Teacher Education: Winter 2007, Vol. 34, No. 1.
- Quillen, J. (Year not given). An Introduction to Anthropology and Education. Stanford: Stanford University. Retrieved from: <<http://varenne.tc.columbia.edu/bib/texts/Spindler/spndlgerg55-section1-Spindler.pdf>> [accessed 20 July 2015].
- Rabinow, P. (1977). *Reflections on fieldwork in Morocco*. Berkeley, CA: University of California Press.
- Rapport Eurydice (2010). *Gender differences in educational outcomes: study on the measures taken and the current situation in Europe*. European Commission, Education, Audiovisual and Culture Executive Agency.

- Raviv, S., & Low, M. (1990). Influence of physical activity on concentration among junior high-school students. *Perceptual and Motor Skills*, 70, 67–74. doi: 10.2466/pms.1990.70.1.67.
- Razafimbelo, C. (2013). Des manuels d'histoire et de géographie en français pour les collèges. In M. Rabenoro (Ed.), *Langue et éducation: quelle langue utiliser en classe à Madagascar au 21<sup>e</sup> siècle?* (pp. 86–99). Cape Town: The Centre for Advanced Studies of African Society.
- Razafimbelo, C. (2014). Perception et pratique actuelles de l'esclavage: le cas de la région de Moramanga. In I. Rakoto & S. Urfer (Eds.), *Esclavage et libération à Madagascar*. Paris/Ambozontany: Karthala.
- Reuter, Y. (Ed.). (2008). *Une école Freinet – Fonctionnements et effets d'une pédagogie alternative en milieu populaire*. Paris: L'Harmattan (225 pages).
- Rhee, K. S., & Honeycutt Sigler, T. (2010). Developing enlightened leaders for industry and community. *Journal of Management Education*, 34(1), 163–181. doi:10.1177/1052562909338143.
- Richardson, L. (2000). Writing. A method of inquiry. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (2<sup>nd</sup> ed., pp. 923–947). Thousand Oaks: SAGE Publications.
- Ricks, T. (2011). Process reflection during Japanese lesson study experiences by prospective secondary mathematics teachers. *Journal of Mathematics Teacher Education*, 14, (4), 251–267.
- Rieben, H., Nathusius, M., Nicod, F., & Camperio-Tixier, C. (2000). *Un changement d'espérance: La Déclaration du 9 mai 1950, Jean Monnet – Robert Schuman*. Lausanne: Fondation Jean Monnet pour l'Europe, Centre de recherches européennes.
- Rivière, C. (2000). *Anthropologie politique*. Paris: Armand Colin.
- Rodriguez, E. (2011). Reflections from an international immersion trip: New possibilities to institutionalize curriculum. *Teacher Education Quarterly*, 38(1), 147–160.
- Rokholm, B., Baker, J. L., & Sorensen, T. I. (2010). The leveling off of the obesity epidemic since the year 1999: A review of

- evidence and perspectives. *Obesity Reviews*, 11(12), 835–846. doi: 10.1111/j.1467-789X.2010.00810.x.
- Rónholt, H. (2002). “It’s only the sissies”. Analysis of teaching and learning processes in physical education: a contribution to the hidden curriculum. *Sport, education and society*, 7, 25–36.
- Ross, W., & N. Gibson (Eds.). (2006). *Neoliberalism and Educational Reform*. New Jersey: Hampton Press Inc. Retrieved from: <[http://www.academia.edu/179166/Neoliberalism\\_and\\_Education\\_Reform](http://www.academia.edu/179166/Neoliberalism_and_Education_Reform)> [accessed 22 July 2015].
- Rouyer, V. (2007). *La construction de l’identité sexuée*. Paris: Armand Colin.
- Rouyer, V., & Robert, C. (2010). Les jouets, outils de transmission des stéréotypes de sexe? Représentations du masculin et du féminin chez l’enfant âgé de 4 ans. In V. Rouyer, S. Croity-Belz. & Y. Prêteur (Eds.), *Genre et socialisation de l’enfance à l’âge adulte*. (pp. 15–24). Toulouse: Erès, Hors collection.
- Rouyer, V., & Zaouche Gaudron, C. (2006). La socialisation des filles et des garçons au sein de la famille: enjeux pour le développement. In A. Dafflon-Novelle (Ed.), *Filles-garçons. Socialisation différenciée ?* (pp. 27–54). Grenoble: Presses universitaires.
- Rouyer, V., Mieyaa, Y., & Le Blanc, A. (2014). Socialisation de genre et construction des identités sexuées. *Revue française de pédagogie*, 187, 97–137.
- Ruble, D. N., & Martin, C. L. (1998). Gender development. In W. Damon (Ed.), *Handbook of child psychology: Social, emotional and personality development*. (pp. 933–1016). New York: John Wiley.
- Ryan, R. M., Frederick, C. M., Lipes, D., Rubio, N., & K. Sheldon, M. (1997). Intrinsic motivation and exercise adherence. *International Journal of Sport Psychology*, 28, 335–354.
- Sayac (2013). La recherche dans la formation des enseignants: quel impact sur les étudiants en termes de développement professionnel et de rapport au(x) savoir(s)? *Formation et profession*, 21(1). doi:10.18162/fp.2013.43.
- Schaer, C. (2016). *Analyse comparative de deux manuels scolaires de langue étrangère : enjeux culturels et didactiques de l’enseignement/*

- apprentissage de français au Mozambique et de l'italien à Lausanne* (Unpublished master's thesis). Lausanne: University of Teacher Education of State of Vaud, Switzerland.
- Schneider, W. J., & McGrew, K. S. (2012). The Cattell-Horn-Carroll model of intelligence. In D. Flanagan & P. Harrison (Eds.), *Contemporary intellectual assessment: Theories, tests, and issues* (3<sup>rd</sup> ed., p. 99–144). New York: Guilford.
- Schön, (1993). *The Reflective Practitioner: How professionals think in action*. London: Temple Smith.
- Sermier Dessemontet, R. (2012). *Les effets de l'intégration scolaire sur les apprentissages d'enfants ayant une déficience intellectuelle. Une étude comparative. [The effects of including children with intellectual disability on their progress. A comparative study]*. (Doctoral dissertation, University of Fribourg, Switzerland). Retrieved from <<http://ethesis.unifr.ch/theses/SermierR.pdf?file=SermierR.pdf>>.
- Seuss, Dr. (1991). The lorax. In Dr. Seuss, *Six by Seuss: a treasury of Dr. Seuss classics* (pp. 282–345). New York: Random House.
- Shulman, L. S. (1987). Knowledge and teaching: Foundation of the new reform. *Harvard Educational Review*, 57, (1), 1–22.
- Sieber, P., & Mantel, C. (2012). The internationalization of Teacher Education: An Introduction. *Prospects*, 42, 5–17. doi: 10.1007/s11125-012-9218-x.
- Simmons, P., Emory, A., Carter, T., Coker, T., Finnegan, B., & al. (1999). Beginning teachers: beliefs and classroom actions. *Journal of Research in Science Teaching*, 36, (8), 930–954.
- Singal, N. (2005). Mapping the field of inclusive education: A review of the Indian literature. *International Journal of Inclusive Education*, 9(4), 331–350. doi:10.1080/13603110500138277.
- Slattery, P. (1995). *Curriculum development in the postmodern era*. New York: Garland Publishing.
- Smith, K.R. (1993). Fuel combustion, air pollution exposure, and health: the situation in developing countries. *Annual Review of Energy and Environment*, 18: 529–566.
- Smith, L. C. (2011). *The World in 2050: Four Forces Shaping Civilization's Northern Future*. New York: Plume.

- Smolak, L., & Thompson, J. K. (Eds.). (2009). *Body image, eating disorders, and obesity in youth* (2<sup>nd</sup> ed.). Washington, DC: American Psychological Association.
- Solem, M., Klein, P., Muñiz-Solari, O., & Ray, W. (Eds.). (2010). National Identity: A module for the AAG Center for Global Geography Education. Washington: American Association of Geographers Online. Retrieved from: <<http://www.aag.org/cgge>> [accessed 14 July 2015].
- Soria, R. W., & Hennessey, A. B. (2005). Áreas importantes para la conservación de las aves en Bolivia. In BirdLife Internacional & Conservación Internacional (Eds.), *Áreas importantes para la conservación de las aves en los Andes tropicales: sitios prioritarios para la conservación de la biodiversidad* (Serie de Conservación de BirdLife, No. 14). Quito: BirdLife Internacional, pp. 57–116.
- Spessato, B. C., Gabbard, C., & Valentini, N. C. (2013). The role of motor competence and body mass index in children's activity levels in physical education classes. *Journal of Teaching in Physical Education*, 32(2), 118–130.
- Stanford Encyclopaedia of Philosophy (2013). Michel Foucault. Retrieved from: <<http://plato.stanford.edu/entries/foucault/>> [accessed 30 July 2015].
- Stanford Encyclopaedia of Philosophy (2014). Introspection. Retrieved from: <<http://plato.stanford.edu/entries/introspection/>> [accessed 10 June 2015].
- Strong, W. B., Malina, R. M., Blimkie, C. J., Daniels, S. R., Dishman, R. K., Gutin, B. ... & Trudeau, F. (2005). Evidence based physical activity for school-age youth. *The Journal of Pediatrics*, 146(6), 732–737. doi: 10.1016/j.jpeds.2005.01.055.
- Sugiyama, T., Healy, G. N., Dunstan, D. W., Salmon, J., & Owen, N. (2008). Is television viewing time a marker of a broader pattern of sedentary behavior? *Annals of Behavioral Medicine*, 35(2), 245–250. doi: 10.1007/s12160-008-9017-z.
- Sumner, W. G. (1906). *Folkways*. New York: Arno Press.

- Swiss Center for the Coordination of Educational Research (2010). *L'éducation en Suisse: rapport 2010*. [Education in Switzerland: 2010 report]. Aarau: CSRE.
- Swiss Conference of Cantonal Ministers of Education (2007). *Accord intercantonal sur la collaboration dans le domaine de la pédagogie spécialisée*. [Intercantonal agreement of collaboration in the field of SNE]. Retrieved from <[http://www.edudoc.ch/static/web/arbeiten/sonderpaed/konkordat\\_f.pdf](http://www.edudoc.ch/static/web/arbeiten/sonderpaed/konkordat_f.pdf)>.
- Tabachnick, B. G., and Fidell, L. S. (2013). *Using multivariate statistics, 6<sup>th</sup> ed.* Boston: Pearson.
- Tappe, M. K., & Burgeson, C. R. (2004). Physical education: A cornerstone for physically active lifestyles. *Journal of Teaching in Physical Education, 23*(4), 281–299.
- Tardif, J. (2001). Qu'est-ce qu'un paradigme? *Virage Express. Edition spéciale*, Vol. 3, No. 6, 2 février 2001.
- Tarifa, T., & Yensen, E. (2001). Mamíferos de los bosques de *Polylepis* de Bolivia. *Revista de Ecología, 9*, 29–44.
- Taxe, C. & Weissen, M.-H. (2013). Guide de l'enseignant. Séquence didactique d'écologie urbaine au gymnase: aménagement d'un écoquartier. Retrieved from <[http://www.education21.ch/sites/default/files/uploads/pdf\\_fr/acteurs/Taxe-et-al\\_Guide-de-l-enseignant.pdf](http://www.education21.ch/sites/default/files/uploads/pdf_fr/acteurs/Taxe-et-al_Guide-de-l-enseignant.pdf)>.
- Taylor, M. S. (1985). The roles of occupational knowledge and vocational self-concept crystallization in students' school-to-work transition. *Journal of Counseling Psychology, 32*(4), 539–550. doi:10.1037/0022-0167.32.4.539.
- Taylor, M. S. (1988). Effects of college internships on individual participants. *Journal of Applied Psychology, 73*(3), 393–401. doi:10.1037/0021-9010.73.3.393.
- The California Endowment (2008). Physical education matters: A full report. Retrieved from: <[http://www.calendow.org/uploadedfiles/publications/by\\_topic/disparities/obesity\\_and\\_diabetes/pe%20matters%20long%20versionfinal.pdf](http://www.calendow.org/uploadedfiles/publications/by_topic/disparities/obesity_and_diabetes/pe%20matters%20long%20versionfinal.pdf)>.



- Theys, J. (2010). Trois conceptions irréductibles de l'environnement. In O. Coutard & J.-P. Lévy (Eds.), *Ecologies urbaines* (pp. 15–38). Paris: Economica/Anthropos.
- Thomas, J., Pedersen, J., & Finson, K. (2001). Validating the draw-a-science-teacher-test checklist (dastt-c): Exploring mental models and teacher beliefs. *Journal of Science Teacher Education*, 12, (4), 295–310.
- Timothy, J. (1999). *Critical autobiography: An insider perception on science and mathematics education in Vanuatu*. (Unpublished Dissertation for Master on Science Education), Curtin University of Technology, Perth.
- Townsend, T., & Bates, R. (2007). Teacher education in a new millennium: Pressures and possibilities. In T. Townsend & R. Bates (Eds.), *Handbook of teacher education* (pp. 4–24). Dordrecht: Springer.
- Trahar, S. (2007). Teaching and Learning: the International Higher Education Landscape—some theories and working practices. Bristol: University of Bristol, Discussion in Education Series. Retrieved from: <<http://escalate.ac.uk/3559>> [accessed 4 July 2015].
- Trout, J., & Graber, K. C. (2009). Perceptions of overweight students concerning their experiences in physical education. *Journal of Teaching in Physical Education*, 28(3), 272–292.
- UNESCO (2012). Shaping the Education of Tomorrow. 2012 Report on the UN Decade of Education for Sustainable Development. Retrieved from <<http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/publications/>>.
- Valdivia, P. A., Sanchez, A., Alonso, J. I., & Zagalaz, M. L. (2010). La coeducación en el área de educación física en España. Una reseña histórica. *Cultura, Ciencia y Deporte*, 14, 77–83.
- Vallerand, R. J. (2004). Intrinsic and extrinsic motivation in sport. *Encyclopedia of Applied Psychology*, 2, 427–435.
- Vallerand, R. J., & Halliwell, W. R. (1983). One method of trans-cultural validation of psychological questionnaires: implications for sports

- psychology. *Canadian Journal of Applied Sport Sciences*, 8(1), 9–18.
- Vallieres, E. F., & Vallerand, R. J. (1990). Traduction et validation canadienne-française de l'échelle de l'estime de soi de Rosenberg. *International Journal of Psychology*, 25(2), 305–316.
- Van de Gaer, E., Pustjens, H., Van Damme, J., & De Munter, A. (2006). Tracking and the effects of school related on the language achievement of boys and girls. *British journal of sociology of education*, 27, 293–309.
- Van Der Horst, K., Paw, M. J. C. A., Twisk, J. W. R., & Van Mechelen, W. V. (2007). A brief review on correlates of physical activity and sedentariness in youth. *Medicine & Science in Sports & Exercise*, 39(8), 1241–1250. doi: 10.1249/mss.0b013e318059bf35.
- Van Hoof, H. B., & Verbeeten, M. J. (2005). Wine is for drinking, water is for washing: Student opinions about international exchange programs. *Journal of Studies in International Education*, 9(1), 42–61. doi:10.1177/1028315304271480.
- Vancutsem, S., & Razafimbelo, C. (2015). *Evaluation finale du programme VOZAMA à Madagascar*. Brussels: COTA, Agence Française de Développement.
- Vanhulst, G., Petitpierre, C., & Macherel, L. (2012). *Plan d'intentions 2012–2017*. Lausanne, Suisse: Haute école pédagogique du Canton de Vaud.
- Varcher, P. (2011). L'éducation en vue du développement durable: une filiation à assumer, des défis à affronter. In F. Audigier, N. Fink, N. Freudiger & Ph. Haerberli (Eds.), *L'éducation en vue du développement durable: sciences sociales et élèves en débats* (Cahiers de la Section des Sciences de l'éducation de l'Université, No. 130) (pp. 25–46). Geneva: University of Geneva.
- Vergnolle Mainar, C. (2011). *La géographie dans l'enseignement. Une discipline en dialogue*. Rennes: Presses universitaires.
- Verret, M. (1975). *Le temps des études*. Paris: Honoré Champion.
- Vignerot, C. (2006). Les inégalités de réussite en EPS entre filles et garçons: déterminisme biologique ou fabrication scolaire? *Revue française de pédagogie*, 154, 111–124.

- Walker, Z. (2016). Special education teacher preparation landscape: Singapore's dual education system (A). *Teacher Education and Special Education*, 39(3), 1–13. doi:10.1177/0888406415622251.
- Walker, Z., Sermier, R., & Tièche Christinat, C. (2017). The Shared Experiences of International Special Educators. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.
- Weissen, M.-H., & Tauxe, C. (2012). *Aménagement d'un écoquartier : approche interdisciplinaire au gymnase* (Unpublished Master's thesis). University of Teacher Education of State of Vaud, Lausanne, Switzerland.
- Weissen, M.-H., & Tauxe, C. (2013). Aménagement d'un écoquartier: une approche interdisciplinaire au gymnase. *Prismes*, 18, 42.
- Welk, G. J., Morrow, J. R., & Falls, H. B. (2002). *FITNESSGRAM reference guide*. Dallas, TX: Cooper Institute.
- Wentzel, B. (2008). Formation par la recherche et postures réflexives d'enseignants en devenir. *Recherche et formation (ENS Editions)*, 59, pp. 89–103. doi: 10.4000/rechercheformation.648.
- West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender and society*, 1, 125–151.
- WHO (2002). The world health report 2002: Reducing risks, promoting healthy life. Retrieved from: <[http://www.who.int/whr/2002/en/whr02\\_en.pdf](http://www.who.int/whr/2002/en/whr02_en.pdf)>.
- WHO (2005). Preventing chronic diseases: A vital investment. Retrieved from: <[http://www.who.int/chp/chronic\\_disease\\_report/full\\_report.pdf](http://www.who.int/chp/chronic_disease_report/full_report.pdf)>.
- WHO (2009). Unhealthy diets and physical inactivity. Retrieved from: <[http://www.who.int/nmh/publications/fact\\_sheet\\_diet\\_en.pdf](http://www.who.int/nmh/publications/fact_sheet_diet_en.pdf)>.
- Willard-Holt, C. (2001). The impact of a short-term international experience for preservice teachers. *Teaching and Teacher Education*, 17(4), 505–517.
- Willis, J. W. (2007). *Foundations of qualitative research*. Thousand Oaks: SAGE Publications.

- Woods, P. (1986). *Inside schools: Ethnography in educational research*. London: Routledge.
- Wulf, C. (2012). Towards a Historical Cultural Anthropology of Education: The Berlin Ritual Study (Published in an edited version. In K. M. Anderson-Levitt (Ed.), *Anthropologies of Education. A global Guide to Ethnographic Studies of Learning and Schooling*. NY: Berghahn Books, 2012, pp. 29–48. Retrieved from: <<http://www.lisa.usp.br/wulfanthropology.pdf>> [accessed 10 June 2015].
- Xiang, P., McBride, R. E., & Bruene, A. (2004). Fourth graders' motivation in an elementary physical education running program. *The Elementary School Journal*, 104(3), 253–266. Retrieved from: <<http://www.jstor.org/stable/3202952>>.
- Xiang, P., McBride, R. E., & Bruene, A. (2006). Fourth graders' motivational changes in an elementary physical education running program. *Research Quarterly for Exercise and Sport*, 77(2), 195–207. doi: 10.1080/02701367.2006.10599354.
- Zaidman, C. (1996). *La mixité à l'école primaire*. Paris: L'Harmattan.
- Zay, D. (2001). Pratique réflexive et partenariat: théories et perspectives internationales. *Carrefours de l'éducation*, 2, 12, pp. 2–10. doi: 10.3917/cdle.012.0002.
- Zeece, P. D. (2003). This land is our land: This world is our world. *Early Childhood Education Journal*, 31(1), 59–64.
- Zegaï, M. (2010). La mise en scène de la différence des sexes dans les jouets et leurs espaces de commercialisation. *Les cahiers du genre*, 49, 35–54.
- Zeichner, K. M. (1993). Educating Teachers for Cultural Diversity, *National Center for Research on Teacher Learning Special Report*. NCRLT, Michigan State University.
- Zeichner, K.M., Tabachnick, B.R., & Densmore, K. (1987). Individual, institutional, and cultural influences on the development of teachers' craft knowledge. In J. Calderhead (Ed.), *Exploring Teachers' Thinking* (pp. 21–59). London: Cassell.
- Zhang, D., & Katsiyannis, A. (2002). Minority Representation in Special Education: A Persistent Challenge. *Remedial and Special Education*, 23(3), 180–187. doi:10.1177/07419325020230030601.

- Zurita, M., & Vargas, S. (2017). Promoting and evaluating *Polylepis* forest protection as a way to improve living conditions in the communities of San Miguel, Janko Khala, and Ch'aqui Potrero. In J.-L. Gilles (Ed.), *Linking Research and Training in Internationalization of Teacher Education with the PEERS Program: Issues, Case Studies and Perspectives*. Bern: Peter Lang.

