



# **Subject Teacher Education in Transition**

Educating Teachers  
for the Future

Edited by  
Eero Ropo and Riitta Jaatinen

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*Typography and layout by*

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## **Part I**

### **General Issues in Subject Teacher Education**





# Introduction

## **The history of Finnish subject teacher education with special reference to the development at the University of Tampere**

*Eero Ropo, Riitta Jaatinen and Tero Autio*

### Teachers in the Finnish school system

In this introductory chapter, our aim is to describe some of the history and context of Finnish subject teacher education. Although our perspective is based on developing teacher education at the University of Tampere, we believe that also national development and world-wide theoretical perspectives are highlighted in the chapters. In this introduction we will focus on the history of Finnish teacher education and also present an overview of the contents of the book. Each of the chapters is concerned with depicting a research and

development project or several projects and considering its or their contribution to teacher education.

In Finnish teacher education, we can distinguish four teacher categories. The teachers in these categories have received a different type of education based on history and educational traditions. *Early childhood education teachers* (kindergarten teachers) have been educated at kindergarten teacher education institutions since the early 20<sup>th</sup> century. These institutions were combined with universities in 1995 and the early childhood education teacher degree became a bachelor level (3 yrs.) academic degree.

*Primary school teachers* (class teachers) work in grades 1 through 6 in the Finnish schools. This teacher category originates from the 1860s when the first elementary school teacher education institution ('kansakoulunopettajaseminaari' in Finnish) was established in Jyväskylä. The institutions located in different parts of the country were combined with universities in 1974 when faculties of education were established. *The primary school teacher's degree* was a three-year programme at the bachelor level until 1979 when it was legislated to become a five-year master's degree in educational sciences.

In Finland, *subject teachers*, i.e. teachers specialized in teaching a subject or subjects, have been educated at the university level since the beginning of public education and teacher education in the 19th century. From the very beginning, subject teacher education adopted the teacher training school system ('normaalikoulussa harjoittelu') in which the student teachers practised in special, state owned schools after their university degree. The teacher education in teacher training schools was a one-year internship type of period during which student teachers practised teaching under the supervision of experienced subject teachers ('auskultointi').

The original system prevailed until 1974 when all teacher training schools were combined with different universities. A new master's degree programme for primary school teachers commenced in 1979. All university degree programmes were also reformed, and *Teacher's*

*Pedagogical Studies*, including both theoretical and practical studies, became a required minor subject for all teachers, including subject teachers. The main content areas of the *Teacher's Pedagogical Studies* were legislated to include three domains, namely, basic studies in education, subject didactics (including subject didactic research), and teaching practice in schools. Universities offering the master's degrees were, and still are, autonomous in designing the goals and contents of teacher education. However, on the national level, it was agreed from the very beginning that each domain should encompass about one third of the total *Teacher's Pedagogical Studies* (currently 60 ECTS, i.e. European Credit Transfer System credits).

The reasons for this type of reform in late 1970s and early 1980s were partly due to the overall reform of the Finnish school system. Since the 1970s the new comprehensive school ('peruskoulu') has offered general 9-year education for all. Earlier, in the dual system, subject teachers had been working with those students who had applied and been admitted to 8-year (lower and upper) secondary schools ('oppikoulu' and 'lukio') giving access to university studies. It was also evident that research in different domains and disciplines had brought a lot of new perspectives to school education and teachers' roles (see, e.g., Mandl et al. 1990; Carretero et al. 1991, Jaakkola et al. 1995).

This same subject teacher education model also spread to teacher education in vocational education. According to the current legislation, in addition to subject studies and/or vocational content studies and work experience, teachers in vocational schools and universities of applied sciences must have 60 (ECTS) in *Teacher's Pedagogical Studies*.

## Reforming subject teacher education in the 1990s

In the early 1990s, it became obvious at the Faculty of Education at the University of Tampere that conceptions of subject teaching and teachers needed theoretical and practical updating. This updating focused on those subject teacher education programmes that the University of Tampere offered, namely, languages, history and social sciences, and mathematics and natural sciences. One incentive for this need was the development in the 1980s when *Teacher's Pedagogical Studies* were included as a minor subject in the master's degrees. The traditional way of qualifying as a subject teacher after the degree was replaced with minor subject studies during the 3<sup>rd</sup>- or 4<sup>th</sup>-year studies. This development in the way of qualifying was not only practical but it gave an opportunity to complement and intensify the studies' theory vs. practice discourses and to update the studies in the subject didactics based on both the subject-specific studies at subject faculties and in-school training.

The prevailing designing principle was to reconstruct the subject-specific contents into pedagogically relevant and meaningful modules, adjusting these modules to different age and grade levels, and designing learning goals benefitting students' knowledge and aesthetic, practical and moral resources. This simple model is typically called a transmission model in which the teachers deliver the required knowledge. Students are considered as recipients whose duty is to acquire the knowledge, fulfilling the requirements to learn according to the curricula. The teacher is, according to this model, a moral and cognitive authority who should be able to specify what knowledge is worth knowing for the students. This conception of teaching and teachers, which according to current theoretical models was oversimplified and based on incorrect generalizations of the learning processes, was the leading principle in developing theories of teaching and learning. (Autio 2006/2012.)

This traditional thinking about teaching was challenged by at least two theoretical discourses. The first one is related to the developments in the understanding of the learning concept. This development can be summarized as a change from considering learning as acquisition to understanding it as mental and social construction in which students make interpretations based on their own history and autobiography, and the social context of the situation in which the process takes place (see, e.g., Autio 2006/2012; Lehtovaara 1996; Ropo & Värri 2003; Jaatinen 2007). This transformation broke the causal model between teaching and learning, requiring changes in teachers' thinking about instruction. However, basing the curricula and assessment on the idea of causality between teaching and learning is still prevalent in several educational systems outside Finland.

Developments in the learning theories also challenged traditional thinking about subject didactics and curriculum. It was evident that profound understanding of school education was needed in subject teacher education. The first step was a conceptual change from teacher training to teacher education. This change also challenged the previous understanding of school teaching. (Autio 2006/2012; Lehtovaara 2001; Ropo & Värri 2003; Kohonen et al. 2001.) The beginning of new thinking did not lean explicitly on any specific theorization. However, it was recognized that the new postmodern era, as it was described, required new ideas for the education of individuals for the new subjectivity and identities, as well as global citizenship (Doll 1993; Autio 2006). Theoretical understanding of new directions developed quickly in the 1990s, and the progress took different paths in the various domains of subject didactics. (see, e.g., Kohonen 1992a, b, c; Kohonen 2001; Lehtovaara 2001; Jaatinen 2001; Kaikkonen 2001; Silfverberg 1999.)

Anglo-American theorization of educational psychology and emphasis on empirical research were popular in all behavioural sciences since World War II, after the collapse of Germany. Concurrently, Nordic education and teacher education rested on

the ideas of the German didactics and the concept of *Bildung*, in particular. (Autio 2006/2012.) After the first Finnish PISA results in 2000 which indicated that Finland had succeeded surprisingly well, it was not clear what had been the key factors contributing to those achievements. According to some researchers the Nordic traditions of applying philosophy-based thinking in education may have been the most significant cornerstones for the Finnish success (cf. Autio 2006).

Retrospectively, and in respect to the current theorization in the so-called *Curriculum Studies*, the Tampere subject teacher education was avant-gardist in the 1990s. The Tampere programme was an outsider in the mainstream quantitative perspectives of educational sciences and their increasingly recognized restrictions in describing human beings as subjects and individuals having a history, a present and a future. This criticism focused on teacher education and particularly on school education and the limitations in understanding students as holistic human beings. (Ropo et al. 1995.) Outside Finland, this recognition was increasingly present, for instance, in the US where the *Reconceptualization Movement* in curriculum and its developers and followers became more recognized by scholars all over the world, including dynamically progressing China which has reformed its education system based on ideas from the *Reconceptualization Movement*. (Doll 1993; Pinar et al. 1995; Pinar 2012, 2014; Henderson et al. 2015; Autio 2014a, b; Hua 2014.)

In Tampere, the developments starting from language teacher education spread little by little to other subject domains (see, e.g., Lehtovaara 2001; Kohonen 2001). In this movement, it was typical to consider school teaching and learning from the more holistic perspectives, emphasizing dialogical and democratic ideals as goals and methods of instruction. Experiential learning, as well as opening the cultural and contextual aspects of learning, rendered new perspectives to life in the classroom and learning a subject. It also became evident that understanding learning differences required

understanding them from the perspective of the autobiographies and life histories of the students. (Kohonen et.al. 2001.) All these theoretical expansions required new expertise, for instance, in philosophy, back-tracking to the ideals of early Finnish theorists, such as Ahlman, Hollo, and Salomaa in teacher education in the early 20<sup>th</sup> century.

It can be argued that the development of the holistic approach in which the teacher autonomy and freedom from methodological restrictions of the increasingly mechanistic educational thinking is, perhaps, one of the few key factors in Finnish education success. This movement can also be regarded as a kind of ‘vaccination’ against the ‘teaching to the test’ movement that has spread all over the world. This strong emphasis on testing and test results, often in the form of standardized, national testing as the main evidence of learning achievements, has never reached Finland (Westbury 2000; Autio 2017.)

Assessment as an essential part of curriculum and school teaching was widely recognised in the department of Tampere teacher education in the 1990s. However, the solution was not to develop it in the direction of quantitative assessment but to enhance self-reflection in authentic contexts and develop methods for qualitative evaluation in which autobiographical and interpretative perspectives could be taken into account better. This type of assessment does not aim at informing outsiders about the success and achievements in relation to other students. Rather, its purpose is to enhance personal goal-setting and self-evaluation in terms of learning during the course of one’s life and interpretations of personal experiences in one’s own autobiography. (See Kohonen’s chapter in this volume.)

The chapters in this book illustrate implications and developments of teacher education for 21<sup>st</sup>-century schools. Teachers should be educated to work for the future and with the generation that will influence that future. Although there are commonly shared conceptions of what the future holds, consensus is lacking on the



global level. Narratives of the future differ on the basis of individual, social and cultural histories, traditions, and expectations. Teachers as part of the global community and as representatives of education are in a crucial role in ensuring that the complex dialogue and search for solutions to increasingly complicated questions continue in ethically and morally responsible ways and directions. The developments in teacher education that we have briefly outlined above have been successes - however, nothing is final.

## Organization of the book

In their chapter, **Perceptions on collaboration, time management and meaningfulness: Millennials' innovations in the subject teacher education programme**, Marita Mäkinen, Johanna Annala and Jyri Lindén present the highlights of current student teachers' perceptions of the subject teacher education programme (STEP). They argue that student teachers represent one of the key groups that must be heard in order to maintain the efficiency of teacher education when facing 21<sup>st</sup>-century challenges, and suggest that the notion of social practice that builds on the connection between the practices of the programme and the social nature of the student teachers should be a driving force in the design, implementation and updating of teacher education programmes. The chapter aims to deepen the understanding of student teachers' perceptions of teacher education through the lens of generation theories. By listening to and understanding these teachers' voices, teacher educators can eliminate misunderstandings based on intuitive and tacit generational differences.

Viljo Kohonen's chapter, **Advancing language education in the context of developing the European Language Portfolio in Finland**, traces the processes of developing foreign language education and the European Language Portfolio (ELP) within the Council of Europe, Strasbourg. The ELP developments in Finland are examined as part of

the Council's innovative work on foreign language teaching aimed at promoting socially responsible learner autonomy and self-assessment in language education, spanning thirty years (from the early 1980s to 2014). The Finnish ELP-oriented research and development work described in the chapter was conducted in several intensive collaborative projects managed and led by Professor Kohonen, involving university departments of teacher education and numerous primary and secondary school language teachers and their pupils.

In the chapter, **Everyday multidisciplinary: Confessions of a mother tongue teacher educator**, Pirjo Vaittinen discusses mother tongue didactics and subject-specific didactics presenting her views through a narrative of a teacher educator's professional identity. She explores her teaching and activities in subject teacher education at the University of Tampere with focus on the significance of reflection and research in developing autonomous teachers. She includes the history and tradition of mother tongue teaching in Finland and the contributions of her former colleagues in her narrative relating to her personal choices and reasoning for them. During the twenty years of her career as a teacher educator, she has considered reflection and research to be the basis of teacher education and regards subject didactics as a perspective of teacherhood, of being a teacher.

In his chapter, **Reflections on my journey towards culture-bound and intercultural education**, Pauli Kaikkonen uncovers and discusses his personal development as a foreign language teacher and researcher and also highlights the importance of his research and development projects as a resource to expand his understanding of intercultural (foreign language) education. As part of his autobiographical and chronological journey presented in the chapter, he also discusses 'authenticity', 'identity' and 'plurilingualism' as significant conceptions of modern foreign language education. At the end, Kaikkonen reveals the main points of his current understanding and proposes a few central and important perspectives (theses) for foreign language education.

In her chapter, **Interactive, authentic, gameful e-learning concepts for the foreign language classroom**, Laura Pihkala-Posti describes a few snapshots of the narrative towards her current research and academic dissertation. Her purpose is to substantiate a few pedagogical intentions with the multimodal interactive language learning concepts that she has designed for the research. She will also introduce connections in her teaching interventions to learning approaches (or concepts), such as the holistic conception of the human being, authenticity, experiential and situated learning, learner autonomy, agency and identity building, dialogue, collaboration, as well as intercultural encounters and communication.

In his chapter, **Subject teacher education as a prisoner of its own tradition: Experiments in mathematics and science to break out of the routine**, Harry Silfverberg introduces four reforms concerning subject teacher education programmes in the mathematical subjects carried out at the University of Tampere during the last two decades. Each of these reforms challenged the traditional ideas of the type of structure the subject teacher education programme should and could have, what course and other contents it should have, and which institutions should be responsible for the administration of each sector of the education. The chapter examines the motives leading to the onset of these development projects, the basic ideas behind the projects and the life course of each project. Some of the projects are still ongoing, some of them have ended and others will end soon. However, one must remember that although projects end, many of their innovative background ideas continue their lives in some other form in the practices of the institution. As far as the completed projects are concerned, Silfverberg also discusses the reasons leading to the end of the projects despite having had quite a general agreement on the value and innovativeness of the experiments.

According to subject didactic research, the process aspect of mathematics is important to schoolteachers. Through it, teachers can become more committed to their studies at school and achieve

more applied skills and deeper learning, for example. However, in the conventional subject studies at the university level this approach may remain vague. Jaska Poranen in his chapter, **On the process aspect in mathematics through genuine problem-solving**, sets himself a genuine problem through which he wants to achieve a clearer picture of the process aspect. He uses GeoGebra software as a central tool. Many experimental features then come along; many conjectures and hypotheses arise. The process aspect seems to be a chain or a network of conjectures and refutations; it may also include some qualitative reasoning needed for a better understanding. At the end, the author also creates some more general connections of this writing process to certain themes in subject didactics, i.e. in the contents of his teaching as a university instructor.

In the chapter, **Developing interreligious competence in teacher education**, Inkeri Rissanen, Arniika Kuusisto and Elina Kuusisto examine the concepts of teachers' intercultural and interreligious competence and discuss the challenges related to developing them in teacher education by drawing from multiple studies conducted in the Finnish context. They first portray how teacher's intercultural competence and intercultural sensitivity have been defined in the research literature and discuss the particular challenges related to dealing with religious forms of difference. The notion of interreligious sensitivity is described and, as a consequence, the need to better understand what makes a teacher not only interculturally but also interreligiously competent. They discuss the Finnish context and the current status of intercultural and interreligious competences in Finnish teacher education. Also, they elaborate research results from studies that have examined the intercultural and interreligious sensitivities of Finnish teachers and student teachers as well as the development of these sensitivities during the teacher education. At the end of the chapter, they discuss the implications of these findings from the perspective of further development of teacher education.

In their chapter, **Multiculturalism as a resource: Educating teachers with immigrant backgrounds to serve as specialists and valuable resources in increasingly multicultural Finnish schools**, Maija Yli-Jokipii and Jaakko Vuorio introduce the implementation and impact of the *Kuulumisia* project carried out in the teacher education at the University of Tampere. *Kuulumisia* is an ongoing project under which the university provides education and training towards teacher qualification for students with an immigrant background. The authors of the chapter explain the background and possibilities of such education and shed light on the challenges and opportunities faced by teachers with an immigrant background in Finland. Furthermore, selected findings of the background research conducted by Jaakko Vuorio (2015) for his master's thesis are interwoven in the chapter.

In their chapter, **Good enough art teacher: Developing visual identity in teacher education**, Jouko Pullinen and Juha Merta report on their case study among art education students. Their interest was to find out whether the students defined themselves more as future teachers or as artists, and how they believed that they could combine these two different professional identities. They collected data from a course, the purpose of which was to encourage academic discourse between the arts. During the course, students undertook visual and literary assignments, e.g. they constructed portraits in which they designed a picture, selected the location and decided how to settle into the environment and what props to use. The idea was to summarize their personal views on arts 'teacherhood' into one photo. Later on, the photos were interpreted and discussed in groups. After the discussion, the students wrote their identity stories in which they divulged their identity picture after their own interpretation and the collective interpretation process based on their photo. These stories and photos were used as data for the study; they provided the authors with versatile material upon which to explore and describe the identities of art teaching students. At the end, based on the research

results and literature, the authors discuss the issue of who is skilled enough as an art teacher.

In the chapter, **Student teachers' professional growth: A case study of pedagogical practices used during the course Teacher as a Researcher**, Outi Stüber and Anne Jyrkiäinen describe and discuss a case study they conducted in subject teacher education at the University of Tampere. Their purpose was to examine student teachers' professional growth based on Mentkowski and her co-authors' theory (Mentkowski et al. 2000). They explored, designed and evaluated the curriculum and pedagogical practices to support student teachers' professional growth through collaborative learning and knowledge building during teacher education. The case study reported in the chapter follows the principles of Educational Design Research (EDR) and presents one cycle of the EDR. The research data consisted of student teachers' project reports that were designed to espouse social learning among the student teachers and at the same time promote their professional growth. The results show that these types of pedagogical practices reinforce all four domains of professional growth presented by Mentkowski and her co-authors (2000): reasoning, performance, self-reflection and development.

The purpose of this volume has been to draw together a selection of the development work and research conducted in the subject teacher education of the University of Tampere. All authors have been teacher educators at the University of Tampere or are currently researchers and/or educators at the Tampere University.<sup>1</sup>

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<sup>1</sup> The University of Tampere and the Tampere University of Technology were merged in 2019. The name of the new established university is Tampere University.

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# Perceptions on collaboration, time management and meaningfulness

## Millennials' innovations in the subject teacher education programme

*Marita Mäkinen, Johanna Annala and Jyri Lindén*

This chapter presents the highlights of current student teachers' perceptions of the subject teacher education programme (STEP). The study takes inspiration from the 'weak signals' sent by recent student teacher cohorts, which have begun to question the traditions of teacher education more intensely than ever before. Here and elsewhere (e.g. Boggs & Szabo 2011), many teacher educators have considered student teachers' ideas for developing the STEP to be an embarrassing and unexpected state of affairs. However, we argue that student teachers represent one of the key groups that must be heard

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in order to maintain the efficiency of teacher education when facing 21<sup>st</sup> century challenges.

By seeking new ways to listen to and understand these teachers' voices, teacher educators can diminish misunderstandings based on intuitive and tacit generational differences. Consequently, this chapter aims to deepen the understanding of student teachers' perceptions of teacher education, particularly in regards to STEP, through the lens of generation theories (Edmunds & Turner 2005; Kupperschmidt 2000; Mannheim 1952; Strauss & Howe 1991).

While the literature often discusses generational differences, researchers have carried out relatively little empirical research in the educational sciences. The literature is particularly scarce when it comes to integrating the perspectives of today's student teachers. Also notable is the fact that most research on generational differences has been conducted in the US. For example, Boggs and Szabo (2011) approached the phenomenon normatively by developing coursework activities as a means to help pre-service primary teachers examine and understand their work habits, attitudes and beliefs from a generational perspective. This approach also aimed to help the student teachers work amiably with in-service teachers during the student-teaching experience.

Bontempo (2010) explored the needs of Millennials (Howe & Strauss 2000) in K–12 school settings by identifying the factors that motivate them to remain in teaching jobs. The study was inspired by the fact that half of all teachers leave the profession within the first five years. Rodriguez and Hallman (2013) explored the ways in which the millennial themes of globalization and shape shifting were present in prospective teachers' learner biographies.

This chapter contributes to the literature about Millennials, also known as 'Generation Y' (Hurst & Good 2007). Most of today's student teachers were born after 1980 and are therefore characterized as members of the Millennial generation. In the following sections, we start by briefly depicting the context and procedures of the study.

We continue by introducing the main ideas of generation theory, paving the way for an understanding of the subsequent sections where we present the highlights of the student teachers' perceptions. Accordingly, we discuss these perceptions in tandem with generation theory and previous findings about Millennials in the context of Finnish pre-service teacher education.

## Brief introduction to the study of student teachers' perceptions

### Context

The study (Mäkinen, Lindén, Annala & Wiseman, 2018) introduced in this chapter was conducted in the STEP (2014). The STEP is provided by the University of Tampere in cooperation with the School of Education (SE), Teacher Training School (TTS) and Disciplinary Faculties (DF). The STEP primarily aims to educate teachers specializing in particular subjects for secondary and both general and vocational upper secondary schools. The programme is intended to be congruent with the OECD model (OECD 2005) in which disciplinary subjects are studied alongside educational theories and teaching practice. In addition, the STEP curriculum follows the European Teacher Education Curricula (European Commission 2007), consisting of general pedagogy, practice in schools and subject didactics.

The staff members who teach in the programme are general educationalists, teacher educators and supervising teachers. Focused on the didactics of one or more school subjects, the teacher educators differ from general educationalists (cf. Tryggvason 2012). Supervising teachers supervise the teaching practices, which are performed at the TTS. The STEP is implemented in disciplinary groups in accordance with school subject areas: mathematics and science, languages and

social sciences. Accordingly, the teacher qualification requires a master's degree in the DF for the students' majors.

## Procedure

**Method.** The study utilized an interpretative phenomenological approach (IPA), which is based on Heidegger's (1927/1962) and Gadamer's (1960/1975) philosophical worldviews, and on the concept that people create meaning from life experiences, and their perspectives emerge as they relate to particular times and places. In accordance with IPA, we derived the interpretations from the respondents' shared life experiences and relationships with their peers, teacher educators, and and supervising teachers.

**Respondents and data.** The study was conducted in the form of semi-structured interviews by recruiting a small group of volunteers (10 females and 3 males) who represented each disciplinary group. By limiting the focus to this small group of volunteers, we were able to hone in on a nuanced view of their individual realities. All of the respondents were born in the 1980s. At the time of the interviews, the respondents' ages ranged from 25–32 years, so they formed a small generation unit (cf. Mannheim 1952) regarding their life experience. The interview process comprised topics concerning each respondent's experiences while studying in the STEP; the challenges and resources each student was required to manage depending on their personal situation. Giving the interviewees freedom to answer any way they chose was beneficial because they felt comfortable enough to identify the issues relevant to them.

**Ethics.** Our ethical responsibility to the respondents was also a serious consideration in how the data were collected, treated and interpreted. The email contacts and interviews were conducted by two research assistants who were not familiar with the STEP or with the student teachers being interviewed. Through continuous collective reflections and researcher triangulation, we ensured that no one

imposed their own expectations when analysing and interpreting the data. To mitigate the potential of our own assumptions affecting the results, we used bracketing in accordance with Munhall (1994).

**Analysis.** The data were latent content analysed using an abductive research strategy first introduced by Peirce (1966). For the present purposes, abduction refers to the process of forming a plausible explanation of the phenomenon. The analysis consisted of four stages. In the first stage, the transcripts were examined thoroughly to gain an overall familiarity. In the next stage, the basic unit was identified as a view that an interviewee had adopted. These units were then broken into two types: units based on the interview topics and units that emerged through several readings of the transcripts. In the third stage, we mapped out the interviewees' patterns based on the units constructed in the preceding phase. Finally, we selected and classified the specific pertinent passages that resembled the characteristics of the Millennials suggested in earlier research.

## Generation theories

Mannheim's (1952) views on generation lay a basis for examining how current student teachers fit in with the teacher education. Mannheim defined generation as a group of people born and raised in the same general chronological, social, and historical context. He emphasized that both the generational location and the formative experiences during youth are key determinants of a particular generation. Generational location refers to definite modes of behaviour, feelings, and thoughts, and formative experiences involve participation in the social and intellectual climate of their time and place (cf. Pilcher 1994).

## Coupling of generation and cohort

It is important to note that Mannheim (1952) used generation to mean cohort, which refers to people within a delineated population who experience the same substantial events within a given period of time. In fact, Mannheim's definition is seminal because it considers both chronological and socio-historical approaches to defining cohorts. The chronological approach refers to a cohort born at a particular time that shares common transitions throughout the life-course, while the socio-historical approach defines generation as a cohort who shares a collective consciousness or memory (Edmunds & Turner 2005).

Moreover, Mannheim's theory considers the differences both between and within generations. Actual generations are formed by the collective experience of major events or traumas while generational units refer to groups within the same generation that cope with their experiences in different and specific ways (Edmunds & Turner 2005). This implies that there are sub-cultures that form through a smaller group of people with similar locations and experiences.

Mannheim's description has been supported and expanded by several researchers. For example, Kupperschmidt (2000) defines generation as a group of people who share birth years and experiences as they move through time together, influencing and being influenced by a variety of critical factors. The specific timespan of each generation has been estimated to cover approximately 20 to 25 years. In sum, the cohort theorists argue that growing up at about the same time and experiencing events at about the same point in one's development inevitably leads to similar values, opinions, and life experiences of people within each cohort (Edmunds & Turner 2005; Kupperschmidt 2000; Strauss & Howe 1991). Although different scholars use different dates, the majority of the literature agrees that the Millennial generation's birth years span the period from 1980 to 1999 (Kupperschmidt 2000).

The generational approach has also received critique. In sociological generation research, Donnison (2007) points out two major deficiencies. First, generation research has been limited to certain (Western) cultures. Second, the orientations, qualities and needs of Millennials are mostly examined from the institutional and cultural perspectives of previous generations. Donnison (2007) points out that in this case the interpretations may reflect more the previous generations' enculturation into the sociocultural context of the 1980s and 1990s than the generation which they try to describe. In psychological and educational research, the critique is often targeted at the analytic worth of the generation concept and its problematic models of explanation (e.g. Helsper & Enyon 2009). Admittedly, one of the biggest issues in researching generations is that the impacts of age, cultural period and generation are logically intertwined and, accordingly, it is extremely difficult to examine just one of those separately (Purhonen 2002). Moreover, in popular discussion the psychobabble stereotypes of Millennials dominate with no connection to research.

However, despite this critique, we believe that when used as a lens, generation is a potential concept in sociological research of education. It provides a framework to understand meanings of collective experiences and discourses by reflecting those with shared formative experiences. As Corsten (1999, 258) puts it, members of generation are not connected by common factors, but they are also linked to one another by the feeling of the fact that they are linked.

### Millennials' formative experiences

Differences between generations are attributed to the powerful influences of the environment within the socialization years. These influences deeply impact the development of an individual's personality, values, and expectations (Macky et al. 2008). The experiences that reflect major shifts in the sociocultural environment,



such as highly salient events that one generation experiences, major changes in lifestyles, traumatic events, major socioeconomic events, and advancements in technology, are the most significant (Cennamo & Gardner 2008). Therefore, due to the history and the culture of the 1990s and the 2000s, the Millennial generation has distinct formal experiences. Edmunds and Turner (2005) argued that beginning in the 1970s, the generational cohorts should be considered global because “while generations and generational change have traditionally been understood in national terms, there are reasons to suppose that globally experienced traumatic events may facilitate the development of global generations” (Edmunds & Turner 2005, 564).

The early years of the Millennials can be characterized as being sheltered and insecure. The most significant globally frightening events in their early years were the threats of violence, terrorism, and natural disasters. These include severe school shootings in North America, Germany and Finland in the 1990s and 2000s; the September 11 terrorist attacks (2001) and other threats of terrorism; the Madrid train bombings (2004); the Norway attacks (2011); the sinking of the Baltic ferry Estonia (1994); the Asian tsunami (2004); and the environmental threats, especially regarding climate change.

Major political events were also important, such as the Cold War (1985–91), the break-up of East Europe in the early 1990s, and the fall of the Berlin Wall (1990). Also influential have been the socioeconomic global transitions, such as the rise of corporate multinational capitalism, share market collapses, sustained recessions, pervading unemployment rates, and loss of job security through the 1980s–1990s due to restructurings, privatizations and more recently offshoring (Macky et al. 2008). In Finland, the Millennials have experienced the influence of the overheating of the Finnish economy that finally turned the country into a severe recession the beginning of the 1990s by entailing a deep depression and a huge increase in the unemployment rate from 3 to 18 per cent. In 1995, Finland joined the European Union.

Despite the difficult circumstances, this age group has been referred to as “Gen Sunshine” and “Gen Me,” which reflect the societal influences during their formative years (Huntley 2006; Twenge 2006, 2009). The descriptions are related to a societal cultural shift in which parenthood became a choice. According to Twenge (2006), this generation experienced continuous praise and encouragement, which reinforced their strengths and the development of their self-esteem.

Similarly, Myers and Sadaghiani (2010) and Broadbridge et al. (2007) suggest that Millennials have been raised overall with dedication, approval, and affirmation. This positive disposition may contribute to valuing high achievement and a strong sense of fairness and equality. Concurrently, divorces and single parent families have become more frequent (Cennamo & Gardner, 2008). In Finland, nearly a third of marriages (32%) resulted in divorce in 1980, but 45%–53% of marriages have ended in divorce since 1990 (Statistics Finland 2012). Furthermore, children are frequently exposed to drugs, violent video games, and sexually-charged advertising in every developed country.

Their formative years included a rapid evolution of information and communication technologies (Chelliah & Clarce 2011; Myers & Sadaghiani 2010). They were born in an era in which the Internet was established (in the early 1980s). Hence, they are labelled as techno savvy “Net Generation” (Tapscott 1998) and “Digital Natives” (Prensky 2001). Technology and online social networks are integral parts of Millennials’ social and personal life and identity construction (Macon & Artley 2009). However, although many studies have emphasized the role of technology in their life (Howe & Strauss 2000; Nimon 2007), researchers seem to disagree on whether or not the digital lifestyle and the use of technology are as powerful factors in identity construction as they are argued to be.

## The STEP through the lens of Millennial student teachers

The study offered insights into the Millennial student teachers' expectations and preferences in the context of initial subject teacher education. The findings identified descriptors of the Millennials as idealistic, sociable, self-assured, reflective, and achievement-oriented student teachers. In this respect, the analysis raised similar features of Millennials' perceptions and outlooks of life as have previous studies conducted in the higher education context (e.g. Howe & Strauss 2000; Lichy 2013; Twenge 2009). However, these features may refer to youth of all generations, especially in Western welfare states. Nevertheless, although the data did not provide a solid basis for interpretations regarding demographic changes in the student teacher population, they offered the prospects' viewpoints that may positively inspire the development of the STEP instead of promoting the ever-increasing reference to the stereotypical students of today.

The findings raised three phenomenological themes, and each theme partially interpreted the perceptions of current student teachers concerning their STEP studies. The themes were their perceptions of a) collaboration, b) time management, and c) meaningfulness in terms of the STEP studies. Next, we will briefly discuss these themes along with the emerging meanings, which are examined along with the insights of recent research on generations.

### Three perceptions of designing the STEP

**Perceptions of collaboration.** The interviews revealed that the student teachers' experiences were affected by the STEP as a social environment with interpersonal relationships. Therefore, they interpreted the schedule confusions and unclear expectations as examples of lack of collaboration. Moreover, they also reflected quite

sensitively on the reality of the relationships between student teachers and teacher educators. They did not hesitate to challenge authority or express negative feelings, as well as positive ones, about the ways they were treated.

In fact, they wanted to be considered as junior colleagues. These views concerning concrete actions and participation were consistent with current research on the Millennials' social consciousness and their desire for tangible collaboration (Myers & Sadaghiani 2010; Ng & Gosset 2013). They expected the STEP to prepare them for the multiple tasks that take place in participatory environments in school communities. They were appreciative when their ideas were acknowledged and desired to have their experience and enthusiasm taken seriously (cf. Wong & Wong 2007). In other words, the student teachers sought a balance between support and guidance, and autonomy and responsibility that would allow them to experiment and test their wings in multiple learning environments, which is illustrated in the following comment:

It would have been interesting if there could be, for example, one week when two of us could arrange the school practices as a whole with the supervising teacher, or something like that, but we have just the theoretical. Oh, I wish we could have had something like that. (13)

Hereby, their views were consistent with previous studies on Millennials. Broadbridge et al. (2007) noted that Millennials tend to desire recognition for their skills and talents, and that they respond enthusiastically to responsibility. Similarly, Ng and Gosset (2013) argued that the Millennials want to make a positive contribution to the community. The interviewees seemed to strongly believe that trust and responsibility are based on shared communication, fairness, and negotiation. However, contrary to expectation, collaboration in online environments was only briefly discussed as a matter of course, such as “being connected across computers” (3). Despite being

technologically savvy (e.g. Lichy 2013), the respondents' desires for open communication were the most significant.

**Perceptions of time.** The interview data indicated conflicting approaches to time between the respondents and the STEP. The themes of possessing, investing, wasting, and budgeting time were primary issues in the data. The student teachers tended to allocate time to their studies, work, families, hobbies, and other activities and to schedule their lives with high efficacy and flexibility. Their descriptions of time gave the impression of the group members as multitasking individuals who were experienced in organizing their lives with calendars, and liked to have control and ownership of time. They discussed the clock time as a resource requiring management. Accordingly, the respondents sought a time balance between the different activities in their lives.

Their time orientation is illustrative of Nowotny's (1994) theory, which distinguishes between the time of individuals and the time of systems. One prominent feature in the data was that the clock time was experienced as a resource possessed mainly by the system, which had the authority to demand the students to devote themselves to the STEP. The problem was when they could not participate in the other courses offered by the DF, because they were expected to allocate their time only to the STEP. This is exemplified in the following:

We have an obligation to be available from 8 am to 6 pm every day. This time consuming is stressful because these 35 ECTS, what we get from the STEP studies in this year, we can't get the study grant [guaranteed by the state for each student] [-] Can one require that student teachers don't have any other life than the STEP studies? (11)

Another salient feature of the data was that the demands of compulsory attendance and the expectation that duties be performed at specific times were in conflict with their understanding of educational ideals. They were eager to ask "what for" and "why" questions when instructed

to study or perform in some special way. They suggested that many things could be learned with fewer hours spent in the classroom or alternative formats and pointed out that the focus in learning should not be on the amounts of time spent engaged in different activities in certain physical places.

It seemed slightly contradictory that the respondents wanted more autonomy but, at the same time, expected clear guidelines about participation and structured schedules. This indicated that the students were seeking a participatory role in scheduling. Their thoughts were parallel to Adam's (1995) notions about clock time, which positions the timing and intensity of activities in socially and culturally constructed temporal frames, and thereby should be flexible and changeable. Therefore, time was a major source of negative feelings, and the interviewees interpreted time demands as a form of social control (cf. Lee & Liebenau 1999).

The respondents experienced the schedules as unpredictable because of idling during the days, but also because of unexpected arduous assignments. These affected the students' personal, social, and so-called 'proper time' (cf. Nowotny 1994). The discussions about proper time referred to, for example, difficulties in planning things with a friend. In some cases, however, the students desired to spend proper time focusing on study assignments and other tasks at their own pace in their own manner (cf. Nimon 2007). Therefore, the different life and time spheres of the Millennials were interwoven.

**Perceptions of meaningfulness.** The present data feature discussions regarding the respondents' experiences with the purpose and meaning of the studies in the STEP curriculum. The student teachers gave an impression of themselves as people looking for value in every context of their lives, including their studies. Thus, they expected the STEP to reveal the connections between their personal experiences, required tasks and real-life professional competencies.

They compared the teaching practices to their previous or ongoing school experiences in the field. Many of them were aware of their

own knowledge bases and based their judgments on their prior experiences, as in the following:

I have worked as a substitute and I know what a teacher's daily life is. I have experience working with colleagues and parents, and being in contact with various social welfare persons. I feel stupid when we don't get any true chance to try things concretely. The only thing we get is the experience of standing in front of the class and we learn how much preparation is needed to master all the contents and subjects. (11)

What I miss that the STEP could be organized throughout in such a way what is known about how students learn nowadays, not to learn the subject contents by heart. (3)

As the quotes reveal, 'pedagogical content knowledge' followed by Shulman (1987) was emphasized in teaching practice. That is to say, the student teachers were taught how to transform content knowledge into pedagogy by constructing learning experiences that organized the subject matter considering particular pedagogical practices. However, respondents struggled to interpret this information in light of uncertainty in learning, the heterogeneity of students and their own experiences. Similarly, as they were familiar with holistic and reflective thinking, they disagreed when teaching and learning were modelled or theorized without any real-world context.

Accordingly, the STEP teacher educators' abilities to demonstrate the exchange between theory and practice were observed, and their authority depended on actions rather than societal hierarchies or academic positions. Nevertheless, interviewees identified traits they admired in teachers or that they considered useful for instructional purposes. They recognized whether the educators 'practiced what they preached'.

The student teachers had ideas of what types of activities would be useful and how the expectations related to their future as professionals.

Their opinions exemplified what Twenge and Campell (2008) referred to as a characteristic of overconfidence among the Millennials. However, the data did not indicate any particular signs of extremely high self-esteem; rather, respondents' dissatisfaction reflected their desires for more intrinsic than extrinsic rewards and their hopes of leading more purposeful and interesting professional lives (cf. Ng & Gosset 2013). Their meaningful learning experiences tended to focus on obtaining a balance between their contributions to the community and pursuing ways to form their professional identities.

In summary, student teachers expected their studies to offer meaning and usefulness in relation to important issues, which would prepare them for a teaching career. Their needs for significance were related to the notion of authenticity, which stems from the prerequisite for being true to oneself by critically reflecting on self, others, relationships, and contexts (cf. Kreber 2013; Taylor 1991). Previous studies indicate that the Millennials have high expectations to find fulfilment and meaning in their work (Twenge & Campbell 2008). In turn, the current findings give a somewhat contradictory picture of Millennials' needs for self-reliance, their external loci of control, and their desires to contribute to something they find worthwhile.

## Discussion

According to the results, the respondents expressed shifting perceptions. For example, their shared focus was time management and work-life balance between personal time and the time required by the programme. Therefore, they desired a thoroughly structured programme that could provide flexible alternatives in developing teaching professionalism both individually and collectively. They appreciated that study options and instructions were clearly presented, but felt that their proficiency in self-awareness and self-monitoring as well as their desire to create a balance between personal and professional time should be respected.



Despite this ambivalent desire for flexibility and stability, the respondents shared a useful perspective that should be considered when creating a more student-centred learning environment. As Bennet and Marton (2010) noted, students are increasingly sharing their life experiences using social media. The negotiations of existence and identity are also increasingly taking place online, which is changing the dynamics of presence and attendance. Therefore, new ways of building up a life narrative are highly influential normative experiences for the Millennial generation. In this case, stable study programme structures in flexible environments may be an effective approach to engaging student teachers in active and dynamic learning processes.

Furthermore, the respondents shared their need for the STEP to fulfil their expectations of meaningfulness. They challenged the authorities (supervising teachers and teacher educators) to recognize and empower their full potential, which is in line with the findings by Wong and Wong (2007). They both admired and criticized the cultural habits in the programme. Their levels of trust in the relationships were in constant flux. The findings indicate that the respondents need to identify the authenticity (cf. Kreber 2013) of the activities in the teacher education. In addition, they perceived teaching as an interpersonal career and viewed the formation of good relationships with pupils and colleagues as the most important responsibility of teachers.

The student teachers involved in the study took an active role in challenging some of the traditions and cultural practices of their education. The results led to an interpretation of the core of teacher education as characterized by reciprocal participation created through the continuous interaction of the student teachers, supervising teachers, and teacher educators. Therefore, we suggest that the notion of social practice (Hedegaard et al. 1999) that builds on the connection between the practices of the programme and the social nature of the student teachers should be a driving force in the

design and implementation of teacher education programmes. This perspective is in profound contrast to the deficit view that has been applied to Millennials, which associates authenticity with narcissism and self-centeredness. Chickering et al. (2006) linked authenticity to caring and socially responsible practices, which seemed to be a common value among Millennials. Therefore, by considering these student teachers' initiatives and voices, it is possible to update initial teacher education programmes to support their professional development.

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## **Part II**

### **Language Teacher Education**





# Advancing language education in the context of developing the European Language Portfolio in Finland

*Viljo Kohonen*

The chapter traces briefly the processes of developing foreign language education and the European Language Portfolio (ELP) within the Council of Europe, Strasbourg.<sup>1</sup> The ELP developments in Finland are examined as part of the Council's innovative work on foreign language teaching aimed at promoting socially responsible learner autonomy and self-assessment in language education, spanning thirty years (from the early 1980s to 2014). The Finnish ELP-oriented research and development work was conducted in several intensive collaborative projects that involved university departments of teacher

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<sup>1</sup> The Council was founded in 1949 with the prospect of developing a greater unity between the European parliamentary democracies through cooperation between governments, members of parliaments and experts of member states. The Council seeks to protect and develop human rights and democracy in a variety of fields. It has 47 member states. (website: [www.coe.int/](http://www.coe.int/))

education and numerous primary and secondary school language teachers and their pupils.

## Developing European language teaching towards a common theoretical framework of language education

The work leading to the *Common European Framework of Reference for Languages* (CEFR 2001) and the ELP has a long history of professional collaboration carried out under the auspices of the Council of Europe (CoE) in Strasbourg, France. The Council has consistently emphasized the need for all European citizens to learn languages for mutual understanding, personal mobility and access to information in multilingual and multicultural Europe. To promote these far-reaching goals, the CoE has coordinated several long-term research and development projects in language education involving collaboration between experts in the member states, to conceptualize the emerging pedagogical needs and facilitate the challenging developments.

In the early 1980s, the innovative work was launched with an extensive long-term project called **Project 12 (1982–87): Learning and teaching modern languages for communication**. The project involved a large number of expert visits to other member states, resulting in a rich professional network throughout Europe. The project brought up the idea of a common European approach in language teaching aimed at supporting learner autonomy and self-directed language learning, including self-assessment. (Girard & Trim 1988; Trim 1988).

The developments were pursued further in the next long-term project **Language Learning for European Citizenship** (1989–96), which emphasised the new types of communicative needs in education and work life due to increased international mobility. The

emerging goals entailed the notions of multilingual and multicultural language teaching aimed at supporting intercultural communicative competence and self-directed learning and self-assessment (Trim 1988; Kaikkonen 1994; 2001; 2002; in this volume; Byram 2003). It was realised that teacher education has a central role in carrying out the necessary pedagogical innovations in schools.

To increase transparency in assessment, a common theoretical framework, based on the same criteria in the member states, was considered necessary for tracing continuing language learning. The role of evaluation in communicative language teaching was discussed intensively in several working groups and symposiums organised by the Council of Europe between the mid-1980s–1990s. Criterion-referenced self-assessment was considered essential for aiming at self-directed language learning as part of citizenship education in multilingual and multicultural Europe (Kohonen 1988; 1992a; Kohonen & Lehtovaara 1988; Trim 1988; 1992).

To establish the principles for a coherent and transparent framework for assessing and reporting language proficiency, the Council of Europe organised an important symposium in Rüschtikon, Switzerland, in November 1991 (North 1992). The symposium worked out a proposal for the European Language Portfolio (ELP), associated with the then forthcoming *Common European Framework of Reference for Languages* (CEFR).

The structure of the ELP was outlined by Rolf Schärer, based on careful preparatory work in a small expert group (Schärer 1992). According to the proposal, pupils could organise their achievements, plans, reflections, observations and work samples in *a language portfolio*, defined as a “purposeful collection of learner work that exhibits their efforts, progress and achievements” (Kohonen 1992b, 84). The ELP consists of the following three obligatory components:

- *a language passport*, which summarizes the owner’s linguistic identity by briefly recording the second/foreign languages learned, formal language qualifications achieved, significant

experiences of L2 use, and the owner's assessment of his/her current proficiency in the languages he/she knows;

- *a language biography*, which is used to set language learning targets, monitor progress, and record and reflect on important language learning and intercultural experiences;
- *a dossier*, which can serve both a process and a display function, being used to store work in progress but also to present a selection of work that in the owner's judgement best represents his/her L2 proficiency. (Little et al. 2011, 7.)

While the **CEFR** was intended to provide tools for the development of language curricula, programmes of teaching and learning, textbooks and assessment instruments, the **ELP** was designed to mediate to learners, teachers and schools, and other stakeholders, the ethos that underpins the CEFR: respect for linguistic and cultural diversity, mutual understanding beyond national, institutional and social boundaries, the promotion of plurilingual and intercultural education, and the development of the autonomy of the individual citizen. (Little et al. 2011, 5.)

In an experiential, reflective learning framework (Kolb 1984; Kohonen 1992a, b; 2001), language teaching was seen as *language education* supporting reflective self-directed learning. Reflection and interaction were considered essential for building intercultural communicative competence, which entails a pedagogical emphasis on cooperative learning in small groups. (Kolb 1984; Kohonen 1988; 1989; 1992c; 2001; 2002a, b; Little 1991; 1999; 2001; Jaatinen 2001; Kaikkonen 2001; Lehtovaara 2001; Edge 2002; Kohonen & Lehtovaara 1988.) The current format of the ELP and the pedagogy for socially responsible learner autonomy evolved gradually in the course of an intensive research and development agenda that was conducted in the member states. The outcomes of the work were discussed at several

joint symposiums, resulting in a number of reports published by the CoE. (Trim 1988; 1992; 1997a, b; North 1992; Schärer 2000; 2008; Little et al. 2011.)

## Advancing language education in Europe: the Common European Framework of Reference (CEFR) and the European Language Portfolio (ELP)

The CEFR (2001) assumes a clear emphasis on interactive learning in foreign language education, presenting an action-oriented view of communication. It proposes the notions of learner autonomy, plurilingualism and pluriculturalism as goals of foreign language teaching for democratic citizenship education in multicultural Europe. The language user is seen as a person and a social actor, as a human being, whose identity is constructed in complex social interaction. (Trim 1992; 1997a; Little 1999.) Language teaching is thus aimed at developing working methods that will strengthen “independence of thought, judgement and action, combined with social skills and responsibility” (CEFR 2001, 2–4; Trim 1997 a, b; Little 1999; 2001).

According to the classic definition by David Little, *learner autonomy* essentially involves a “capacity – for detachment, critical reflection, decision-making and independent action”, whereby pupils need to develop a responsible, self-directed orientation to their learning (Little 1991, 4). Little puts forward three essential principles for advancing autonomy: (1) The principle of learner engagement entails that pupils are brought to assume an explicit acceptance that they are responsible for their own learning. They need to be taught how to plan, monitor and evaluate their learning. (2) The principle of learner reflection suggests that behind such processing abilities is the pupils’ capacity for detachment and reflection on their learning. (3)

The principle of appropriate target language use involves a maximal use of the target language in the course of learning, whereby pupils develop a genuine language user's proficiency in spontaneous language use. (Little 1991; 1999; 2001.)

Based on the CEFR, the *European Language Portfolio* (ELP) provides the central concepts and practical tools for translating the educational paradigm into pedagogical action. The goals of the CEFR manifest in the principles of the ELP, whereby the ELP: 1) is a tool to promote plurilingualism and pluriculturalism; 2) is the property of the learner; 3) values the full range of language and intercultural competence and experience; 4) is a tool to promote learner autonomy; 5) has the pedagogic and reporting functions; 6) is based on the Common Reference Levels, and 7) encourages learner self-assessment and the recording of assessment by the teachers and other experts. (Little 1999; 2001; 2004.)

Consequently, the ELP is a resource for developing, and a format for documenting, the language users' progress towards the communicative goals of the CEFR. These goals are summarized in the above principles that constitute the common European core of the ELP (Principles 2001/2011). In this educative process, responsibility is shifted progressively to pupils, as appropriate to their age and proficiency in the target language. (CEFR 2001; Kohonen 1999; 2001; 2002a; Little 2001; 2004, 22–3.)

The ELP makes the goals of the CEFR more concrete and accessible to the language users in terms of what they are able to do with the target language in meaningful, authentic communication. For this purpose, the CEFR introduces a great number of criterion-referenced *descriptors* for the different skills, defined as clear, transparent and positively formulated communicative acts that are needed for performing tasks. In self-assessment, pupils consider and assess the level, quality and range of their foreign language proficiency using the “I can” descriptors in the Self-assessment Lists (Checklists), based on the Common Reference Levels (A1, A2; B1, B2; and C1, C2), as provided in the CEFR. (CEFR 2001, 24–30.)

*Advancing language education in the context of developing the European  
Language Portfolio in Finland*

The ELP has two educational functions: (1) the pedagogic function, to support pupils in the ongoing process of language learning, and (2) the reporting function, to record proficiency in different languages in the Language Passport. The distinction between these functions is vital for understanding the potential of the ELP to enhance foreign language education. The functions are strongly interdependent: “The ELP will not easily fulfil its reporting function if it has not been central to the individual’s language learning experience; on the other hand, the ELP’s pedagogical function depends on the fact that it provides the learner with the means to record key features and events in his/her experience of learning and using languages” (Principles 2000/2011, 5). Moving towards socially responsible learner autonomy entails a new kind of professional identity for the teacher as a language educator. (Kohonen 1992b, c; 1999; 2001; 2002a, b; Little 1999; 2001; 2004; Hildén 2002.)

The notion of *language education* involves the following guidelines for language teaching: 1. The pupils’ own goals and autonomy; 2. Personal engagement in learning; 3. Pupil initiative and responsibility; 4. Meaningful learning as a whole person approach; 5. Emphasis on reflection, interaction and self-/peer-assessment; and 6. Integration of social and affective learning with cognitive goals. The principles pose new challenges for teacher education and teachers’ professional growth as a reflective approach. They also entail an experiential, cooperative learning culture, encouraging the participants’ contextual understanding of the educational processes. (Kohonen & Lehtovaara 1988; Kohonen 1989; 1992c; 2001; Jaatinen 2001; Kaikkonen 2001; Lehtovaara 2001; Edge 2002; Sahlberg & Sharan 2002.)

In the course of the ELP research and development work, it became evident that the targeted pedagogical changes would also require innovations in teacher education towards collegial collaboration (Kohonen 2005). To promote ELP implementation through teacher education, the Council of Europe set up a small expert team, led by David Little, to develop the professional learning framework



and design a kit of ELP-oriented teacher education material for the joint pedagogical enterprise. To mediate this material to language teachers, the Council facilitated the organisation of a large number of teacher training events in the member states. This work was carried out within the three-year **Project C6**: “Training teachers to use the European Language Portfolio”, conducted under the auspices of the European Centre for Modern Languages (ECML) in Graz, Austria between 2004–07 (Little et al. 2007).

The Project C6 team designed an extensive medium-term research and development programme to enhance language teacher education in the member states. The team pooled together the comprehensive amount of pedagogical material resulting from numerous national ELP training events conducted as part of the project, reviewed it and designed additional materials in response to the specific needs arising in different national contexts. All of the material was also made available on a CD-ROM that was included in the Project C6 report “Preparing teachers to use the European Language Portfolio” (Little et al. 2007).

The Council of Europe thus had an important role in coordinating the developments in ELP-oriented language education through a network of national contact persons and other experts nominated by the member states. The work also involved a large number of professional visits, task groups, workshops and symposiums in the member states, and disseminating the reports that resulted from the extensive research and development work. For this purpose, the Council has established the ELP website as a free resource for language teachers and educational materials developers ([www.coe.int/portfolio/](http://www.coe.int/portfolio/)).

## Developing the FinELP as an instrument for experiential language education through university-school partnerships

The Finnish version of the European Language Portfolio (FinELP) for compulsory education was developed in connection with the Council of Europe's work aimed at supporting socially responsible pupil autonomy. This work was accomplished as an outcome of five consecutive action research projects spanning twenty years:

- (1) The OK School Development Project (1994–98)
- (2) The Finnish ELP Pilot Project (1998–01)
- (3) From piloting to implementation: the ELP Mentor Project (2001–04)
- (4) The OSKU project (2006–09)
- (5) The KISA Project (2010–12).

These projects are discussed next from the perspective of advancing foreign language education through the teachers' collaborative professional growth.

**(1) The OK School Development Project (1994–98)** was led by Pauli Kaikkonen and Viljo Kohonen. Some 40 teachers from six schools in the vicinity of Tampere participated in the project. The joint project planning work resulted in the following pedagogical principles, which evolved gradually during the initial year of the project (1994–95): 1. Site-based curriculum design, whereby the schools assume ownership of their pedagogical development work; 2. Collegial collaboration, establishing site-based teacher teams in each school; 3. Networking of the schools (primary; lower/upper secondary); 4. Openness of action, sharing information in the schools, and 5. Experiential learning orientation, encouraging teachers to see themselves as researchers of their work through reflective participation. (Kaikkonen & Kohonen 1996; Kohonen & Kaikkonen 1996; Kaikkonen & Kohonen 1998.)

The OK project was aimed at fostering the teachers' professional growth in an experiential learning approach (Kolb 1984; Kohonen 1989). This involved active collaboration with an emphasis on reflective, autonomous learning and intercultural education (Kaikkonen & Kohonen 1998; Kohonen et al. 2001; Kohonen & Kaikkonen 2002; Sahlberg & Sharan 2002). To facilitate the participants in developing cooperative pedagogy in their classes, regular in-service workshops were organised during the project, lasting half a working day or a full day. The design of these workshops encouraged a collegial professional culture through extensive reflection and sharing of personal experiences in small groups.

The teachers were further guided in clarifying their educational goals and interests by providing several sessions on reflective learning and qualitative research as the theoretical underpinning of the project. The project leaders also introduced the idea of the language *teacher's portfolio* as a tool for supporting professional reflection and growth. Based on their portfolio material, the teachers were invited to write a personal developmental essay at the end of each school year to submit to the researchers. The essays helped them make sense of their classroom experiences while also providing authentic qualitative research data for tracing the pedagogical classroom developments in the course of the project. (Kaikkonen & Kohonen 1998.)

In connection with the workshops, the teachers also agreed on syllabus-based pedagogical tasks to teach in their classes and to report their experiences at the following workshop. The discussions promoted the spirit of open collaboration, shared responsibility and mutual learning. The OK project thus provided a common forum for the participants to discuss, conceptualise and evaluate their pedagogical experiences, and plan further work together. (Kohonen & Kaikkonen 2002.)

The findings indicated that an educational change is not just an intellectual and rational matter of learning the factual information. It is also very much a question of undertaking the necessary emotional

work inherent in any major changes. For many teachers, the personal discoveries were accompanied by feelings of increased professional competence, being energised by the collegial collaboration. For some, the new practices also posed a threat to their current educational beliefs, entailing the need to modify their understandings. Collegial support and sharing were helpful for all. (Kaikkonen & Kohonen 1996; Kaikkonen & Kohonen 1998; Kohonen & Kaikkonen 2002.)<sup>2</sup>

(2) **The ELP Pilot Project of the Council of Europe** (1998–2000) was carried out in 15 national project groups working under the auspices of the Council of Europe, with a total of some 31,000 pupils in the projects of the participating member states. The principles and guidelines of the ELP resulted from the intensive work conducted at many joint seminars in the member states. According to the project report (Schärer 2000), a central finding was that the ELPs were generally well received and worked satisfactorily in the various national settings. There was an agreement that the ELP should basically consist of three parts: the language passport, the language biography and the dossier. Such a common core was seen as an essential European dimension for the pedagogical research and development work. It was also considered a pre-requisite for the international reporting role of the ELP to become feasible.

The report drew the following general conclusions based on the data from the participating countries: (1) The ELP as a learning tool is feasible from a pedagogic point of view; (2) It addresses key educational issues in Europe; (3) It fosters the declared aims of the Council of Europe. The report consequently recommended a wide implementation of the ELP throughout the member states, to

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<sup>2</sup> The OK Project (1994–98) was conducted in close collaboration between Pauli Kaikkonen and Viljo Kohonen. We were jointly responsible for the evolving design of the theoretical project framework, the qualitative data collection, as well as co-teaching at the project workshops, evaluating and planning the ongoing action and co-editing the joint publications. In addition to this shared responsibility, Pauli Kaikkonen investigated the pupils' experiences of intercultural learning and their identity building (Kaikkonen, in this volume), while Viljo Kohonen focused on the teachers' professional growth during the course of the OK project.

maintain and support linguistic and cultural diversity. (Schärer 2000, 12–15.)

Based on the findings, the Education Committee of the Council of Europe accepted the jointly prepared document *Principles and Guidelines* of the ELP in 2000 (revised in *Principles* 2011). It emphasised the quality and credibility of the ELP as a pedagogic and reporting tool in the European context (*Principles* 2000). In their meeting in Cracow (in October 2000), the Standing Conference of the Ministers of Education of the Council of Europe member states adopted the following Resolution on the European Language Portfolio: “the Governments of the member states, in harmony with their education policies, implement or create conditions favourable for the implementation and wide use of the ELP according to the *Principles and Guidelines* laid down by the Education Committee.” (Resolution 2000.)

The **Finnish ELP pilot project (1998–2001)** was conducted as a three-year project and was part of this large European project, led by Viljo Kohonen and Ulla Pajukanta. The project made it possible to trace the progress of the same pupils for the entire three-year cycle of schooling (in primary and secondary education). It took place in eight schools, with a total of 360 pupils and 22 language teachers (Kohonen & Pajukanta 2003; Kohonen 2004). The project undertook the challenge of creating a Finnish version of the ELP, in line with the then forthcoming Finnish National Framework Curriculum (2004). The decisions concerning the project implementation were made together at monthly seminars, which also provided ample time for teachers to discuss in collegial small groups, sharing and considering their pedagogical experiences in the classes and doing further planning.

To introduce the reflective orientation to their pupils, the teachers assisted them in reflecting on their language learning experiences, and how they saw their roles as language learners. Beginning the project work with the pedagogic function of the ELP (working on

the Language Biography and the Dossier) provided easier access to reflective work than using the CEFR's self-assessment grid (and the checklists) right away. The teachers used simple questions to facilitate the pupils' reflection. (e.g., "How do you see your role as a language learner?", "What aspects of foreign language learning are easy/difficult for you?").

The teachers facilitated independent work by guiding their pupils to undertake syllabus-based learning tasks that were open enough to leave space for real choices, appropriate to their age, learning skills and the level of proficiency in the given target language (e.g. preparing a report/presentation on topics like "My family/home town/hobbies" and considering their views on such topics as traveling, environment, future expectations in life). Having options entailed personal choices about how to set the aims, draw up action plans, carry out and monitor the work and evaluate it in small groups. The plans specified the time frame for the work to be done: agreeing on the deadlines for consulting and returning the reports, and what to include in the report. The plans could also specify (minimum) requirements for acceptable work in terms of the report length and topics to be dealt with, also including a short reflection.

The principles, structure and pedagogy of the Finnish version of the ELP (FinELP) emerged gradually in the monthly seminars at the university, integrating the Council of Europe's principles and guidelines (2000) with the Finnish site-based syllabuses. The seminars and the joint planning created a spirit of collegial sharing and negotiated learning among the teachers. The interactive process also encouraged them to use similar work processes in their own classes. (Kohonen 2002a.)

In accordance with the reflective FL learning approach, the participants developed the notion of ELP-oriented language learning, referring to the negotiated teaching-learning process whereby the pupils gradually took increasing responsibility for their learning. To encourage more independent work, the teachers gave them

open-ended learning tasks associated with the textbook chapters. Negotiating the personal project aims, contents and processes with the teacher helped them take more responsibility for their learning. Having options entailed individual choices about how to set the aims and make action plans, and how to monitor and evaluate their own learning during the course of the work. (Kohonen 2002a, 84–91; Kohonen & Pajukanta 2003.)

The findings indicated that the pupils were in the middle of a major educational change in their foreign language learning, with their beliefs being divided between the old and new cultures in language teaching/learning. While traditional language teaching had an ethos of working mainly alone under teacher supervision and control, the emerging new culture of socially responsible language education assumed an emphasis on cooperative learning in small groups involving reflection and self- and peer-assessment. (Kohonen 2004; Kohonen & Pajukanta 2003.)

The project leaders also encouraged the teachers to record their observations, thoughts and insights in their personal diaries and collect their teaching materials in their teacher portfolios. Based on such personal material, the leaders invited teachers to submit open-ended professional development essays at the end of each school year, reflecting on their pedagogical experiences and findings during the past school year. The teachers also developed the notion of jointly planned *bridging tasks*, which involved small teaching projects in their classes. They discussed their experiences of these tasks in small groups at the subsequent seminar. In this way the findings from the classrooms fed into the discussions and conclusions at the seminar, to be brought back to the classrooms for further exploratory work. (Kohonen & Pajukanta 2003.)

**The Council of Europe’s Project ”From piloting to implementation” (2001–03).** The ELP was officially published and its implementation project was designed at the Coimbra symposium in Portugal (in June 2001). The large pan-European follow-up project

was then carried out in 45 member states. According to the project report (Schärer 2008), the ELP (1) contributed significantly to the dissemination of European goals, values, concepts and principles; (2) made a difference in educational practice, and (3) was an effective catalyst for change on the European, national and local levels. The curriculum reforms and learning materials in many national contexts were informed by the ELP research and development work. Its basic principles challenged traditional learning and teaching practices, implying the need for a major pedagogical change. In a number of national contexts the ELP reportedly functioned as an effective catalyst for such changes.

As part of the ELP implementation project, Finland carried out the **(3) ELP Mentor project** (2001–04) in Tampere, led by Viljo Kohonen. The project participants were teacher educators from four universities (Tampere, Joensuu, Jyväskylä and Helsinki), with three didactics lecturers from each department of teacher education. Each of the universities conducted their own ELP implementation projects in local schools, led by the teacher education lecturers. The projects involved regular planning seminars with the participating teachers at the universities.

The participants in the Finnish ELP Mentor project seminars in Tampere were thus all mentors in charge of leading their own three-year implementation projects, working with the school teachers. This local research and development work was supported at the joint seminars at the University of Tampere through lectures, duplicated research handouts and intensive planning and discussions in small groups. The groups provided a safe forum for the mentors to explore their ideas, discoveries and concerns together. The group findings and conclusions were elaborated further at the seminars, in an environment of shared responsibility. (Kohonen 2005.)

In the two long-term projects, the ELP emerged as a significant pedagogical resource for enhancing foreign language education. The interactive pedagogical process enabled teachers to get to know their



pupils better as individuals. Encountering them on a more personal basis in an open consultation was a rewarding experience for many teachers. However, guiding the work took a considerable amount of time in designing the guidelines for the work, negotiating the ground rules and deadlines, answering questions, and reading the reports thoughtfully for specific, encouraging feedback. The pupils found the teacher's comments and support very motivating for their continued learning efforts. (Kohonen & Korhonen 2007.)

New solutions evolved in the project seminars in Tampere, helping teachers develop ELP-oriented pedagogy in their own classrooms. The teachers were encouraged to see themselves as learners of their profession, collaborating with each other for common benefit. Attempts were also made to involve several teachers from the same school, including the head teachers (where possible), aiming at sustainable site-based engagement. The teachers found it useful to discuss the theoretical principles and practical ways of organising their pupils' work, and how to teach the essential concepts: socially responsible autonomy, reflection and self-assessment. When comparing their experiences and discoveries at subsequent seminars and sharing their findings and uncertainties, significant professional learning developed through mutual interaction and trust. Similarly, sharing the moments of insight and success in the classes strengthened the spirit of collegial professional growth. (Kohonen 2005; Kohonen & Korhonen 2007.)

By way of consolidating the ELP implementation in Finland, a further forum for disseminating the research-based information about the ELP pedagogy was also provided by the so-called *ViKiPeda seminars* (1999–2013, an acronym for “*Foreign Language Pedagogy*” in Finnish). The seminars were coordinated by Pauli Kaikkonen and Viljo Kohonen to support the national sharing and evaluation of experiences, and develop the work further. They were organised biannually at each of the seven departments of teacher education in the Finnish universities, moving from one university to the next

after two years (see also Kaikkonen, in this volume).<sup>3</sup> The seminars were also open to local language teachers at each location, taking place during the weekends. The local organisers undertook to edit a collection of the papers given at each seminar, which was published in the university's series of publications. From 2002 onwards, these reports were written either in English or German, making it also possible to disseminate the findings internationally.

To sum up briefly, the Finnish language teachers' ELP journey in these projects progressed through the following major steps: 1. Clarifying the teachers' educational orientation, their pedagogical beliefs and conceptions of language learning; 2. Clarifying the pupils' views and beliefs of themselves as language learners and language users; 3. Working towards a supportive environment of cooperative learning in language education; 4. Encouraging and teaching reflection on the individual and social learning processes; 5. Guiding the pupils to undertake a number of portfolio tasks and write reports on them, also reflecting on their developments as language learners and users; and 6. Guiding them to assess their language proficiency using the self-assessment lists in the target language, as far as possible. (Kohonen 2007; 2009; 2010; 2011.)

**(4) The OSKU ELP development project (2006–09).** The Finnish work on developing ELP pedagogy in compulsory language education as collegial collaboration was pursued further in the OSKU project, led by Raili Hildén at the University of Helsinki. The project group consisted of seven project locations that involved language classes both in the university teacher training schools and in local municipal schools. The local projects were led by the researchers at the departments of teacher education, with a total of some 30 teachers and

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<sup>3</sup> The ViKiPeda seminars were organised and led by the language teacher educators at the respective seven departments of teacher education, funded by the Ministry of Education. They were arranged at the different universities as follows: University of Jyväskylä 1999, University of Tampere 2001, University of Oulu 2003, University of Turku 2005, University of Helsinki 2007, University of Joensuu 2009, Åbo Akademi University in Vasa 2011, and again Jyväskylä 2013.

700 pupils. The teachers guided their pupils to learn life-skills through a participatory approach that involved them both experientially and emotionally. The project leaders attended joint seminars twice a year at the University of Helsinki to consider current theoretical issues and discuss the progress reports in the different locations. The local reports were also publicized on the project website at the University of Helsinki for the OSKU participants.

The findings emphasized the importance of collegial teacher collaboration aimed at enhancing socially responsible pupil autonomy in language education. Professional knowledge was seen as an emancipatory medium for reaching out on the zone of proximal development, being empowered by improved pedagogical action. As the teachers' confidence increased, they were able to give more responsibility to pupils, trusting that it was not necessary for them to see, hear and control everything. This supported their pupils' self-direction and responsibility for learning. The teachers found the following topics problematic: oral skills teaching, autonomy education, and assessment using the CEFR's Common Reference Level descriptors, as well as evaluating their pupils' cultural identities. (Hildén & Salo 2011, 236–40.)

**(5) The KISA project (2010–12), completing and publishing the FinELPS.** As an outcome of the long-term research and development work outlined above briefly, the Finnish versions of the ELPs for the comprehensive school were completed in the KISA project as a national resource for compulsory language education. The project was coordinated by the University of Tampere, in collaboration with a number of researchers and language teachers from the Universities of Eastern Finland (Joensuu campus), Helsinki, and Jyväskylä. The collaborative educational approach encouraged the pupils'

socially responsible autonomy and supported their plurilingual and pluricultural competence, learning skills and self-assessment.<sup>4</sup>

The work also involved the joint design of a large amount of pedagogical teaching materials, produced in line with the new National Core Curriculum for foreign languages (POPS 2016). The long-term Finnish ELP project was completed in 2014, after some editing work (by Viljo Kohonen) of the material that was produced by the KISA participants. As a result of the collaborative work by a large number of Finnish language educators, the national FinELP website was established under the auspice of the National Board of Education. All of the material is now freely available on the website <http://kielisalkku.edu.fi/>.

The Finnish versions of the ELP for compulsory education were registered by the Council of Europe in 2014 in compliance with the Council's *Principles and Guidelines* (2011, [www.coe.int/portfolio/](http://www.coe.int/portfolio/)). They are designed as a pedagogical resource for foreign language education in the comprehensive school in Finland (grades 1–3; 4–6; 7–9, pupils aged 7–15 years). However, the pedagogical ideas and practices are naturally applicable at any level of language education, and can also be modified for different contexts and needs (e.g., teaching Finnish as a host or a foreign language).

The three FinELP models are available on the website in two sets, in the two domestic languages plus English: Finnish-English and Swedish-English. The Self-assessment Lists (Checklists) are provided in English, Finnish, French, German, Russian, Spanish and Swedish.

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<sup>4</sup> The KISA project team consisted of a coordination group (Riitta Jaatinen, Pauli Kaikkonen and Viljo Kohonen); an advising group (Riikka Alanen, Raili Hildén, Riitta Jaatinen, Pauli Kaikkonen, Kati Kajander, Ritva Kantelinen, Viljo Kohonen and Pirkko Pollari) from the four participating universities; and an action group of language teachers from the four cities (Merja Auvinen, Tuija Dalmo, Anne-Marie Grahn-Saarinen, Mari Kalaja, Hannele Kara, Arja Kujansivu, Eila Kuokkanen, Kaija Kähkönen, Kaija Perho, Eeva Regan, Olli-Pekka Salo and Ursula Viita-Leskelä), each having extensive experience in using and developing the ELP in language education in compulsory Finnish education. The FinELP website was designed by Sisältötoimisto Kolome Company in Helsinki, in consultation with Anna-Kaisa Mustaparta, Counsellor of Education at the National Board of Education and the KISA Advising group.

The purpose of the seven parallel lists is to encourage users to develop their plurilingual and pluricultural competences in the languages that they study or wish to learn on their own, as proposed in the CEFR (2001) and in the ELP *Principles and Guidelines* (2011). In line with the reflective learning-to-learn approach, the Language Biography provides a great deal of reflective work for the language users to consider their intercultural learning experiences and observations. Further, the Dossier consists of two parts: a Learning Dossier (building up a personal learning history over years with samples of work); and a Reporting Dossier (choosing certain work samples to report individual progress).

The reflective work in the Language Biography, combined with the dual function of the Dossier, provides an interface between learning, teaching and assessment. The approach thus involves (formative) assessment of learning, enhancing learning through reflection and interaction, and (summative) assessment of learning, assessing communicative proficiency using the Common Reference Levels of the CEFR (2001; Little 2009). The models and pedagogical materials are downloadable from the above website for local work on the user's computer, to be printed out as needed.

In the FinELP projects discussed above, the teachers assumed an active role in developing collegial collaboration as an inherent element of professional growth. They found it helpful to discuss their emerging understandings and classroom work in collegial groups, using their teacher portfolios for reflecting on their experiences as language educators. They were thus developing their professionalism as collective knowledge creation, transforming the pedagogical knowledge-in-theory into their personal knowledge-in-action in the collegial process.

ELP-oriented language teaching and research cultivated an interesting observation: the developments of the teacher and pupil seem to proceed in a parallel process. As the teachers were able to integrate the principles of the CEFR and the ELP with their site-based

language syllabuses and design learning tasks to foster interactive classroom work, their feelings of professional competence were enhanced. Similarly, as the pupils gained increased understanding of their participatory roles in the groups, reflecting on their work and experiencing positive communicative progress, they were able to assume more responsibility. There was thus a cyclic interplay between teacher and pupil engagement: the teacher's professional confidence increased pupil motivation and effort, and the pupils' positive responses, in turn, fostered teacher commitment (the "virtuous cycle" noted in Kohonen 2002; 2009; 2010; 2011; Perclová 2006; Sisamakís 2006; Kara 2007; Hildén & Salo 2011).

The principles and reflective practices of ELP-oriented language education have also been introduced to pre-service teacher education in Finland. Reflective professionalism has thus been established as a central goal in pre-service teacher education. Riitta Jaatinen has conducted seminal research and development work on reflective pre-service teacher education, resulting in what she calls the student teacher's narrative portfolio. This long-term work is discussed in her contribution to several volumes (Jaatinen 2001; 2007; 2009; 2013; 2015).

**A summary of ELP-related work within the Council of Europe.**

In 2010, the European Validation Committee provided a summary of the added value of the ELP for teachers (Little et al. 2011, 15–16):

1. The ELP encourages pupils to take responsibility, accepting that they share responsibility for the success of the course.
2. The ELP helps the teacher to cope with heterogeneous groups, helping pupils understand their individuality and achieve personal goals in the group.
3. The ELP promotes communication within the class by providing a common pedagogical language. The CEFR's approach to describing language competence in terms that pupils can understand, and the reflective learning approach, facilitates the dialogue about learning among the pupils themselves and with the teacher.

4. The ELP helps make progress visible and increases satisfaction. As the descriptors are relatively easy for pupils to understand, they can see what they are aiming at and when they have achieved it. When pupils can see that they are making progress, they are more likely to be satisfied.
5. The ELP helps make achievement visible and comprehensible for employers, for other schools, etc. If pupils need to show their current levels of proficiency in one or more languages, the ELP does this in a clear and comprehensible way.
6. The ELP puts learning into a wider European context. For some pupils, the European recognition of the ELP and the common reference level system is important and attractive.
7. The ELP facilitates mobility: the CEFR provides a transparent and coherent system for describing communicative proficiency across Europe.

## Perspectives on language teaching and teacher professionalism as experiential language education

### Aspects of site-based understanding in foreign language teaching

The complexity of what goes on in classrooms has been discussed by Dick Allwright (2006) in terms of the practitioner-based understanding of classroom life. He regards the teacher's local understanding as a prerequisite for developing educational practices. He uses the notion of *exploratory practice* (EP) as the key concept for what he considers a new research paradigm for language teaching. He argues that practitioners are the most suitable people to conduct productive classroom-based research because of their site-based pedagogical knowledge. The orientation emphasizes the importance

of the teacher's professional understanding in the classroom context. Allwright also suggests that the pupils need to be included as practitioners alongside the teachers, seeking shared understandings together. (Allwright 2006, 15–16.)

Simon Gieve and Inés K. Miller also discuss professional learning as a social phenomenon, seeing language classrooms as *communities of practice* with complex social relationships. Classroom discourse is situated: the participants talk to each other in the context of a shared history of interaction involving multiple and complex identities. As members of the communities of practice, the teachers are not just teachers and the pupils not just pupils, in terms of their social roles in school. They are also authentic people who speak to each other while living their personal lives in the classroom community. There is thus an intricate interplay between the participants' personal and institutional lives in the classrooms. (Gieve & Miller 2006, 18–26; Kohonen 2009; 2010.)

Essential in the university-school partnership is that it is based on equal status, trust and respect. Julian Edge (2002) points out that the teacher's self-development needs other people: colleagues and pupils. Cooperation helps the participants understand their experiences better and thus enriches mutual interaction and understanding. In facilitating these growth processes, teacher educators create an environment of partnership with the participating teachers and schools. (Jaatinen 2001; 2007; 2009; 2015; Kaikkonen 2001; 2002, and in this volume; Kohonen 2009; 2010; 2012; 2015; Schärer 2012.)

## Towards a pedagogy for autonomy in language education

To guide their pupils' progress towards socially responsible autonomy, teachers assume a firm professional stance in setting the tone of the work, negotiating the processes and expecting that the pupils observe the deadlines for completing the work agreed together. Facilitating the pupil's autonomy is thus also a question of enhancing the teacher's



professional autonomy, through collegial collaboration and reflection on pedagogical action.

Underscoring this interaction, Jiménez, Lamb and Vieira (2007, 1) propose an illuminating definition of autonomy that involves learner and teacher autonomy, defining both as the “competence to develop as a self-determined, socially responsible and critically aware participant in (and beyond) educational environments, within a vision of education as (inter)personal empowerment and social transformation.” They emphasize the pedagogy for autonomy as far more than a strict teaching method to be followed mechanically. They argue that autonomy requires a critical stance towards the constraints of teacher and learner empowerment in the given context. (Kohonen 2007; 2009; 2010; 2012; Kohonen & Korhonen 2007; Little et al. 2007; Hildén & Salo 2011.)

The educational change inherent in the pedagogy for autonomy entails that teachers develop a new kind of professional identity, seeing themselves as language educators, as facilitators of their pupils’ learning and as professional social actors, who work in collaboration with other educators and stakeholders of the school. Assuming such a goal for professional identity is not just an intellectual matter of factual information; it also means undertaking the necessary emotional work inherent in any major changes in life. Big changes may trigger a broad spectrum of feelings, posing a threat to the teacher’s professional self-understanding and educational beliefs. The transitional stage involves moving beyond the current zone of comfort in pedagogy, which may also involve feelings of discomfort, anxiety and phoney behaviour. However, teachers relate differently to such tensions. What is experienced as an anxiety situation by some teachers may be seen as an energising challenge by others. (Kalaja & Barcelos 2003; Kohonen 2009; 2011; 2012; 2015; Kohonen & Korhonen 2007.)

## A note on the contradicting values in current schooling policies

However, the prospect of enhancing professional growth also requires taking a critical stance to certain trends in current societies and schooling policies (the prevailing *Zeitgeist*), which seem to be contradictory from an educational point of view. As I see it, the principles and practices of the neo-liberal market economy have been acquired from business life and cultivated into education far too easily without critical consideration. The now fashionable notion is competition, which is claimed to improve results of any kind. Schools are thus forced to compete for public image, pupils (“customers”) and resources. Competition is intensified through various controlling mechanisms (such as ranking of schools and teachers based on pupils’ test scores). However, if some practices seem to work in business life, it does not automatically follow that they are also valid and viable in education. Education is inherently an ethical question of nurturing human growth in all pupils by working together, aiming at an educative community (Taylor 1991; Jaatinen 2001; 2007; 2009; 2015; Lehtovaara 2001; Kohonen 2010; 2012; 2015).

While quality in education is obviously vital for teachers (and their pupils), the competitive policies bypass the specific nature of education as fostering the growth of human potential. Terry Lamb (2008) discusses of the discrepancies between educational research and schooling policies and practices in his study, based on expert reports from eight European countries. He notes that the national policies advocating democratic citizenship education, education for life and life-long learning are generally in harmony with the goals of learner autonomy. These goals have by now been integrated into the language curricula and textbooks in many countries.

Lamb’s study also revealed a number of obstacles in implementing such educative policies: top-down management of the social and educational changes; marketisation of education involving

competition between schools; test-driven instruction aimed at preparing pupils for high-stakes end-of-school examinations; traditional transmission models in teacher training; lack of adequate opportunities and support for in-service teacher education; and the general working cultures, conditions and resources prevailing in schools. (Lamb 2008, 49–53). Such controlling mechanisms clearly pose the risk that education becomes test-driven, rather than being aimed at developing the whole personality of the pupil in terms of socially responsible autonomy in a lifelong learning perspective.

Nancy Schniedewind (2012) provides an illuminating discussion of the neo-liberal policies in public education in the United States, calling the contradictory situation “the ambush of public education”. The programs are advocated by market-based federal policies, consisting of test-driven, top-down standards and accountability for all U.S. schools. The policies entail privatization of public education, whereby failing schools can be taken over by private corporations as the so-called charter schools; and private schools can also be funded through various voucher programmes. The control of public resources is thus being transferred to the private sector. This may promote financial profit over equitable social goals. In this educational marketplace, she points out, schooling as a public good is under a surprise attack (an “ambush”). (Schniedewind 2012, 4–8.)

Schniedewind argues further that the quality of schools is measured through high-stakes standardized tests focusing on pupils’ progress in terms of the AYP (Annual Yearly Progress) scores. The test scores are used at the classroom, school and district levels to assess accountability, rewarding or punishing teachers accordingly through merit pay or even firing them. Thus, educators are blamed when schools fail, disregarding attention to out-of-school factors, such as the child’s language problems, or the parents’ poverty, unemployment, or inadequate health care.

Moreover, the emphasis on the high-stakes multiple-choice testing tends to narrow the curriculum down to just those subjects

that are tested. Focusing on low-level thinking also leaves aside such important goals as critical thinking, problem-solving and social and emotional skills. Teachers are thus under pressure to teach to the tests, using pedagogies that may contradict their educational values. Schniedewind concludes that such measures do not achieve success for a wide range of diverse pupils. What does work are the following factors: adequate resources, professional development for teachers, smaller class sizes, and collaboration between schools and communities. (Schniedewind 2012, 10–22; Kohonen 2015.)

## Conclusion

### Focus on the teachers

To be able to cope with the contradicting tensions in the goals, policies and resources of education, and in parental expectations for their children, teachers need educational wisdom, courage and endurance. In my understanding, then, to focus on the pupils, it is necessary to focus on teacher education and the teachers' position and working conditions in schools in the first place. Language teachers have an important role in the type of journey their pupils embark on in their language education, and how they experience foreign language learning in their classes.

To work towards a supportive educational journey for all participants, teachers need to engage in professional discourse with each other. They also need to take the time to reflect and engage in collegial discussions in order to outline the roadmap for their site-based pedagogical action. Working together, teachers establish a community-based culture of teaching and experiential learning in their schools, developing their capacity to frame and reframe educational issues. Through their collective stance as language educators, and their educational discourse, they build the road of

language teaching/learning as they travel along it together with their pupils.

To help their pupils engage themselves in their journey in a life-long learning perspective, teachers need to encourage their pupils to see themselves as unique persons with their own voices and abilities for true agency, and as language users and intercultural actors. The perspectives and findings discussed in this contribution indicate that the ELP can become a valuable resource in making the pedagogical journey possible, manageable and rewarding to all participants.

To conclude the discussion, I see autonomy as part of a more general notion of values education in school. Being an autonomous person entails the respect for one's dignity as a moral actor, valuing others and relating to them with dignity. An essence in human dignity is the notion of moral agency: being morally aware of one's conduct and its consequences to others in the given context, assuming a responsible position.

I wish to argue further that commitment to educational values is a key component in the teacher's professional ethics and authenticity as an educator. Education is aimed at nurturing pupils' growth in a participatory approach that creates an educative classroom community. Fostering pupils' human growth is thus an engagement that guides the teachers' professional identity as educators.

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# Everyday multidisciplinary

## Confessions of a mother tongue teacher educator

*Pirjo Vaittinen*

### Prologue

It is summer 2003. I am attending a conference organised by the International Association for the Improvement of Mother Tongue Education<sup>1</sup> in Lisbon, Portugal. The theme of the conference is The Role of Literature in the Mother Tongue Curriculum, the sessions and presentations, however, cover all types of topics. The curriculum is discussed in relation to education policy and globalisation; teacher identity and teacher education are discussed. (Kaarinen et al. 2003, 53–54.)

In the first workshop, the speaker reveals to us that she had immediately felt at home in Lisbon after having seen the Star of David, the cross and the crescent side by side at an underground

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<sup>1</sup> Since 2014 International Association for Research in L1 Education (ARLE).

station. Reading a text is exemplified by the Jewish Talmud, a book that contains texts written at different times. Reading is not linear, the reader may move from one text to later commentary on it, and the reader is always responsible for the interpretation.

The speaker is Professor Ilana Elkad-Lehman from the College of Teacher Education in Israel. The aim of the session is teaching literature via intertextuality, based on Julia Kristeva's theory. The term intertextuality is used to synthesize Saussure's linguist semiotics with Bakhtin's dialogism (Kristeva 1980, orig. 1969). Intertextuality is later seen as a universal phenomenon that elucidates communicative interconnections between one text and another text, a text and context, and different genres or modes. Intertextuality in a broader sense is used in film, theatre and media studies. I am familiar with Kristeva's writings in structuralist linguistics, psychoanalysis, semiotics, and philosophical feminism.

The central focus of the workshop is on understanding the activity and framing of reading as it relates to the Reader Response Theory. The paradigm shift in academic literature studies from a text-centred to reader-centred approach was the basis of my doctoral dissertation (Vaittinen 1988; see also Vaittinen 2011).

Constructivism as a paradigm for teaching and learning, which places the learner in the spotlight, is often mentioned in Ilana Elkad-Lehman's introduction. She wishes, however, to legitimise associative reading, the fostering of thinking and metacognition as proposed by Vygotsky. Vygotsky is well known in all educational studies in Finland: a psychologist who developed interactive learning and instruction. I have also become familiar with Vygotsky's early work on the origin and psychology of art, as well as his theories of culture and narration in my academic studies in literature. (Vygotsky 1978; 1962.) I share Ilana Elkad-Lehman's emphasis on developing thinking and metalanguage in teaching and learning.

The reading material in the workshop comprises a storybook, a book to be read starting from the back cover and the text to be read from right to left, a book in Hebrew. The pictures and the layout of the book introduce a fairy tale or a strongly stylized

story. There is a princess on the cover and, at the end, a spider and a web look like somewhat familiar ingredients. Another story seems to be told in cartoons with speech bubbles.

The book is circulated among the workshop participants. We are asked to discuss with the person(s) next to us what familiar elements there are, what other stories this book reminds us of. In the conversation, European fairy tales by the Brothers Grimm are brought up; princesses are named, e.g. Sleeping Beauty, Snow White, Rapunzel; the animal helping a girl to get a ball dress is familiar from Cinderella, the glowing garment in the end is said to bring happiness. The work of the spider signals an artist and art. There appear unexpected elements such as the princess's determination and the spider, Sigi's, boutique! Intertextual reading can be initiated in many ways: reading a fairy tale, reading as a feminist, reading a myth, reading a story of art and an artist, or as part of more extensive cultural reading.

We can see parts of the dialogue in English also, but the book is easy to read without that. Working with language, dialogue and ethics is brought up by a Chinese participant from Hong Kong, and the normative nature of language is mentioned. A Canadian participant reminds us of imagination: through literature, you can enter a world you cannot step into otherwise. Reading literature has many roles or functions, and literature is characterized by ambiguity.<sup>2</sup>

I felt at home at that international conference because the teacher educator colleague who led the workshop introduced approaches to teaching literature, and more extensively, to teaching of mother tongue with which I was already familiar. She also “walked the way she talked”, i.e. acted according to her own doctrine. There were authentic questions, dialogue and interaction among the workshop participants. (See Elkad-Lehman 2005.)

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<sup>2</sup> The book is “Sigi and the Thread Shop” (in Hebrew) by Nurith Zarchi, illustrated by Hildi Havkin (1995).



## Introduction

The story above describes my vision of mother tongue didactics and subject-specific didactics. In this chapter, my views will be presented through a narrative of a teacher educator's professional identity, which, according to Ropo (2019), is personal, social and cultural. My purpose is to explore my teaching and activities in subject teacher education at the University of Tampere with focus on the significance of reflection and research in developing autonomous teachers. (Jaatinen 2015.) The cultural context in the chapter includes the history and tradition of mother tongue teaching to which my choices and reasoning are related. I regard subject didactics as a perspective of teachership, of being a teacher.

Subject didactics comprises the knowledge and theories of the disciplines that are the basis for the subject to be taught, theories and models of education and philosophy, as well as critically evaluated historical knowledge of the traditions of the subject concerned. Subject didactics at the university is also *the knowledge domain which contains developing skills*. While participating in mother tongue subject didactic studies, for example, students practice skills which enable them to take part in professional or other encounters that require expertise in mother tongue and literature teaching. The aim is to practice the skills for themselves, not merely as a tool for external goals. The goal of education is then included in the practice, and it does not come from the outside. (Tomperi 2017.)

Studying the pedagogical practices of mother tongue and literature in teacher education also promotes living in the situation at hand, not merely preparing for the future. The goal of subject didactics is always emancipatory, because its ethical aim is to strive for the good of both the learner and the community (Grünthal 2007). Subject didactic studies also comprise explaining and exploring meanings and application of the subject in society (Rättyä et al. 2018; originally Ongstad 2006; see also Krogh et al. 2016).

## History of mother tongue didactics in Finland

The history of mother tongue teaching in Finland can be traced back to the early use of the Finnish language from the 16<sup>th</sup> century when Finland was under the Swedish rule, or to the 19<sup>th</sup> century when Finnish became a school subject in 1843 and the language of instruction in 1856 in the Grand Duchy of Finland (Karasma 2014). The history of school curricula from the 19<sup>th</sup> century to the 1950s was written later (Kauppinen 1982). The Mother Tongue Teachers' Union was founded in Finland in 1948; it has published an article and a book on its history (see Mäenpää 1974; Kaipainen et al. 1998).

The history of Finnish *mother tongue didactics*, however, dates back to the 1970s. It was the period of a significant school and teacher education reform in Finland: the school system was transformed into one common basic education system, and the subject teacher education in the teacher training schools was incorporated in the universities' faculties of education.

The first academic textbook in mother tongue didactics dates back to 1986. It contains a brief history and a disposition following the traditional sections of teaching. (Kauppinen 1986.) An academic textbook on mother tongue didactics in Swedish in Finland, i.e. *Svenska med sting! Didaktisk handledning med tyngdpunkt på modersmål, litteratur och drama* (Østern 2001) also exists. It is based on modern conceptions and theories, such as the 'holistic individual', 'body, thought and emotions together', 'learning in the cultural context', 'learning as an active process', and 'dialogue in the expanded didactic space'. Anna-Lena Østern's expertise is teaching arts, about arts, through arts, in the process of arts, using drama especially (Østern 2001). Her book also serves my interest in theatre and drama education.

Heilä-Ylikallio and Østern's article on the history of mother tongue didactics (Finnish and Swedish) was published in 2012. It presents an overview of academic research in mother tongue didactics

and introduces mother tongue professionals at the university level. In the development of teaching subject didactics, several changes can be recognised: shifting from canonical thinking to the mother tongue as a cultural subject, from formalism to functionalism, from cognitive to sociocultural, from a monocultural to a multicultural perspective, and from the text reader orientation to a multimodal orientation in literary teaching. (Heilä-Ylikallio & Østern 2012.) In another article by Rättyä et al. (2017), Finnish research in mother tongue and literature in the 21st century is thoroughly surveyed. In addition, various aspects of the history of mother tongue as a school subject and some other themes have been dealt with in several articles and academic dissertations.

## Contributions of the University of Tampere

The first lecturer in mother tongue didactics in the Department of Teacher Education at the University of Tampere was appointed in 1974. Anna-Liisa Mäenpää had been a lecturer at the teacher training school in Tampere since its establishment in 1962, i.e. during the period of pioneering when novel ideas were developed for the curriculum of the new comprehensive school. She was active in the Mother Tongue Teachers' Union and one of the authors of the book *Kirjallisuuskritiikki ja opetus* (Literary criticism and teaching), a sign of striving for scientification of the mother tongue didactics (Rainio 1971; Vaittinen 2011). The same trend is continued with *Tutkimus ja opetus: strukturalismia* (Research and teaching: Structuralism) which suggests common starting points to the disciplines associated with the mother tongue teacher studies at universities (Mäenpää et al. 1976; Vaittinen 2011).

Starting a new academic branch of knowledge also needs history. Anna-Liisa Mäenpää wrote an article on contemporary changes in the field and a comparison of mother tongue teaching in different

countries (Mäenpää 1974). Later, she completed a survey on the studies in the universities in Finland where she pointed out that the structure of mother tongue teacher education was fragmented. Her stand was that it should be possible to base teacher education on the national school curriculum in the faculties of humanities at universities. In the theory of mother tongue subject didactics, linguistic, pedagogical, psychological and sociological views should be combined with the general philosophy of education and the advanced studies should provide space for an interdisciplinary project to find research themes for subject didactics. (Mäenpää 1978.) She refers to Jerome Bruner who, in his early theories, emphasised that children learn language in order to communicate; meaningful language is acquired in the context of meaningful parent-infant interaction; learning scaffolded or supported by a child's language acquisition support system – following Vygotsky's socio-cultural development theory (Smith 2002).

Kyllikki Keravuori was appointed the lecturer in mother tongue didactics at the University of Tampere in 1989. She introduced the *Language through Curriculum* concept, classroom dialogue in teaching and using small groups in learning. The approach and conceptions were based on English research and development material. (Keravuori 1977; 1978.) Keravuori's doctoral dissertation *Ymmärrätkö tarkoitukses: tutkimus diskurssirooleista ja funktioista* (Do I get your point: a study of discourse roles and functions) was published in 1988. Keravuori began to apply the theory and research method of *discourse analysis*. In her study, she investigated roles in classroom discourse; the initiator was the teacher, while the pupil remained in the respondent's role. She explored classroom discourse functions, i.e. elicitation, directive and informative functions and the structures of questioning, checking and inquiring. While working in small groups, the roles were different. (Keravuori 1988.)

My predecessors, the first two university lecturers in mother tongue didactics at the University of Tampere, were active mother

tongue teachers and mother tongue teacher educators from the university teacher training school. They carried with them a great deal of silent knowledge of the school and of their profession. They were among the pioneers in the school reform (Keravuori 2004). And they actively participated in developing the curriculum through their union. They seemed to think that by being normative and mirroring the values and ideologies of society, the national curriculum will render precious pedagogical tools to teachers. Their expertise covered academic disciplines, literature, linguistics and speech communication, and they also had theoretical and methodological interests and activities that guided them when they were creating the basis for the new branch of knowledge, i.e. mother tongue didactics. Anna-Liisa Mäenpää conveyed new approaches in the humanities to teachers and teacher education. Kyllikki Keravuori was a pioneer in the field of classroom discussion research, which has become more and more prevalent in many Finnish universities, both in linguistics and in education.

## I did it my way

In my story, I can now see the significant power of Little Red Riding Hood, school plays with my sister and my neighbour's children, the city library where my mother took me and the poetry analysis that was taught at school. My family were evacuees from Karelia after the wars. Therefore, I had two languages and cultures.

I went to elementary school in the parallel school system and then grammar school. The local upper secondary school was a private school. Being in doubt what to do, my father ended up educating his daughter there. The Finnish language teacher lent me Pablo Neruda's poetry as a topic for composing an essay. I began my university studies in Finnish and Finno-Ugric languages, but progressed quicker in comparative literature. I completed my advanced studies in both. During summer, I studied education, psychology and journalism.

I learned the basics in educational sciences from Professor Erkki Lahdes. His *mastery learning* offered a meaningful method. The 1970s was time for completing the basic education reform in Finland; one of the textbooks was the Comprehensive School Committee's report from the year 1970. After my MA degree, I worked in 1974–1979 as a researcher and planner of the university education reform.

The employer was the Ministry of Education. While working with the best experts in the field, I continued my studies in education and learnt many theories and practices, especially in university pedagogy.

Later in the 1980s, I participated in a university teachers' qualification course. The theory offered was Yrjö Engeström's *theory of action* and *developmental work research* (Engeström 1987). I thought that the idea of the theory was also applicable to academic basic courses in literature. Later, I recognised *the complete learning cycle* in the guide book of the university teacher training school. Another impressive theory in university pedagogy was *cognitive psychology* as a theory of learning. In 1980, I began the *subject teacher's pedagogical studies*. I could only study in the autumn term, because I was offered an opportunity to apply in practice what I had learnt, i.e. project work in the Cultural Activity course. Then I received a scholarship for doctoral studies in the University of Uppsala. I was also a member in an early doctoral school in theatre and film research, funded by the Academy of Finland.

I completed my doctoral dissertation in literature while working as an associate professor of literature at the University of Oulu. The theoretical framework of my research was based on German reception aesthetics, phenomenological and hermeneutical philosophy. I also studied American Reader-Response research and empirical reading research in sociology and pedagogy. My doctoral thesis on comparative literature was accepted in 1988 at the University of Turku. (Vaittinen 1988; see also Vaittinen 2011). Later, I also applied the same theoretical framework to theatre research – and later to educational research. At the University of Turku, as an academic

teacher of the theatre research, I completed some research projects in contemporary theatre (Vaittinen 1992; Berg et al. 1994).

In 1994, I moved to the USA with my family to work at Indiana University for two years as a professor of Finnish language and Finnish and Finno-Ugric culture. Teaching culture there was very 'school-like'; the semester was divided into periods with defined and measurable objectives. In addition to evaluation, we had to give each student personal feedback. Discussing the principles and practices of pedagogy with the teachers of 'exotic' languages at the university was significant and fruitful.

## Synthesis and reflection

In 1996, I continued the subject teacher's pedagogical studies in Finland. I gained fresh knowledge and insight in the studies. The lecturer in mother tongue didactics, Vuokko Kaartinen at the University of Turku, introduced in her dissertation the reading process as it relates to the concept of 'active reader', following the tradition of cognitive psychology. I learnt that teaching involves immediate feedback to learners at different phases of their reading process, in accordance with socio-constructivism, and that the action research used to develop the mother tongue student teachers could be based on portfolios, a type of authentic evaluation applied to mother tongue teacher training. (Kaartinen 1996.)

My experiences as a student teacher, as well as my observations of the experiences of peer learners, helped me build a vision of the action that is based on reflection, meta-level thinking and discussion, both at school and in teacher education. Accordingly, active reading is a model for mother tongue and literary teachers' scope of actions. It can be applied to all learning skill areas as a strategy and process. In addition to process reading, the previously invented process writing becomes understandable; it is suitable for speaking and listening,

and, furthermore, processing is a tool for language use awareness. All of the different content areas can be structured into processes for teaching and learning. Strategic teaching means bringing the meta-level into the learning process, reflecting and commenting on learning while learning the content.

During my supervised teaching practice at the teacher training school in Turku, I also had an opportunity to teach in a local school for two weeks. In 1997–1998, I worked with two appreciated upper secondary school lecturers who guided me in planning courses and lessons, using textbooks and other materials, and assessing matriculation examinations. Then I felt ready to work as a mother tongue teacher educator at the University of Tampere. I considered subject teaching to be a liaison; the academic expertise of the disciplines forms the basis for the school subject and the subject didactics provides a viewpoint integrated in that expertise.

## Dialogue á la Tampere

At the University of Tampere, I was fascinated by the theme of *dialogue* in the Student Guide of the subject teacher education in the Faculty of Education. According to it, education is not possible without dialogue, because without dialogue an educator cannot know what a person to be educated needs. Dialogue is therefore both the goal and the means of education. The criticality raised by dialogue is constructive. In dialogical interaction, people are willing to listen to and understand each other, and if necessary, change their views. Dialogic skills do not emerge automatically, but we can grow into dialogue by practicing openness within our relations to the world. (Lehtovaara & Jaatinen 1994; 1996.)

Dialogue in education is associated with philosopher Martin Buber's *I–you* relationship, a person meeting another person as a unique human being (Buber 1993, orig. 1923). The dialogue in



education can also be seen through the philosophy of Mihail Bakhtin<sup>3</sup>, first developed in connection to the dialogue in Dostoyevsky's poetry. Bakhtin is known to me as a literature scholar! (Bakhtin 1981; Bahtin 1991; 1979.) In Finland, dialogue and phenomenology are often associated with the name of the psychologist and philosopher Lauri Rauhala (1978; 1983). A common denominator with my aesthetics studies in Turku, is phenomenological philosophy.

At the beginning of the 21<sup>st</sup> century, the student portfolio was introduced in subject didactic courses at the University of Tampere as an option for course completion. Reflection in portfolio work (Kaartinen 1996) is related to the idea of dialogue in teacher education. Although the formal task is to collect a sample portfolio to be presented at the end of the spring term, more important is continuing reflective work. In a narrow sense, the portfolio consists of the year's best pedagogical studies, the most significant learning experiences documented, commented and assessed, and it may also contain items from other studies, hobbies, family and friends. The framework or composition can be either a professional profile, teaching philosophy or theory of usage, strengths as a teacher, areas of development, or goals for further development; or the 'Me as a Teacher' option, which is personal, autobiographical, beginning from childhood, based on a learning diary, and extending to the future.

Traditionally, the portfolio is compiled in writing. This is because it forces student teachers to stop and shape their ideas, and because increasing the level of abstraction in writing is important for evaluating their work. Also, other types of evaluation can be used, a SWOT analysis for example. (See Virta et al. 2001.) One form of reflection in teacher education is working with metaphors (Kaartinen 2013). A metaphor for being or becoming a teacher can be a journey, but I have also seen a tuft of wool yarn and a dance as part of portfolio presentations. Portfolio discussions are student

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<sup>3</sup> In English-speaking countries the name of the Russian scholar is spelled Bakhtin. In Finnish it is spelled Bahtin.

teachers' proud presentations of their own know-how; they are the best experts in their development, and they are the agents in their lives! I have analysed the material my student teachers have produced in their portfolios to demonstrate their growth during the year of their pedagogical studies in national and international conferences (Vaittinen 2005; 2007a, b).

Research on teachership is a common denominator for us in the subject teacher education at the University of Tampere. A dissertation on the autobiographical reflective approach to foreign language learning and teaching was completed in 2003 (Jaatinen 2003; 2007). In the 2010s, two doctoral theses on the professional growth of mathematics student teachers were completed (Portaankorva-Koivisto 2010; Yrjänäinen 2011). One of the dissertations focused on the use of concepts and meta-language (Silfverberg 1999). Tero Autio's doctoral dissertation (Autio 2002) introduced his interest in curriculum studies, which is also related to subject didactics.

At the University of Tampere, I have eagerly participated in the courses for university teachers pertaining to university pedagogy, the use of computer-based technology as well as the problem-based learning (PBL) approach. PBL was first applied in the faculty of medicine and in vocational studies, and it was accepted as the basis for the curriculum in primary teacher education and early childhood education. In subject teacher education, it could be used more flexibly in collaborative working. It would serve the ideas of integration and multidisciplinary within the subject didactics of mother tongue and literature, for example, or in forming study units combining a subject, or a section of a subject, and pedagogical knowledge.

## From integration to research

In my youth, the school subject of ‘mother tongue and literature’ was called ‘Finnish’. The term ‘literature’ was included in the title in 1999, as an acceptance of the status quo. The integration of the school subject ‘mother tongue’ began in the 1970s; the term ‘linguistic knowledge’ connected the skills of reading and writing, speaking and listening. (Kaipainen 1998, orig. Ruusuvoori.) In the 1990s, development continued from this separation to ‘textual skills’ and ‘multiliteracy’. The concept of ‘text’ is broad, i.e. texts are spoken and written, fiction and fact, verbal, pictorial, audio and graphic as well as various combinations of these.

At the moment a group of researchers at the University of Tampere are investigating the concept of verbalising or the ‘*linguaging*’ of math problems and learning grammar concepts. (Joutsenlahti & Kulju 2010; Rättyä 2013.) I adopted the same approach with eighth-graders. I was then supervising student teachers at the university teacher training school. (Rättyä & Vaittinen 2015.) In the background, I see the idea of talking about language with the little ones (cf. Pynnönen 1996; 1998.) The approach is also suitable for working with literary reading. (cf. Oja & Vaittinen 2013.)

During the years of my career as a teacher educator, I have constructed my instruction according to the themes based on the latest theories, national curricula and material that the learning environment offers, i.e. new books, films and theatre, new research in language and language learning, literature and reading, writing and oral skills. Every year, I have had new, small-scale projects to apply different ways of teaching and learning in up-to-date situations. I feel that the instruction of subject didactics should be organized as projects that include teaching and guidance, teacher training, student teachers’ own research, a few of the ‘subject disciplines’ and co-operation with the world outside the university.

I had used *theatre discussions* as a method for performance analysis in theatre research earlier and learned about literature circles through the reading research. Teaching and study conveyed through technology was also constantly present in my work. I decided to enter into developing the reading experience by investigating the reading of young student experts, i.e. the online discussion by the members of the assessment group of the Young Aleksis Prize, organized by the Mother Tongue Teachers' Union. (Vaittinen 2008a, b, c.)

In 2009, I collected material videotaped from small group discussions of 7<sup>th</sup> grade pupils at the teacher training school. The topic of discussion was reading books of the pupils' own choice. Teaching was based on the textbook, one author of which was the teacher of the pupils, lecturer Kaarina Ahonen. In the following year, literature discussions with the same class were organized in small circles in the library and they were recorded. For the other half of the class, discussions were arranged online in computer labs in a discussion forum opened in the Moodle environment. The pupils read the French writer Michel Tournier's juvenile book *Friday and Robinson* (1977, orig. *Vendredi ou la Vie sauvage*; in Finnish *Robinson ja Perjantai* 1982). Assignments on the book were mainly in the form of questions for reading and writing at home. The pupils took notes and the goal-oriented discussion with a question or topic of discussion was then videotaped or saved digitally. For the final classroom discussion, the pupils read (at least) some chapters of the original *Robinson Crusoe* by Daniel Defoe.

The integrative development of teaching and the research project were also introduced to the student teachers who had their practical training at the school, in the guidance of both the supervising lecturer at school and the university lecturer in mother tongue didactics. Student teachers conducted some of the project-related teaching and participated in the designing and implementation of the research project.

Later, the student teachers formulated a series of research themes for their short research essays. They used the data gathered together and worked in pairs or in groups of three. They were mainly interested in small group communication, and I introduced them to a Canadian-French researcher's study on various *turns of speech in literature discussions*. (Hébert 2008; 2003; Vaittinen 2011.) It was used for the analysis of both the oral discussions and the discussions held by means of technology. Students in one group used a conversation analysis known to them from their academic studies of the Finnish language.

The results indicated that working within a theme and project provides the pupils with opportunities to use their existing skills and work in small group interaction which is motivating. When pupils choose a suitable level for their tasks, they share responsibilities with each other and with the teacher(s). Project work builds bridges reaching out from school to society.

In our developmental teaching project, the teacher(s) noticed that topics relating to the young pupils' lives and their authentic questions served the assignments well. There were several branches in the oral discussions and the participants using the computers were very attentive and thoughtful. The best parts of the discussions, the topic of 'a good life', for example, were deep and philosophical. (Ahonen & Vaittinen 2011; 2012a, b; Vaittinen 2012.)

## Arts education in a broader frame

In arts education, it is essential to share experiences of art in language, either as a verbal expression, narrative, conversation, or by writing a comment. During the academic year of 2009–2010, the Sara Hildén Academy<sup>4</sup> in Tampere exhibited and worked on visual art related to

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<sup>4</sup> 'Basic education in the arts' is art education provided by the Sara Hildén Academy primarily for children and young people on an extracurricular basis, as out-of-school activities.

the Finnish national epic, *Kalevala*. In the autumn of 2010, a group of 15-year-old ninth-grade pupils went to see a selection of imaginary characters in *Kalevala*, all of which were made by artists more or less their own age. The imaginary characters were studied in detail, and the pupils made preparations to write stories about them. The stories were read aloud in a meeting with the young artists who, in turn, had the opportunity to explain how they had worked based on their interpretations of the *Kalevala* stories and portrayed mythical figures. The pupils also later wrote analyses on the works of art.

According to the Finnish national curriculum, ninth-grade pupils must read the poetry of *Kalevala*. In our class, each pupil read a series of poems about the person or events he or she had been acquainted with via the new artistic interpretations of the young artists. The pupils also learned about other modern interpretations: the performances of *Fire Theater Flamma*, the comics of Kristian Huitula and Gene Kurkijärvi, and Johanna Sinisalo's novel *Sankarit* (Heroes).

The last phase consisted of small group meetings of the young artists from the Sara Hildén Academy and the pupils from the teacher training school. The topic for discussion was 'Kalevala Imagery: before and now'. The material consisted of the classics and the new interpretations of the young artists, both known by everyone.

The project showed that today's young people are skilled at working multimodally and handling texts and images in interaction with each other. School is a place where it is also possible to hold a mirror composed in art in front of young people, who are struggling with their identity issues, and give them an opportunity to find out 'alternative perspectives' and 'other worlds' – as well as to perpetuate cultural heritage.

The school creates a multi-voiced and shared learning culture in which ideas and knowledge are shared with others, division of labour is negotiated, roles are changeable and opportunities are given to observe and reflect on group activities. The school is a meeting place where constructing meanings in collaboration is possible. Art is

another mode of knowledge; through art and artistic activity various relationships are created between human beings as well as between human beings and the world. (Bruner 1986.)

## Epilogue

Research-based teacher education has existed in Finland for 40 years. In subject teacher education at the University of Tampere, the development of teachers as researchers has been adopted into the curriculum to guide student teachers to become reflective, dialogic and autonomous professionals. During the twenty years of my career as a teacher educator, I have expanded the basis of subject teacher education from reflection to research. Research orientation is a process integrated into the basic courses of the studies in education, and the research or method-oriented courses of the disciplines are studied to gain competence in teaching subject(s). The subject didactic studies and the teacher-as-a-researcher orientation are designed on the same foundation. The knowledge and methodological skills of the students provide valuable material for subject didactic research. In subject didactic research studies, the research orientation typical of the educational sciences can be extended, for example, to school ethnography and action research and especially to design-based research.

As multidisciplinary fields of knowledge, teaching and learning will only develop if the research favours mutually competing research premises and methods that challenge our dominant thought patterns but remain justifiable. Emphasising the significance of continuous reconstruction and testing of theories is important, as vital and current information is the key criterion. Supporting teacher communities to introduce new knowledge and work as learning communities is also important. Teachers need an investigative attitude towards their work; they need to study their own teaching,

utilise active pedagogical research in their work and develop their pedagogical thinking. Teachers' independent thought is liberating; one does not have to go along with trends and 'isms'.

Becoming a teacher is a complex process and teaching is a complex phenomenon – to me and to everyone! My educational and professional position is the result of my subject-specific academic expertise. The teacher as a researcher, i.e. the research orientation of subject teacher education, is a tool for me as a teacher educator, and it is part of my professional identity. I see and interpret the world through the lenses of my own subject-specific experience<sup>5</sup>. The mother tongue and literature teacher identity is living in autonomous, creative and critical future teachers.

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<sup>5</sup> Thank you, Eero Ropo, for the metaphor!



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# Reflections on my journey towards culture-bound and intercultural education

*Pauli Kaikkonen*

## Introduction

This chapter deals with my development as a foreign language teacher and researcher, on the one hand, and my understanding of intercultural (foreign language) education, on the other. I begin by describing my starting position as a foreign language teacher. During my first steps as a teacher and researcher, I understood the inseparable connection between language and its background culture. In connection with my doctoral thesis and the first follow-up study, I realized that foreign language learning involved the perception of foreign and familiar both as a dialogical process with others and, at same time, as a very individual process.

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My further research projects led me to use the notion of language education for foreign language teaching. In the increasingly global world, intercultural encounters between people are regular and require the use of different languages. I have chosen to describe the new situation using the word ‘intercultural’. I talk about intercultural education and intercultural foreign language learning or teaching in the same context. This is because I understand that the same principles can be seen both in intercultural foreign language learning and in intercultural or multicultural education. As part of my chronological path, I also discuss authenticity and identity and plurilingualism as significant conceptions of modern foreign language education. Finally, I discuss the main points of my current understanding and propose some central perspectives to foreign language education.

## The first steps towards the culture-bound and intercultural approach

From the beginning of my teaching career, I have been a foreign language teacher. The 1970s was dominated by structuralism in linguistics and behaviourism in the educational sciences. I worked three years as a German teacher in an upper secondary school before my appointment as the lecturer of German didactics at the University of Tampere (in 1977). Three years earlier, teacher education had become part of Finnish universities at the newly established department of teacher education. The situation gave me both the obligation and the possibility, as a rather young teacher, to reflect on my own teaching and to consider what kind of a world view, language conception and language teaching competences new teachers would need in their work.

My considerations of teacher education and views of foreign language learning led me to develop learning materials for the Finnish comprehensive and upper secondary schools in 1979 with a group of

four teachers of German. One of our central ideas was that the learning material in school should be as authentic as possible. Authenticity was thus one of the leading conceptions paving the way to my beginning research work. However, my interpretation of authenticity at the end of the 1970s was narrow compared to my later understanding of it. At that time, authenticity was mostly understood as correct language use and cultural information of the target countries. The second important conception was communicative competence, particularly the oral competence in the use of foreign languages. At that time, however, the teaching of competences for communication was rather minute because of the strong influence of structuralism in linguistics.

To develop new learning materials, I set up a collaborative five-year teaching project at the Department of Teacher Education in the University of Tampere with three other teacher colleagues in German, focusing first on the 8th and 9th grades in comprehensive education. The project was later expanded for a further three years at the upper secondary school level. The comprehensive school learning material called *Komm mit 8-13* was published by the WSOY printing house (1980-1985).

From the beginning of the project, we assumed an aspiration to connect with the living worlds of the 14- to 15-year-old pupils. Through our teacher contacts in German schools, we asked German pupils of the same age to write about their lives, opinions and interests in the themes that we considered the learning material should include. In this way, we obtained rich, authentic material as the basis for the texts and exercises that we developed together. The learning material project was completed in 1985. While it did not produce research papers, it created a solid base for my theoretical thinking and later studies.

## Relationship between language and culture

The connection between language and culture is collective by nature. The fact that people belong to various groups naturally implies that the language used, or the languages used, are culture-bound. For human beings, language is a basic way of existing in the world. It is by means of language that we express ourselves and connect with fellow individuals. By means of language and by using language, we examine and evaluate the world, ask questions that are important to us, tell others about ourselves, set up relationships with others and listen to them and their notions of the world and themselves.

Language is also a means of expressing membership in a variety of collective groups, participation in our ways of living, and seeing the world and human beings as part of it. But simultaneously, we also dissociate ourselves from certain groups, i.e. from people who think and act in a different way. By means of language we also express our non-commitment to a certain set of values and to people who think and act in a certain way. By expressing our commitment and non-commitment, we, in fact, reveal who we are and what we are like (Kaikkonen 2012a).

Language depends deeply on culture, being a product of a particular culture. Languages differ from each other in several respects. Each language has its own sentence structure, sounds and vocabulary. The prevailing culture has developed or defined the way in which a particular language is written. The words of a language provide a great deal of information about their cultural past, but it is still not a matter of course that we are able to comprehend this information. In most cases we do not pay any attention to the cultural origin, or narrative, of the words in our mother tongue.

A language is further connected with *extra-linguistic factors* in a variety of ways, such as gestures, facial expressions, body language, the rituals, symbols and other signs that have been established in practice, as well as the non-linguistic signals that we both send and receive.

Moreover, our language is influenced, for instance, by our notions of time, space and gender. A language is used for communication and interpreted as part of the person's overall behaviour by the participants. Communication invariably includes meanings other than linguistic ones. As human languages are culture-bound, they are linked to the other factors that are present in their respective cultures. (Kaikkonen 1994; 2001; 2004; 2012a.)

The fact that language and culture are so deeply intertwined is very significant for foreign language teaching and learning. This was the point of view that I had already considered as a young language teacher when wondering about the contents of existing learning materials, classroom teaching methods, and the principles of teacher education that resulted in my own classroom behaviour. Understanding the language as being deeply rooted in its background culture led me to teach the foreign language in a culture-oriented way, by sensitising pupils to foreign language culture and foreignness, actively making perceptions of foreign linguistic behaviour and becoming, at the same time, aware of their automatized linguistic and culture-bound behaviours (e.g. Kaikkonen 1997b).

## Becoming a researcher of culture-bound foreign language learning and teaching

In 1986, I received the opportunity to conduct full-time research for half a year's time with funding by the Finnish Ministry of Education and the Academy of Austria. The time at the Teacher Training University in Graz was crucial for my thinking about learning and teaching foreign languages. I was now able to acquaint myself with qualitative research and its possibilities in fieldwork. I also deepened my understanding of experiential learning and teaching in foreign languages (cf. Puchta & Schratz 1984), and of the plurality of the conception of culture. As a result, I was able to outline an action

research experiment to study the learners' and teachers' perceptions and experiences of foreign language and culture learning. The experimental project was conducted in 1989–1990. Ten German language students participated in it, Burkhardt Bendel (lecturer) and myself, from the University of Tampere. As a result of this project, I finished my doctoral thesis *Erlebte Landeskunde* (Kaikkonen 1991). It deepened my understanding of authenticity towards the language user's authentic action, producing a change of perspective as a new notion that included a comparison of and reflection on two different language cultures, introducing the conception of an authentic encounter.

I summarised the conclusions of the thesis briefly as follows: A central function of the stay in Germany, besides giving opportunities for observation, contact and information-gathering, was to allow the participating students to test their previous assumptions enabling them to verify or falsify them. An important result was that the teaching experiment and its procedures were able to change the participants' cultural awareness (Kaikkonen 1991, 175). At that time, intercultural foreign language teaching was in search of its forms at least in Central Europe, and thus my doctoral thesis aroused a great amount of interest among foreign language education researchers. As the result of this, I had the opportunity to participate in several international seminars and conferences.

The action research approach provided an excellent way to connect theory with practice. It led to conducting further research with students at the upper secondary school level. Thus an action research study on culture-oriented foreign language teaching was launched in collaboration with Tuula Pantzar and Jari Aarnio, the lecturers in German and French at the Teacher Training School affiliated with the University of Tampere (Kaikkonen 1993; 1995). The project comprised a two-year teaching experiment with 16- to 17-year-old students aimed at producing a curriculum that would take into account the deep connection between language and culture, and thus help the

learners grow out of the shell of their mother tongue and their own culture. The research project was also aimed at developing an active learner role through simulations and mental image training. The project thus included a number of activities with the students of French and German involving site visits or online work. Moreover, there were several classroom encounters with adult native speakers of French and German including a great deal of reflective, collaborative and dialogical action (Kaikkonen 1998b).

The results of the study can be summarised as follows: the action research *Culture and Foreign Language Learning* indicated that a foreign language has to be studied with its cultural background. Moreover, it became clear that foreign language learning as a traditional school subject could help pupils grow towards intercultural understanding and intercultural learning to some extent only. It is obvious that pupils have been guided to consider other people, be pluralistic, and think globally in all school subjects. According to this approach, however, to achieve intercultural learning, the curriculum should be developed in such a way that it also includes all the basic fundamentals of intercultural learning: an individual's own culture, his or her own cultural behaviour, and his or her own language on the one hand, and foreign cultures, strange behaviour, and foreign languages on the other. So, familiarity and foreignness are the experiences the pupils should be exposed to in school continuously. (Kaikkonen 1997a, b.) The research project helped me understand that foreign language learning has to deal with intercultural learning. To be efficient, intercultural learning should not be limited to foreign language education only; it should be part of the entire school curriculum. These demands have been understood well in the latest school curricula in Finland.

## Towards cooperative and networked language and culture education

In 1994, together with Professor Viljo Kohonen, we started a collaborative long-term research and development project together, the OK project. It was an intensive three-year project designed and led by the two of us in collegial collaboration. It was carried out in six schools in Tampere and Nokia with 40 participating teachers and their pupils (see Kohonen in this volume). The project included classes from comprehensive to upper secondary schools. In addition to our shared responsibility, I was in charge of research on *intercultural learning*. The project findings were published in three edited collections of papers written by both the participating schoolteachers and researchers of the Department of Teacher Education. The project also resulted in several studies that were published both nationally and internationally (e. g. Kohonen & Kaikkonen 1996; Kaikkonen 1998a; Kohonen & Kaikkonen 2001). Moreover, members of the project group participated in several European seminars, coordinated by the Council of Europe, and in different international research seminars and conferences. In this way, a large international network was built up for disseminating the findings.

The experiences of the participating teachers and pupils yielded a great deal of new understanding of *dialogical* and *reflective action* and the challenges of encountering foreignness. In addition, the project revealed the importance of a whole-school approach in supporting the learners' intercultural education and understanding of otherness, similarity and difference. Learners clearly progressed towards the global world and intercultural challenges (Kaikkonen 1999). The project also functioned as excellent in-service education for the participating teachers, facilitating them to commit themselves to reflecting on and reporting their classroom experiences for a sufficiently long period of time (Kohonen 1999).

In 1998, I was appointed as the professor of foreign language pedagogy at the University of Jyväskylä, acting in this position for the following 11 years. My collaboration with the Department of Teacher Education at the University of Tampere, particularly with Professor Viljo Kohonen continued seamlessly. In 1999, we established a nation-wide series of the so-called VikiPeda conferences in foreign language education, aimed at supporting the pedagogical research at the departments of teacher education in Finnish universities, and disseminating the findings to language teachers nationally. These conferences took place biannually at each university and were coordinated by us and organised by the local university researchers. Through the funding by the Ministry of Education, it was possible to invite internationally distinguished researchers of foreign language education to all of these conferences<sup>1</sup>.

My research orientation as a professor at the University of Jyväskylä continued in the direction that I had assumed at the Department of Teacher Education in Tampere. My basic theoretical assumptions matured in the collegial work with active researchers in Jyväskylä and in the fruitful collaboration with different universities and research centres, especially with colleagues at the universities in Tampere, Turku and Oulu. While in Jyväskylä, and during my visiting researcher year at the Pedagogical University of Heidelberg, it became clear to me that my conception of authenticity had to be widened beyond language and cultural authenticity. This led me to the realisation that authenticity is deeply connected with experience and the meaning given to it. Next, I discuss my expanding understanding of authenticity in some more detail.

*Authenticity* means something genuine that originates from the person himself or herself, as indicated by its Greek root word (authentēs = originator, maker). The person who initiates something

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<sup>1</sup> The conferences were held in Jyväskylä (1999 and 2013), Tampere (2001), Oulu 2003, Turku (2005), Helsinki (2007), Joensuu (2009) and Vaasa (2011). The conference papers were published by the local university, from the second volume onwards in English and/or German (see also Kohonen in this volume).



new is a maker or originator of the new idea or thing. Thus, in foreign language learning, authenticity refers to the significance of learning situations and the learning process. In this sense, authenticity is directly connected to experiences of foreign language and its communicative use in a community of speakers. The learner is thus the person who acts, experiences, makes things happen. Philosophically expressed, the pupil is the subject of his or her own learning (Jaatinen 2001; Lehtovaara 2001). Since authenticity in foreign language learning is connected to several factors, it should not be reduced to mean just one issue, such as the authenticity of foreign language use or culture.

I wish to argue that authenticity and experience are closely connected (see van Lier 1996). Further, the notions of perception and reflection seem to be closely connected to them, the latter as a tool helping the learner critically explain his or her experience, being open to ambiguity in meanings. As a result of this process the learner is able to change his or her understanding. Authentic foreign language teaching should thus include and provide authentic experiences of foreign language use and of the target culture, and give learners opportunities to test their observations and interpretations in as real situations and in as authentic ways as possible. Moreover, foreign language teaching should make it possible for learners to change or strengthen their received knowledge. They should also be able to ask whether their observations correspond to the reality and whether their hypotheses of language use are right, i. e. current and acceptable in foreign language use in intercultural contexts. Teachers of foreign languages are well placed in this complex process of negotiating meanings and making sense of interaction. (Kaikkonen 2000; Kaikkonen 2002.)

The above reasoning led me to further reflect on the teachers' pedagogical action in foreign language teaching. I analysed it through three models: the pedagogy of information, the pedagogy of encounter and the pedagogy of conflict (cf. Nieke 2000). Eva Larzén has added to them the pedagogy of preparation in her doctoral thesis (Larzén 2005).

The *pedagogy of information* refers to teaching that aims at giving learners information and facts. In language teaching this means, among other things, teaching words, idioms, phrases, grammar, pronunciation and orthography, and correcting the learners' mistakes. In culture and Landeskunde teaching this is a matter of teaching geographical or society-based facts and culture-related behaviours. The *pedagogy of encounter*, according to its name, is about encounters with foreign cultures and their members – both face-to-face and, for example, through electronic communication and online encounters. Learning is intercultural and dialogical, which means receiving experiences in authentic situations, and reflecting on them alone or in collaboration with others. The *pedagogy of conflict* is always based on encounters, either real or simulated. Encounter may often lead to smaller or bigger conflicts. We should not be afraid of them or avoid them because they provide real opportunities for intercultural learning. Conflicts can also be simulated in the classroom and their solutions can be discussed cooperatively (Donath & Volkmer 2000; Kaikkonen 2005b; 2007). Larzén (2005, 119) defines the *pedagogy of preparation* as follows: “The pedagogy of preparation concept is used about working methods aimed at preparing the students for acting appropriately in future intercultural situations.” According to her, most teachers in her study referred to this approach.

Rather than language *teaching*, modern language pedagogy prefers to use the concept of language *education* (see Kohonen in this volume). The reason for the change of the concept may be the fact that the emphasis has shifted to the learner as an individual, to his or her languages and culture(s). The world and all of its regions are multicultural. Globalisation has increased people's worldwide mobility, which is further promoted by the nearly unlimited amount of information on the Internet and in other media, and by encounters and exchanges of experiences in the social media. Different cultures and individuals are present all the time and in most living areas. The second reason for preferring language education to language teaching

relates to the notion of learners' ownership for their learning. Kohonen (2001) says that there is a need to develop foreign language teaching towards the notion of *learner education*. He points out that the term 'education' is more appropriate here than 'training' because it implies a holistic goal orientation to learning that emphasises educational values.

Language education clearly includes the notion that human beings are *plurilingual* (i. e. polyglot, individually multicultural) in different ways. They are surrounded by different cultural phenomena, they encounter otherness and foreignness in authentic situations and as authentic actors, and they are forced to clarify ambiguous experiences to themselves and often to others also. They come across conflicts and have to solve problems arising from these. This has an influence on their self-conceptions and identities. This fact can also be seen in the curricula of schools and other learning institutions, and thus the integration of subjects is no more a theoretical matter. Every school subject can enhance the learning of language and culture. Consequently, a plurilingual and pluricultural individual is a common cross-curricular goal, in which the learners' different languages with their cultural features are considered (e. g. Kaikkonen 2012a, b).

## Identity, plurilingualism and intercultural learning and education

As part of recent societal developments, our environments have become multicultural, involving many kinds of connections between individuals, which are related to both language and its background culture. Due to increased mobility and various encounters of foreignness and otherness, people now have a variety of possibilities to make choices concerning their learning. These considerations have led me to a detailed analysis of *identity* and *plurilingualism*. I discuss

both of them because I think they are essential for intercultural education and learning. They are conceptions that describe the individual's narrative character and are thus related to how the individual imagines him- or herself, and how people consider themselves in relation to the world, their environments and other people. Both conceptions are also connected with what types of choices they make or perceive as being possible to them.

This kind of thinking arises from my own and other researchers' studies, and also from a number of doctoral theses that I supervised at the universities of Jyväskylä and Tampere (Karjala 2003; Taajamo 2005; Rasinen 2006; Kara 2007; Nyman 2009; Ruohotie-Lyhty 2011; Valtaranta 2013; Raunio 2013). Similarly, significant to my thinking was the research and development work of the European Language Portfolio conducted in Finland in the 1990s within the OK project (e.g. Kohonen 1994; Lehtomäki 1997; Kolu 1999; Pajukanta 1999; Kohonen & Pajukanta 2000; 2003; Kohonen 2005; Hildén & Salo 2011). The European Language Portfolio project (ELP) culminated in the decision of the Finnish National Board of Education (nowadays: The Finnish National Agency for Education) to develop a Finnish version of the ELP for the Finnish comprehensive school. This assignment was completed in the KISA project at the University of Tampere (2010–12, under the co-leadership of Viljo Kohonen and Pauli Kaikkonen), resulting in the design of a Finnish ELP website <http://kielisalkku.edu.fi> by the project group (2014) under the auspice of the Finnish National Agency for Education. (see Kohonen in this volume).

The conception of *identity* is associated with belonging to a group (cf. Sen 2006), and there are different types of identities. An interesting question is how solid and genuine these groups actually are. An individual's identity is essentially connected to dependence on reference communities: family, relatives and other immediate communities, such as tribe, country and nation. Children join these groups, not by choice, however, and they grow up being influenced

and even moulded by them. When a person grows up, he or she can rework his or her cultural and linguistic identity in many ways, for example, trying to assimilate influences other than those of the source culture. For example, life in a foreign culture inevitably creates new features in the individual. He or she notes that people behave in different ways than he or she has done in his or her familiar environment; and that people value different things from what he or she is used to. Living a long time in a foreign culture makes an earlier unfamiliar behaviour seem as natural and familiar as the behaviour in his or her starting culture.

Likewise, people can expand their repertoire and choice of languages so that they lead various aspects of their lives using different languages. In this way they can become pluricultural and plurilingual individuals for whom different cultures are natural, and various languages are there to serve various purposes (cf. Lüdi 2003; see also van Lier 2012). A foreign language or even several foreign languages then become part of an individual's identity. (Kaikkonen 2005a, c.) Therefore, identity is twofold in nature: it contains traces of both dependence and freedom. Due to being born and having grown up in a society (family, tribe, nation etc.), individuals are so deeply influenced by it that they can hardly free themselves from its influence totally. An excellent example is one's native language. But in youth and adulthood, individuals can dissociate from many former identity features if they see it necessary. In that way, identity can be described as being twofold in nature (Kaikkonen 2004).

The later stages of the modern age – the so-called post-modern age – have transformed the identity of Westerners possibly more than any other people. Processes initiated by the modern age are the foundation to problems associated with relating to a collective identity (i. e. the identity given by a certain institution or community, a nation or country, for example). Since the modern age, people have suffered from a sense of rootlessness, separateness, a sense of not belonging to “the great order of existence”, where everything and everyone had

their own place and a clear function. The modern, post-traditional way of life has thus been characterised by a diversity of perspectives and horizons. The well-educated human being needs an ability to put them in perspective, to challenge them, and to break free of traditional values and community bonds. (Rosa 1998; Kaikkonen 2005c.)

Our global world and our present time have deliberately started to emphasise *plurilingualism* as an important factor in interaction between people speaking different languages, and in efforts to enhance mutual understanding and peaceful coexistence. On the one hand, plurilingualism has become a central conception owing to people's mobility. On the other hand, plurilingualism stems from the global working life and economy as well as the unification that has been taking place. Highly typical of modern plurilingualism is that in most cases it is bilingualism that constitutes an individual's plurilingualism. The global world needs a common language, and the English language has occupied the dominant position. However, there are also several other regional lingua francas, such as Spanish, French, Russian and, increasingly, Chinese. (Kaikkonen 2012a.)

One of the aims in language education is the intercultural learning of a foreign language. In my opinion, intercultural foreign language teaching does not differ practically at all from general intercultural education: intercultural education towards multiculturalism (as a nation- and country-wide conception) or pluriculturalism (as an individual conception), internationalism, respect, an understanding of diversity, tolerance for ambiguity, empathy, etc. All of these notions keep appearing in relevant research literature, school curricula and people's everyday talk (Bausinger 1999; Bredella & Delanoy 1999; Kaikkonen 2012a).

In the background of intercultural education, there are two types of principles: on the one hand, the common *principle of human rights*, which is guided by the notion that all human beings are equal and must be treated in the same way. All human beings are equally valuable and have equal rights independent of age, origin or gender.

On the other hand, there is the *principle of difference*, in which the notions of authenticity are recognised. In according to this principle, different characteristics, needs and abilities vary from individual to individual and from one group to another. The principles of equality and difference are realised in tension with each other: the principle of equality calls for equal treatment of all people, while the principle of difference calls for the perception of differences between individuals and groups. Intercultural education and learning is carried out in this tension and exists at the demarcation line between the two conflicting principles.

## Conclusion: discussion and theses of foreign language education

Teaching and learning foreign languages takes place as interplay between own and foreign. Foreign language learners have their native language(s) and culture(s) in the background. When learning a new language, they also encounter a new (language) culture. The task of teaching is to guide learners to grow beyond the borders set by their own culture(s) and native languages(s). This requires (1) sensitisation to diversity, (2) ability to make conscious observations about the native and foreign language, behaviour and environment, and (3) readiness to seek and gather information on linguistic and cultural standards in both cultures (Kaikkonen 2001). Foreign language education thus targets an active language learner with socially responsible learner autonomy (e. g. Kohonen 2012).

Modern language education also aims at producing plurilingual and pluricultural language users. This is a logical aim in the current multilingual and multicultural world. The premises can be manifold: one can be plurilingual because of one's family or immigration, or if one has lived in a foreign language culture, or wants to be able to use different languages in different situations in life. Due to the

very essence of plurilingualism, language educators must take into consideration the learner's different languages: the native language as the language of personal emotions and as the first tool for interpreting the surrounding world, and any other languages in early childhood, as well as the foreign languages chosen by the learner. At the same time, the learner's language identity needs to be considered and developed.

An important principle in language education is also seeing the learner as a person and an active language user from the very beginning, rather than seeing him or her as a recipient of information who is expected to draw that information from the treasury of knowledge after school in real life-situations (cf. Ruohotie-Lyhty et al. 2008). What is extremely important is that learners must be able to experience from the beginning that they can use the new language to do something that is real and meaningful to them, irrespective of the fact that their language usage can at first be deficient and scanty. (Kaikkonen 2012a.)

In language education, one of the aims is intercultural learning, which requires giving the relevant grounds for a description of what exactly interculturalism implies from the various points of view. Intercultural knowledge is not only knowledge that is known to be true. Due to its nature that relates to otherness and foreignness, it is always negotiable knowledge and therefore requires dialogical and authentic learning processes. According to its basic meaning in Greek, *dialogue* means that those engaged in it enter into a kind of intermediate space (dia=through, in between) in which their knowledge, understanding and concepts of the world (logos) are raised for joint contemplation (Kaikkonen 2005b).

The teacher plays a crucial role in introducing foreign language learners to intercultural encounters (cf. Jaatinen 2014). Intercultural learning requires an initiation of several experiential processes. Not merely cognitive, these processes also include as essential elements the pupils' affective, emotional and social behaviour and learning (cf.



Nyman & Kaikkonen 2013). Thus it would be justified to talk about holistic learning and guidance towards it. That means learning to live in a multilinguistic and multicultural world, where encounters with diversity and foreignness are part of everyday life. Thus it seems rather odd that teachers should be able to assess their students' intercultural experience and learning just by means of tests (cf. Byram 2009). What is called metacognitive learning is also an essential part of these processes. In the final analysis, we are concerned with enhancing a process whereby pupils become full members of society and learn to live in the international global world. It is thus a central task of education to enable an individual to become the type of person that is required in the life of today's world and tomorrow.

To sum up, I propose a number of theses for modern foreign language education based on the research findings and thoughts discussed above. As I see it, foreign language education emphasizes the following human, linguistic and pedagogical aspects:

## **Theses of foreign language education**

- Due to their nature, human beings are holistic actors, i. e. thinking, feeling, knowing and acting persons in contact with other people. The goal of schooling is to educate whole persons, human beings, who trust in their experience (Jaatinen 2001; cf. also Jaatinen 2007; Kohonen in this volume).
- Language is an essential part of human identity. Languages other than the native language can also have an important role in the development of the learners' identity (Kaikkonen 2007; Kaikkonen 2009a). Human beings are plurilingual in different ways (Lüdi 2003).
- Language functions above all as a medium of speech, whereby human interaction is very versatile, and non-verbal communication plays a substantial role in it (e.g. Kaikkonen 2001).
- Foreign language education involves cooperation between language, culture and identity. All of these are equally important and influence each other. (Hu 2003; Kaikkonen 2010.)
- Language is in a natural and obligatory contact with its cultural background. When we speak a foreign language, the culture of the native language has an influence on it through interference. Consequently, foreign language education does not propose the native language competence as its goal, but an intercultural communicative competence (Kaikkonen 2012a, b).
- Learning a foreign language is meaningful in authentic situations. This means that learners are creators and co-organisers of their learning and linguistic action (e. g. Kaikkonen 2002).
- Experiences and coming to terms with their possible conflicts are useful and educational in foreign language learning. A significant intercultural foreign language learning process is dialogical. It is based on the respect for each other, on an authentic stance and equal rights of participation for all persons involved (Kaikkonen 2007; 2009b).

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# Interactive, authentic, gameful e-learning concepts for the foreign language classroom

*Laura Pihkala-Posti*

## Introduction

This chapter aims at presenting a sort of snapshot narrative of my current research, i.e. some central aspects of my interdisciplinary cumulative dissertation. The special focus lies on the aspects that have been deeply influenced by both my teacher education studies in the early 90s at the University of Tampere and by my master's studies in educational sciences starting in the year 2008. My purpose is to substantiate a few pedagogical intentions with the multimodal interactive language learning concepts I have been designing. I also introduce connections in my teaching interventions to learning approaches (or concepts), such as holistic conception of the human being, authenticity, experiential and situated learning, learner

autonomy, agency and identity building, dialogue, collaboration, as well as intercultural encounters and communication. The snapshot approach means that the research procedures, different interventions and their results are not described in detail here. Several publications already completed and a few more in parallel preparation will complete the task, as well as the abstract, introduction and conclusion of my PhD dissertation (Pihkala-Posti 2011; 2012a, b, c; 2013; 2014a, c; 2015a, b; 2016; Pihkala-Posti & Uusi-Mäkelä 2013; Pihkala-Posti et al. 2014, Kallioniemi et al. 2014; 2015).

## Theoretical and conceptual frames

A leading theme in my research is the concept of *authenticity*. This is thanks to Professor Pauli Kaikkonen who was the lecturer in language didactics for the students of German in 1993–1994, when I completed my subject teacher education studies in the University of Tampere.

Authentic foreign language learning is enhanced through interactive and reflected encounters when using a foreign language. Observing and testing meanings in real-life linguistic-cultural situations play a significant role in authentic foreign language learning. (Kaikkonen 2002b, 40). [Translation from German original: Authentisches Fremdsprachenlernen wird durch interaktive und reflektierte Erfahrungen über den fremden Sprachgebrauch gefördert, wobei Wahrnehmung und Bedeutungsüberprüfung in wirklichen sprachkulturellen Situationen eine wichtige Rolle spielen. Translated by Pihkala-Posti].

In addition to the emphasis on the interaction with people of a target culture (native speakers) and the authentic media of a target culture (newspapers, books, radio, TV, films, websites) as a second dimension of authenticity, the authentic classroom communication and output of language learners, e.g. about their own lives, interests and experiences, that is, the communication about “something real

and present”, are also highly important. According to many studies concerning the brain, particularly those pertaining to learning and motivation research, for example, activating and strengthening the language users’ own meaning structures to enhance learning is essential (e.g. Garner 2007; Grein 2013). In the best-case scenario, discussions about “one’s own” lead to further reflections on one’s own culture, which is essential to be able to prepare for the encounters with otherness (Kohonen 2001; Jaatinen 2001). As a teacher, I have tried to develop my teaching and educational materials, pedagogical approaches as well as the local curriculum in order to implement language education that enables my students to experience authentic communication in the formal school context. My purpose has been to develop their language learner identities towards open-minded intercultural actors (Kaikkonen 2001; 2002a, b; 2012). As noted in this chapter, I have experimented and developed the use of online applications for this purpose for 15 years.

The authentic approach in this research emphasises the role of dialogue, reflection and understanding in the hermeneutical sense, and represents a holistic view of the human being (cf. Lehtovaara 2001; Rauhala 1983). Learner autonomy (Korhonen 2016; Jiménez Raya & Lamb 2008; Kohonen et al. 2001), here, is present through the more visible/concrete concept of *learner agency* (van Lier 2010; Kohonen 2010). According to my understanding and experience, its development is crucial and also a prerequisite for the development of learner autonomy (cf. also Kaikkonen 2012). It is an active attitude of a person towards the others and the world, which is evident in the intension and willingness to engage in dialogue and interaction.

Individual mental knowledge is generated in interaction with the environment, shaped by the quality of the interaction. The pupil has an active role in this process, constructing their subjective personal knowledge and meaning. Dialogue entails essentially openness to the other person and to the subject matter at hand, a willingness to understand the diversity of views and opinions. (Kohonen 2010, 4.)

In the context of this chapter the interaction between the learners often happens virtually, sometimes between just a learner and a(n) (interactive) platform.

Focusing on learner agency does not mean leaving the learners on their own, on the contrary. The role of the teacher merely changes from the traditional one. The teacher's new role is that of a learning catalyst, regulator and organizer. The concept of *co-operative learning*, nowadays referred to as *collaborative learning* (see, e.g., Arnold 2003 for the differences between these concepts), plays a central role in my research and education. In the Central European context, the popular concept *Lernen durch Lehren* (Martin 1996) is parallel to this co-operative approach. The central idea is to activate and deepen the learners' knowledge construction by letting them first learn something and then teach it to other learners. It is important to interchange the composition of the learning groups collaborating on the micro-level; sometimes it is good to study in heterogeneous groups where the more advanced learners teach those who are not as far yet and are challenged by the example of the more advanced. However, it is also important that the students who are enthusiastic about a theme, for example, are allowed to work in the same group and share their knowledge and passion together. Then, positive emotions that are activated promote learning (see Kohonen et al. 2001 and Grein 2017 concerning the role of emotions in learning). From the perspective of the Vygotskian *zone of proximal development*, working in homogeneous groups is also important. In this situation, the group members share a more equal zone of proximal development whereby they can promote each other's learning by challenging each other in a reasonable way - as we know, too little and too much challenge are both detrimental for a learner. Therefore, both a suitable zone of proximal development as well as relevant *scaffolding* are of high importance. As a consequence, both peer support by the co-learners and by the didactic expert, the teacher, in particular, have a high value

in learning new things (Lantolf & Thorne 2006; Eskelä-Haapanen 2012).

Online platforms offer various opportunities for learning dialogues and engaging in collaboration and peer support, which will be exemplified in this chapter. It should be noted that individual learning methods are needed, as well. Some students simply prefer to work alone and forcing them to always work outside their comfort zone would be discriminating. What is more, individual processing is always required for something to become part of the individual's knowledge structures. Neither a strictly collaborative approach nor only working alone suffice as a balanced and fair pedagogical approach - both are needed.

The Common European Framework of Reference for Languages has played a central role in my thoughts when practising the different skill areas in communicative competence (Council of Europe 2001). On the one hand, the equal importance of/focus on spoken communication and action orientation in CEFR and, on the other hand, the lack of possibilities for oral practice in the first generation of web-based solutions have strongly influenced my research focus. In addition, it is an eternal challenge to be able to include real action-based communication opportunities in the classroom, as important as it would be (cf. Pihkala-Posti 2014; 2015a, b; 2016; for the construction of action schemes, see also Aebli 1991).

In this chapter, I will show and report about a few important solutions included in my research project. As a synthesis, I have connected central ideas of these streams to my own experiences with and knowledge of the mediamorphosis/changes in the media world (e.g. Luukka et al. 2008; Fidler 1997; Gee 2003; 2004; Prensky 2001; Carr 2010; Small & Vorgan 2008; Pihkala-Posti 2012a, b). This includes, among other things, the challenge of keeping students interested in learning several foreign languages while, at the same time, their workload is increasing in the compulsory school subjects (Pihkala-Posti 2012a, b). One factor that explains this is the growing

gap between informal and formal information processing strategies. This leads to a situation in which e.g. strategies and routines of working with longer linear texts and memorising contents by heart have decreased, but their use in school context is still remarkable. This leads to a sort of capacity dilemma. (Rosén & Gustafsson 2016; Pihkala-Posti 2012a.) According to my reflections, in this type of situation, where pupils need to become more deeply motivated and involved in order to engage in a multilingual learning approach, the key issues are, among other things, creating an atmosphere of respect and support different types of learners as members of a learning community (Gieve & Miller 2006). Further goals are to support language learning as part of the learner's personal identity building processes and to support the students reaching their own learning goals. Furthermore, the pedagogy of encounters and combining informal and formal learning play an important role here (Prensky 2001; Gee 2007; also Kohonen et al. 2001).

## Waypoints of the research journey

In the following, the results of my interdisciplinary PhD research project are briefly described. My research methodology is based on the ideas of action- and design-based research but have their roots deep in the hermeneutic tradition. This means that the goal is to reach a deeper understanding of different aspects in foreign language learning and teaching that play a role in learning communities and learning identities of different types of learners. During my PhD project, multimodal, collaborative, experiential, action-based and authentic web-supported concepts have been developed for the context of foreign language education (Pihkala-Posti 2014c; 2019 manuscript). Ideas of gamification have also been applied (Pihkala-Posti 2015a, b; Kallioniemi et al. 2015). The central issue has been to support the development of learner agency as well as skills for

intercultural communication (Pihkala-Posti 2012a, b; 2015a; 2016; 2019 manuscript).

To find as realistic and authentic approaches as possible to develop the different areas of the communicative competence in a foreign language, several Web 2.0 tools and platforms have been used in various interventions on different school levels, from primary school up to university as well as in international co-operation (Pihkala-Posti 2011; 2012a, b; 2013; 2014a, b, c; 2015a, b; 2016; 2019 manuscript). They are *Wordpress* blogs, *Wikispaces*-wikis, *Wordle*-wordclouds, *YouTube*-videos, various voice recording and videoconferencing platforms, the informal webgameworld *Minecraft* and, finally, the embodied, collaborative language learning environment *Berlin Kompass* created in our multidisciplinary project *Active Learning Spaces* at the University of Tampere. Also, *CityCompass* – a different user interface realization of the idea of *Berlin Kompass* was developed and tested. Special emphasis was placed on the development of oral communication skills which had been disregarded/ ignored in the first generation of the web-based approaches, where mostly written communication took place (cf. Pihkala-Posti 2011; 2012a, b; 2013; 2019 manuscript, Kallioniemi 2018).

Both material and method triangulation have been essential elements in the research strategy. Student feedback, teacher observation, recordings of the learning situations on the platforms and student output have all served as my research data. (Pihkala-Posti 2011; 2012a, b; 2013; 2014a, b, c; 2015a, b; 2016; 2019 manuscript.)

## Step 1. Social media, videoconferencing and voice applications

In the first part of my research project, I implemented teaching interventions with different web tools that enable oral communication in order to strengthen the role of oral communication. The said tools included videoconferencing with *iVocalize* and *Adobe Connect Pro*, in addition to other applications, such as *Skype*, *Vocaroo*, *Voxopop*,



*Voicethread* and, not to forget, the most popular tool of all used in the teaching, at least according to my research (Pihkala-Posti 2012b; 2013; 2014c; 2019 manuscript), *YouTube*.

*Vocaroo*, a simple tool enables the online recording and embedding of short oral comments to a web-page (e.g. *wiki*, *blog*, *Facebook*) or emailing of recordings to a recipient. Comments related to different themes were recorded by the upper secondary school students. The themes had to do with the students' own everyday life: their friends, hobbies, housework, etc. *Voki*-messages, i.e. (student) recordings spoken out by (speaking) avatars were also explored but not used extensively. One effect with using an avatar is to reach a certain distance to oneself just by hearing the voice but not seeing the speaker him- or herself, which could minimize the social pressure of talking compared to personally presenting something in front of the class, for example. (Pihkala-Posti 2014c.)

*Voxopop* is an online discussion forum platform where the discussion input is recorded as chains: an initial recording is made by someone and after that commented by others, or principally, also by the initial person him- or herself (unfortunately the *Voxopop* platform was closed in autumn 2017). My aim was to create an asynchronous online dialogue between the teacher and the students, i.e. a discussion community. The supposed advantage of this platform was that it would be possible for the students to listen to the output and to consider in peace, how to react upon it. This would especially support the types of learners that need time to organize their ideas into words. A discussion chain including input both by the teacher and the students would hopefully enhance peer learning.

In the spring semester 2012, *Voxopop* was used for the first time in GFL (German as a foreign language) teaching at the language centre of our university in three courses with a focus on oral communication. Different discussion tasks were assigned to students and the teacher recorded the assignment instructions. Each student listened to the recording and the possible previous comments recorded by the

other students in the course. Then the students added their own contribution to the assignment, and the teacher recorded a feedback comment on each student's contribution. The students were then able to listen to the feedback. The students expressed their opinions on various topics; the discussions formed "chains" through which they practised argumentation in the target language. The topics of discussion included the role of mass media versus Internet, financial saving measures, student living, tobacco consumption, women and careers, etc. Also, the students made summaries of lectures given by a series of German language specialists and subsequently recorded oral presentations about them.

The majority of the students saw that for the first time oral exercises could be done as homework, which was considered to be important and useful. The most common criticism that individual students expressed was related to technical problems that had occurred during recording. The students did not react negatively to the pedagogical setting, but nonetheless some students preferred face-to-face interaction. The teacher found that the short samples of oral speech provided her with a more versatile picture of what the students' oral skills were like. In addition, the students felt that the personal oral feedback (asynchronously) was an advantage. Even if it proved to be time-consuming, the students found it personal and valuable. The next step could have been that, instead of the teacher, the students had started discussions on different themes. (Pihkala-Posti 2014, 210)

It was nice to do these exercises at home, and it was possible to record the task as many times as I wanted, until I was satisfied enough with the outcome. In addition, it was nice to listen to the presentations of others as long as they were not too long. My learning is enhanced by the use of different teaching methods and tools. Especially in speech production, and also in other oral exercises, the use of technology brings new opportunities. Too little speech

production is practised at our schools. It is difficult, because the students are shy to speak. Therefore, perhaps Voxopop could help here...(A student of German at the university language centre, participating in the voice application teaching intervention).

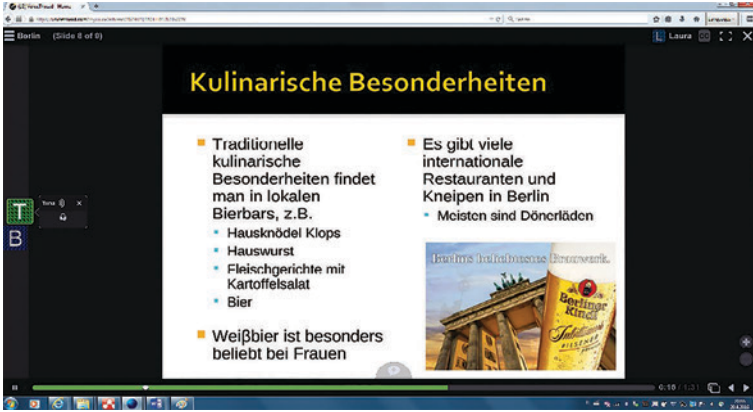


Picture 1. A screenshot of a Voxopop group discussion task with the upper secondary German learners: reading and recording a favourite poem in the target language

In the upper secondary school, the participating students listened to my *Voxopop* voicemail instructions, after which they recorded their own responses and listened to the responses of others. Every day topics were discussed in German, e.g. the music they like/dislike, answers to voicebox messages recorded. However, even more demanding themes were also included, for example, poems were recited and discussed, and jokes were told after web searches for interesting ones. These last mentioned tasks are not very common as oral exercises in a typical classroom context, because quite a few Finnish students find it embarrassing to express these types of intimate things, for example to recite poems in the classroom publicly. With *Voxopop*, this type of group pressure and stress were avoided, because the recording was made at the students' own pace at home. Understanding jokes

in the target language is not simple, either. The fact that Voxopop offers opportunities to listen to and record speech at one's own pace - and several times if needed-, is encouraging. These recorded samples on various topics (a kind of a portfolio) of students' pronunciation, intonation and oral production gave, according to my evaluation, a better picture of a single student's oral skills than in typical classroom situations. In the classroom, students practise oral interaction while the teacher typically goes around and listens to students here and there for a short moment. A further advantage of Voxopop-type oral practice relates to the possibilities to use these kinds of samples for evaluation purposes of oral skills, e.g. as in CEFR. Of course, the evaluation should be complemented with synchronous face-to-face interaction. About one half of the students liked this approach, the other half reported that they learn best by reading and writing something, not by listening and talking, which does not mean that they do not need training in oral production or would not learn language in that way, too. (Pihkala-Posti 2014c.)

*Voicethread* is an interactive presentation tool that enables combining records with pictures and texts, Power Point presentations or even videos. Others can comment on these using voice or text, which creates possibilities for asynchronous interaction and dialogue. The university students searched for information and pictures in the Internet and made presentations on cultural issues in the different states of Germany. The presentations were commented on by other students and the teacher who also gave linguistic feedback. The presentations, as well as the related discussions, were interesting and their pedagogical value was evident, but some technical problems concerning, for example, the sharing of the presentations caused frustration among students. (Cf. Pihkala-Posti 2014c.)



Picture 2. A screenshot of a Voicethread page in the language centre's culture project

Two videoconferencing platforms, i.e. *iVocalize* and *Adobe Connect Pro*, both combined with *Skype*, were used during two courses to teach upper secondary school students from different schools participating in oral communication in German in a blended learning setting (Pihkala-Posti 2012b; 2014c). This means that most teaching occasions were online in the evening. The students worked at home and talked through their headsets to the teacher and the other students. The students used the chat of the videoconferencing room actively as a second synchronous communication channel during the spoken interaction in the platform, and different types of parallel discourses were created. An added value of the chat that the teacher-researcher (myself) also found during the sessions was the discrete possibility of giving support while the students were talking. For example, during the oral production when the students were searching for suitable words, the teacher could give advice through the chat without the need to interrupt the speech flow. So, the teacher could simply let the students talk and offer vocabulary help in the chat window, if needed, answer supplementary questions to the vocabulary, comment on something or correct expressions, if necessary, without affecting the pupil's discussion otherwise. Ideally, the teacher only intervenes in the discussion if the student communication stops completely. A special

part of the course consisted of intercultural encounters, i.e. native speakers “visited” the online sessions and talked with the students. The students also told them facts about the Finnish nature, among other things. (Pihkala-Posti 2012b; 2019 manuscript.) According to the feedback, the students highly appreciated these visits (Pihkala-Posti 2012b, 18):

It was a lot of fun to talk with the [online] visitors. It felt good to notice that it was possible to understand at least the central content and to become understood myself too. I once again got a practical reminder of (the fact) that German skills are useful. ☺ Waiting for the next time... [A 16-year-old student of upper secondary school]

The videoconferencing platform, *iVocalize*, was also used on a special German course for business students at the university language centre in spring 2012. The students interacted with students of the same field in Slovenia. The Finnish students gave presentations about the Tampere Trade Fair in German, after which the Slovenian students asked further questions. This is a type of communication the students could encounter in their professional life later. The authenticity of the situation was a significant motivating factor, which, according to the teacher, was seen in the students’ thorough preparations for the situation, compared to similar assignments earlier. The overall experience of videoconferencing was evaluated positively both by the teachers and the students in both countries. (Pihkala-Posti 2014c.) Authenticity and intercultural dialogues, in particular, were considered as an added value in the feedback comments:

Slovenians reacted differently to the things in the presentation than the Finns. I started to think more about the things myself, too, as Slovenians posed good questions. (A student of German in the university language centre, participating in videoconferencing with Slovenian students)



Picture 3. A screenshot of a Videoconference presentation of language centre students with Slovenian students

The third teaching intervention with *iVocalize* was conducted in an international pilot project in cooperation with *Deutsche Auslandsgesellschaft*. GFL learners from three countries, Finland, Estonia and Russia, worked together with upper secondary students in Germany on the topic of intercultural communication. The task was related to stereotypes of the nationalities presented in the project. After having received the task in a videoconference session, the students went into the streets in their towns and made interviews with people about their understandings of different nationalities. The results of their interviews, showing, among other things, common knowledge and stereotypes of the nationalities, were then presented to the others in the second videoconferencing session and discussed in order to understand the role of stereotypes in culture. The students also discussed negative stereotypes and answers revealing nearly no knowledge of the other nationalities. As a consequence, these challenging findings were discussed. These issues were reflected upon together to avoid staying on the level of stereotypes. The students began to interact spontaneously with each other by chatting synchronously about the interview results. (Cf. Pihkala-Posti 2014c.)



*Picture 4. A screenshot of a Wordpress blog of the intercultural project with upper secondary school students*

Feedback on the project was gathered in a Wordpress blog, e.g.

### **Student feedback:**

I liked the project. Interesting, but difficult.

Thanks for the project. The questions were interesting; we noticed that we knew little about Estonia and Finland. I will read and my friends also.

I find that it was a nice experience. We had lots of fun. I can say that I spoke German for the first time with other students.

### **Teacher feedback:**

The [online] project is an experience! The first time in my life! Hope that this experience will motivate me and my students to work more seriously and creatively with the language in the future.

Compared to the most common digital language learning environments, the videoconferencing platforms allow more versatile multimodal working methods, which can support communication and learning processes. One of the most serious deficiencies in most Internet applications is the lack of opportunities for



nonverbal communication, which however, is an important part of communicative and intercultural competence. In a videoconference with a webcam, this is possible to a limited degree, even though the nuances of this interaction cannot be compared to face-to-face communication. Also, the use of videos makes the passive observation of nonverbal matters possible. (Pihkala-Posti 2012b, c; 2014c; 2019 manuscript.)

## Conclusions: Step 1

The students' feedback on the use of different applications and platforms –was reflected in and combined with my own observations and in those cases where I was not the teacher of the group, but the interventionist researcher, with the feedback and observations of the actual teachers. It became rather clear that a relevant approach must include a pedagogically measured multifaceted combination of different types of applications and working styles in order to satisfy the different types of learners, support and challenge the whole language learning community in a versatile way (Allwright 2006; Kohonen et al. 2001; Pihkala-Posti 2013; Pihkala-Posti & Uusi-Mäkelä 2013; Pihkala-Posti 2014a, b, c; 2019 manuscript). Still, more variation and different approaches were added to meet these requirements even better (e.g. Schupmann 2015; Grein 2013; Coffield et al. 2004; Pihkala-Posti 2014c; Pihkala-Posti 2019 manuscript).

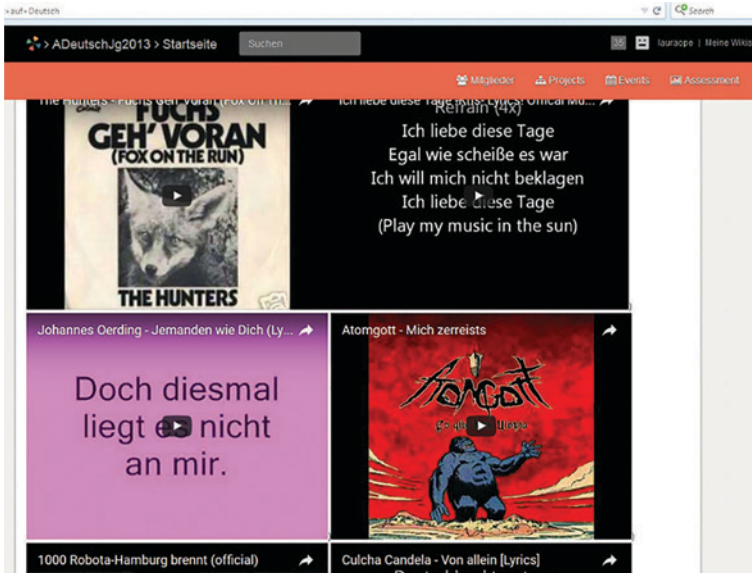
Based on the knowledge that I have acquired since my teacher education, action-based approaches seemed to be the most relevant ones in offering a holistic communication context, compared to, for example, the traditional textbook-oriented approach, but also with writing or speech applications used during the first part of my research project (Pihkala-Posti 2014c; Pihkala-Posti 2019 manuscript). Although praised as one of the most effective ways to enhance learning, the concepts such as *learning by doing and experiential learning* (Dewey 1915; Kolb 1984; Gee 2004; Aldrich 2005) have,

according to my experience, not managed to become the mainstream in schools (Pihkala-Posti 2015a; 2016; 2019 manuscript; Kallioniemi et al. 2015). They are occasionally used as an enriching method almost everywhere but seldom play a central role (Kallioniemi et al 2015). The practice of (oral) communication situations in a normal classroom environment still often remains at a relatively non-authentic level (Pihkala-Posti 2016). I mean hereby that far too often isolated phrases and sentences are produced, without any real possibility of proving their actual communicational relevance (Pihkala-Posti 2014 a, b, c; 2016; 2019 manuscript). This means that there are no experiential consequences, although e.g. advice was incorrect or misunderstood by the peer (Pihkala-Posti 2014a, b, c; 2016; 2019 manuscript). In real-life communication situations, the descriptions must be adequate in order to lead to a desired goal. New technology-supported action-oriented approaches seem to offer promising opportunities to create experiential and relatively authentic communication and action environments for the formal context (Pihkala-Posti 2014a, b, c; 2016; 2019 manuscript). *Minecraft* and *Berlin Kompass* which will be described in the next section are examples of such approaches. (Pihkala-Posti 2014a, b, c; 2015a, b; 2016; 2019 manuscript.)

## Step 2. Authenticity through informal, action-based and gamified approaches

A central goal of my research work has been to find ways to bring informal learning into the instructed language classroom. Informal learning has, in my understanding, to do with the experience of authenticity in the learning contexts where the language is used. (cf. Kohonen et al. 2001; Kaikkonen 2001; Pihkala-Posti 2014a, b, c; 2019 manuscript; Pihkala-Posti et al. 2014). For example, my students have often been given a task to search for music in the target language from *YouTube*, the type of music that is as close as possible to their own music tastes and then share it with the entire language class e.g. via

Wikispaces (Pihkala-Posti 2014c). The entire group then, respectfully, listened to the songs. The purpose of the task was to increase the tolerance of the students towards different (music) tastes, i.e. towards otherness and to support the target language becoming part of the learners' identities.



Picture 5. A screenshot of a student's favorite songs in the Wikispaces

Based on my experience as a teacher, researcher and textbook writer, I have come to the conclusion, over the years, that the most promising use of new technology enables students to practise communication as authentically as possible, not the traditional oral exercises (Pihkala-Posti 2014a, b; 2015a; 2016; 2019 manuscript). To create an action-based multimodal communication environment with an informal connection, the popular web game *Minecraft* (<https://minecraft.net/>) was introduced and used in my research project. *Minecraft* is currently a very popular action-based virtual world building game in informal contexts (around 70 million licenses sold). This type of virtual world can be built alone or together with other people. The *multiplayer mode*

enables many players to interact and communicate with each other within the same platform. Communication is possible while playing via the Minecraft chat or through an added speech application, e.g. *Skype* or *Teamspeak*. In the game blocks, cubes of different materials are used for building projects. They can be broken and placed to build different types of buildings and other objects. In addition to the blocks, there are other resources and features, such as plants and items that can be found and used in the game environment. (Pihkala-Posti & Uusi-Mäkelä 2013; Pihkala-Posti 2015a, b; 2019 manuscript; Uusi-Mäkelä 2015.)

A version of the game is available in many different languages. An essential part of playing the game is to follow or, rather, to participate in the discussions on the online player community platform (so-called *Minecraft wiki*). The Minecraft wiki has been created in all of the available languages in which the game's user-interface exists. The Education Edition of the game (*MinecraftEdu*) was developed, which I used for the purposes of my research. To date, the game has been marketed primarily to other subjects, such as science education, but the author (myself) and her research group (Pihkala-Posti & Uusi-Mäkelä 2013; Pihkala-Posti 2015a, b; 2019 manuscript; Uusi-Mäkelä 2015) were especially interested in the opportunities it would offer to expand the opportunities for action-based approaches in foreign language teaching.

The game was used by the author in upper secondary school in the teaching of German in an international project with the Finnish students playing with Russian students who were learning German. The task was to invent a mutual building project and execute it. Just a loose frame was given: they had to build something that had to do with culture. First, the students practised in small groups and then started the joint building project, which was to build a football arena for an international event. The students played on international teams, which prompted the need to use the target language while playing. In addition, the building collaboration offered a meaningful way to

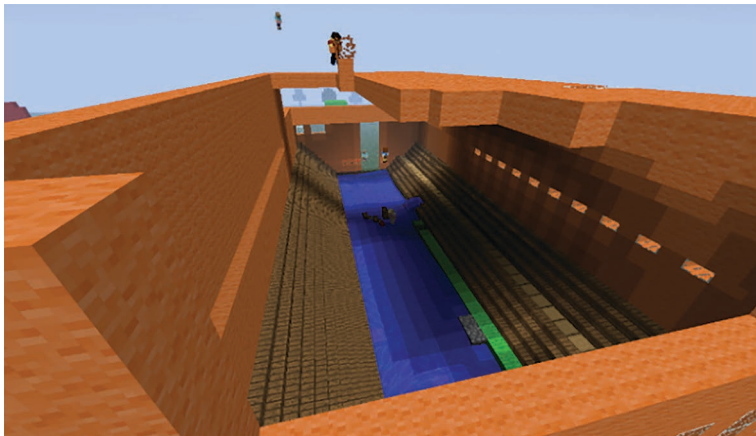
develop skills for intercultural dialogue. There was a clear need for these types of skills, as the student feedback revealed themes such as frustration with non-successful communication, for example.

It was an evident problem that the communication with the eastern neighbours was not fluent.

However, in the second intervention, the use of German was reasonably successful also within a Finnish teaching group when the students were playing together. Student groups built a dream school on the ruins of the old school destroyed by an earthquake. During that project, they embraced a variety of roles and acted quite autonomously from the very beginning. The teacher played the role of coach, supporting the use of the target language and helping with difficult expressions. (Pihkala-Posti 2014c; 2015a, b; 2019 manuscript.)



*Picture 6. A screenshot of the result of the building project in an upper secondary student group*



*Picture 7. A screenshot of the result of the international building project at upper secondary level*

According to the student feedback in the questionnaire answers, the authentic communication context and natural oral interaction opportunities, as well as the student collaboration were considered valuable:

I liked it very much; to work together, and to speak German.

I liked it very much. It was fun to play in the group of three people.

Also, the writing task afterwards, a report on the group work in the target language, revealed positive student experiences (Pihkala-Posti 2015a, 121):

I've learned new things with Minecraft and had fun. I [pupil's name removed] built with [pupil's name removed] a house, but we destroyed the house with lava and water. At that time, we were not so good at playing ... Luckily, [pupil's name removed] rescued our house. Then we lost the house and our bridge because we flew too far away from them. Then we built a new house and the house is now much nicer than the old house. We killed some monsters and animals.

I also made many mistakes because I never used to play *Minecraft* before. I find that to play *Minecraft* and to speak German with other people is now much easier. [A 16-year-old student of Finnish upper secondary school]

From the other point of view, the gaming was criticised by some pupils in both groups (approx. 30 % of those who gave feedback). They seemed to feel that playing games is entertainment and a leisure-time activity that is not part of school. They preferred textbook and grammar oriented traditional teaching (Pihkala-Posti 2015a, 120):

Not so good. I think we should first learn the textbook units and grammar, and then play *Minecraft*. I think that we just lose our lessons and don't learn so much. It was great, but I do not know if playing *Minecraft* in German was so instructive. [A 17-year-old student of Finnish upper secondary school]

The described approach seems meaningful, however, as some other students became highly motivated, especially because of this gaming possibility. For the most part, those who said they played video games in their free time also liked this approach. That could be interpreted as successful bridging between the informal and formal spheres. Indeed, a male upper secondary school student told me he was really motivated to speak German in this *Minecraft* building project for the first time in his seven years of language learning (Pihkala-Posti 2015a, b; 2019 manuscript). Teaching approaches that activate boys are on demand, because currently in Finland boys are becoming marginalised alarmingly often (2019 manuscript). On the other hand, the *Minecraft* sessions also motivated at least some successful girls who chiefly appreciated traditional teaching methods. They found that they learned and explored new things in the game environment, and enjoyed the freedom and authenticity of the communication. To benefit from this type of informal gaming in the formal context, I

suggest integrating target language learning and communication tasks in playing the game (didactic suggestions in detail, see Pihkala-Posti 2015a, b). (Pihkala-Posti 2015a, b; 2019 manuscript.)

## Berlin Kompass

The *Minecraft* results were promising, but a further variation of approaches was pursued to develop the interaction skills of language learners as diversely as possible (Pihkala-Posti 2014a, b, c; 2015a; 2016; 2019 manuscript). I had become acquainted with a few computer scientists of our university and managed to get them involved in a development project on digital language learning environments. The project was called *Social Media, Games and Interactive Applications in the Foreign Language Classroom* and it was part of a larger project, *Active Learning Spaces*, financed by the Finnish Funding Agency for Innovation (TEKES). The *Berlin Kompass* application project<sup>1</sup> was based on my pedagogical idea of creating a multimodal, interactive, collaborative and experiential virtual learning environment for oral communication. Contrary to *Minecraft*, the multimodal application *Berlin Kompass* was originally designed for formal learning purposes, but it makes use of embodied and gamified learning experiences. The environment of a virtual target culture is enriched with multimodal communication support and gameful elements<sup>2</sup> (Deterding et al. 2011; Oksanen 2014; Pihkala-Posti 2014a, b, c, 2016; Pihkala-Posti et al. 2014; Kallioniemi et al. 2015).

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<sup>1</sup> *Berlin Kompass development team*: Laura Pihkala-Posti, Pekka Kallioniemi, Jaakko Hakulinen, Pentti Hietala, Mikael Uusi-Mäkelä, Markku Turunen, Tuuli Keskinen, Sanna Kangas, Jussi Okkonen, Roope Raisamo.

<sup>2</sup> Gamification, is defined as the use of game elements and game thinking in non-game environments in primarily non-entertaining contexts (Deterding et al. 2011; Betts 2013; Kallioniemi et al. 2015; Pihkala-Posti 2015a). The goal can among other things be to enhance the level of engagement for learning or as in our case, to diminish the fear of speaking a foreign language by distracting the attention to other matters.



With this multimodal language learning application, players make a virtual trip to the metropolis of Berlin. The *Kinect* device is used by the body and gestures in order to look around and to move in the 360 degree city panoramas. The application is used for technology mediated simultaneous interaction, negotiation and collaboration between two users, who are working in two separate spaces and use headsets for communication. The communication task is about finding the way to different places in Berlin. One (“tourist”) asks for a route to famous attractions and the other (“guide”) describes the optimal route. They both use the visual (and aural) information that can be found in the panoramic views. (Pihkala-Posti et al. 2014; Kallioniemi et al. 2014; 2015.)



Picture 8. A user trying to find the correct route in Berlin (*Kompass*)  
Photo taken by the author

The users of *Berlin Kompass* can access multimodal support (text plus speech synthesizer voice synchronously) for vocabulary and phrases by showing the relevant objects literally by hand; these are “hotspots” in the cityscape. The “tourist” can move forward along the route by interacting with the “guide”. Primary communication involves interacting and collaborating with the other user, i.e. describing the (visual) environment as well as asking for and giving instructions and solving possible problems. The tourist moves forward in the panoramas by actually walking towards the correct (assumed) direction (embodied experience). If the choice is correct, both users land at the next crossing. When there are misunderstandings, the tourist ends up at a dead end where relevant communication needs to take place in order to get out and on the correct route again. The realistic panoramic images are intended to create a motivating sense of immersion. The purpose of the orientation task is to train oral skills to negotiate, engage in dialogue, collaborate and solve problems. To get ahead on the route, most learners learn quickly to clarify the instructions and questions until they reach their desired goal. (Pihkala-Posti et al. 2014; Kallioniemi et al. 2013; 2014; 2015; Pihkala-Posti 2014a, b, c; 2016; 2019 manuscript.)

Our pilot studies at our university’s language centre and in the upper secondary school included a total of ~250 people. The observations during the pilots revealed that the system offers language learners of different levels an individual freedom to practise their oral communication and interaction skills in the target language. Considerable variation was found in the strategies used to proceed along the route, i.e. in the communication and description strategies, which enabled the users to reach the goal (Pihkala-Posti 2014a, b, c; 2016; 2019 manuscript; Pihkala-Posti et al. 2014; Kallioniemi et al. 2015). The information offered by the panoramic environment itself and the hotspots with vocabulary and phraseological help can be freely brought into use or disregarded. Some users actually got along with their language skills, while others wanted to learn something

new from the hotspots even if their language skills would have been sufficient to fulfil the task. Others, nevertheless, needed more scaffolding to find their destination. Student feedback confirms that the pedagogical idea of Berlin Kompass actually works; its central pedagogical concepts *agency*, *authenticity*, *motivation*, *dialogue*, *collaboration*, *learning by doing* and *scaffolding* are commented on in the student feedback (Pihkala-Posti et al. 2014; Pihkala-Posti 2016; Kallioniemi et al. 2015):

You're able to look around yourself and you can look for different hints about what things are called, for example the yellow.

Using language in an authentic situation when the other user is 'present in the same image' and the cityscape is realistic.

You should use the language fast and as if you were really in a situation where you need guidance.

One must interact in the foreign language in order to guide the other user. Necessity motivates interaction, or else the game does not progress.

The only thing that's going to help you succeed is collaboration.

The best thing was that you do something besides sitting still.

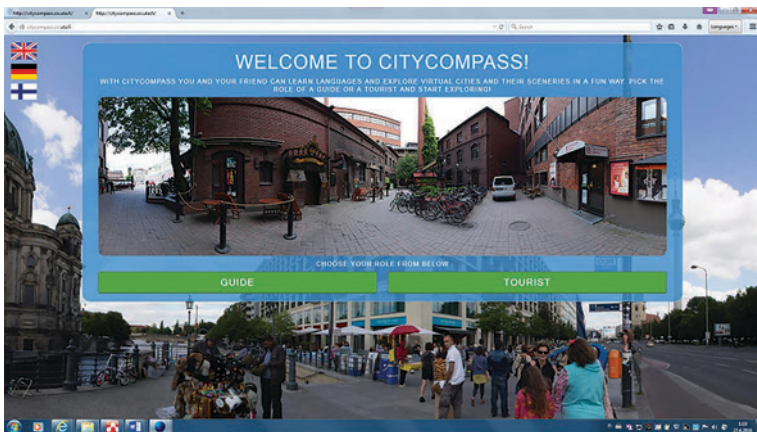
One was able to kind of work in the real language and practice it.

One can learn the language in quite a different way when using the programme. You discover that you may still need some help and it is useful.

It is fun to interact with the application with your body and the positive thing about it is that you also learn German at the same time.

As the next step, a web-interface, called *CityCompass*, was created with the same idea. It enables a whole student group to use the application at the same time, which naturally facilitates its use in normal classroom work without the need for a transition to a separate workstation, in this case, the virtual space. The disadvantage

compared to the original projected, larger view of the city is that the sense of immersion may decrease when working with a small screen and because embodied interaction (with *Kinect*) is not included. However, the use of the computer or tablet version of the application, *City Compass*, also works when one wishes to create an authentic communication context for learners. Of particular interest have been the communication and road advisory encounters that were realised between different countries. Intercultural wayfinding situations were carried out on the web interface, which means e.g. that Indian school students were advised by a Finn, or Finnish students by an Indian person (see also Kallioniemi 2018; Sharma 2018). According to my observations of the Finnish students, they also took the computer screen communication situation seriously and tried their best. In this case, intercultural communication is involved in the adventure game in quite an interesting way and brings additional excitement and challenges – as well as learning opportunities.



*Picture 9. A screenshot of the user interface of the CityCompass version of the learning concept*

## Conclusion: Step 2

On the basis of the interventions, both game approaches described in this chapter seem to have the capacity to bridge informal and formal learning. According to my observations and student feedback, this bridge refers to the fact that these types of games seem to dissolve factors occurring in the normal class interaction such as social pressure and inhibition caused by a self-criticism (Finns) that often restricts target language communication in the language classroom. In game situations, the attention is drawn to the gaming itself, the adventure and its excitement. The situation becomes focused on the capability to fulfil the task and the question how. In this case, the concern of individual words and grammar issues moves to the side, and this gives a new way of exercising oral language skills. The word and the phrase hints offered by the *Berlin Kompass* environment support communication and can help to prevent the linguistic ‘jamming’. *Minecraft*, in turn, provides a creative environment for co-operation in the target language, as well as a rich array of supportive resources and supplementary materials that other users have created and offer in different languages, e.g. *Minecraft Wikis*, as well as videos of the construction projects on *YouTube* with oral comments. In addition, it offers contexts where word and expression repertoire of the target language can be systematically expanded and the knowledge of the use of grammatical structures can be applied in holistic communication contexts. (Pihkala-Posti 2014a, b, c; 2015a, b; 2015a, b; 2016, manuscript 2019.)

## Discussion

Implementing written, spoken and embodied communication with Internet, interactive applications and games, together with Internet applications (Pihkala-Posti 2014c; manuscript 2019) have been used

to support development of (intercultural) communication skills in addition to all the possibilities a normal classroom and face-to-face-encounters offer through international projects, visitors, etc. (Pihkala-Posti 2012a, b; 2014c; 2015a, b; 2016; manuscript 2019). Technology offers other possibilities for intercultural exchange, too, especially in times when finding funding to travel in international projects is difficult. In addition, a central question has been to support different types of learners in new ways. Holistic approaches (including embodied approaches) are becoming more popular, as the meaning of the corporeality of the perception and position of the meanings of signs in the embodied experiences of the learner have become more widely understood (e.g. Gee 2004; Pihkala-Posti 2015; Kallioniemi et al. 2015; Pihkala-Posti manuscript 2019). A separation of the language use from the learner as a whole e.g. to be just a written or spoken text is to simplify the picture in a counterproductive way (cf. Kohonen et al. 2001; Rauhala 1983; Merleau-Ponty 1974/1966; Kallioniemi et al. 2015; Pihkala-Posti 2019 manuscript). *YouTube*, *Berlin Kompass* and *Minecraft* are applications, which offer embodied, i.e. holistic experiences, either concretely by moving the body as with *Berlin Kompass*, or by avatar and with the mouse as with *Minecraft*, and “brain-mediated” with *YouTube*, which means the same areas can be activated in the brain while following actions on the video that would be activated when physically acting in the situation (cf. Kok & de Bruin 2017; Pihkala-Posti 2014c; 2015a, b; 2016; 2019 manuscript).

Results from the above diverse research sessions using interactive web applications offer potential in language learning, especially for practising oral and intercultural communication (Pihkala-Posti 2014c; 2015a, b; 2016; 2019 manuscript). When used in a pedagogically meaningful way, they offer opportunities for *dialogue*, *collaboration* and *sharing* and can support the building of an *enthusiastic learning atmosphere* and *community*. *Learner agency* and a *positive language learner identity* can be encouraged. Moreover, *action-based learning* and *degree of authentic communication* can be increased, not to

mention relevant *scaffolding*. Multi-faceted, pedagogically sound approaches offering different modality and media combinations seem to motivate and challenge learners of different types or with different cognitive styles, but also the entire learning community (Pihkala-Posti 2019 manuscript). Using various formats provides different types of learners with feeling of success. All of these applications can contribute to the development of communication and action competence skills that serve the ultimate goal, i.e. *fruitful intercultural encounters*. (Pihkala-Posti 2014a, c; 2015a, b; 2016; 2019 manuscript.)

Different stages on the road to authentic communication can be supported by the use of different applications (Pihkala-Posti 2014c; 2019 manuscript). *Voxopop* and *Voicethread* with options for asynchronous communication can prepare language learners for subsequent synchronous communication, dialogue or discussion. To be able to argue accurately is known to be a challenge in a foreign language. With these applications, for example, students can practise their argumentation skills in peace (cf. Pihkala-Posti 2013; 2014c; 2019 manuscript). The language learners have an opportunity to reflect on their reactions, to plan what they want to say and how. Recordings can be repeated as many times as necessary before saving the desired version fit to be published. This also provides a shy or slower person with a discrete chance to practise oral interaction. For the viewer, listener or discussion community, *Voicethread* serves as preparation for synchronous presentations enabling comments and discussion pertaining to the embedded presentation. On a videoconference platform, the same may then be realized synchronously. On these platforms, e.g. a videoconference platform or in the *Minecraft* game discussion, dialogues, etc. can be conducted autonomously also, without the guidance of a teacher. In *Berlin Kompass* this is the default approach. (Cf. Pihkala-Posti 2019 manuscript.)

Among the various forms of work with these applications, the above-mentioned aspects were meant to be emphasised in

different ways: Voxopop was primarily used to strengthen the skills for oral collaboration and dialogue, while autonomy, agency, collaboration and dialogue were the focus when using Voicethread. With Videoconferencing, in turn, dialogue and authenticity of communication were concurrently emphasized. In addition to learner creativity, Minecraft supported autonomy, agency, collaboration, the emergence of action and authenticity, while Berlin Kompass combined all these different aspects and prepared relevantly for authentic communication and action situations, for example, real life situations in the street. As regards intercultural exchange, these platforms enable important dimensions that are not included in the traditional classroom based approaches. (Cf. Pihkala-Posti 2019 manuscript.)

A technologically-centred society changes human interaction and learning not just in a positive way. Technology mediated communication can e.g. threaten the capability of humans to interpret nonverbal communication. As Lehtovaara (2001, 152) states, there are risks with “a calculative and technologically oriented mindset”. I am not trying to minimise the risks that societal change has clearly engendered. My intention is to try to find new pedagogically meaningful opportunities for learning that are not calculative but advance the opportunities for dialogue, co-operation, agency and authenticity in the technologised society. In this way, technology is not a ‘big evil’, but opens up positive, even democratic, opportunities. Much research is still needed to show how multimodal action-based approaches influence learning motivation and the outcomes in the long term. (Pihkala-Posti 2014c; 2019 manuscript.)

During this long research journey, I have learned to understand more and more deeply in which ways students are individuals, representing their own micro-cultures, and all seeing the world in quite different ways. To learn to encounter foreignness and otherness in a constructive way, and to build their identities, students need various modes of support for their journey of growing up. This is a real



challenge and at the same time, a huge opportunity for education. The learning solutions presented here are elements which can be brought into connection with a meaningful pedagogical whole. However, without the pedagogical whole, they are not enough.

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I wrote this chapter as a university instructor in foreign language education at the same institution where I had studied to be a language teacher. I continued spreading the thoughts, the sprouts of which had emerged around 25 years ago and which I had developed, deepened and modified through the years as a reflective teacher and researcher. Thanks to the excellent teachers and the inspiring atmosphere at our university, I have almost been forced to go through these circles of trying to learn and understand more.

The atmosphere among our teacher education at the University of Tampere was enthusiastic, passionate and innovative and we focused on reflection and critical thinking as well as the idea of teacher as researcher. Streams that radically changed the role of the teacher in learning processes played a crucial role in teaching, development and research work in teacher education. To mention a few: A holistic idea of the human being (e.g. Rauhala 1983), the significance of continental cognitive didactics (e.g. Aebli 1991) as well as action orientation and experiential approaches were emphasized, especially by Jorma Lehtovaara. The central meaning of intercultural communication and authentic language learning was introduced in the Finnish context first by Pauli Kaikkonen. As our main instructor of didactics, he had a key role in opening his student teachers' eyes to this essential perspective. Co-operative and reflection-based learning was introduced and applied to the Finnish context first by Professor Viljo Kohonen. Pirjo Pihlainen, who also taught us didactics, focused on action-based and creative foreign language teaching. My supervising teachers at the Tampere teacher training school, Tuula Pantzar and Kristiina Pekkanen played an extremely important role, too. The "second important theoretical reflection circle" became possible during my master's studies in educational sciences starting in the year 2008. My earlier instructor of didactics, now professor in foreign language education, Pauli Kaikkonen, with his deepened concepts of

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## **Part III**

### **Teacher Education in Mathematics and Science**



# Subject teacher education as a prisoner of its own tradition

## Experiments in mathematics and science to break out of the routine

*Harry Silfverberg*

### Introduction

In Finland, mathematics, physics, chemistry and information technology are usually referred to as *mathematical subjects*. This chapter introduces four reforms concerning the subject teacher education programmes in the mathematical subjects carried out in the School of Education at the University of Tampere during the last two decades. Each of these reforms in their own way challenged the traditional ideas of what type of structure the subject teacher education programme should and could have, what contents it should have, and which institutions should be responsible for the

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administration of each sector of the education. In this chapter, my aim is to examine, as objectively as possible, the motives leading to the onset of these development projects, the basic ideas behind the projects and the life course of each project. Some of the projects are still ongoing, some of them have ended and others will end soon. However, one must remember that although projects end, many of their innovative background ideas continue their lives in some other form in the practices of the institution. As far as the completed projects are concerned, we also examine the reasons leading to the end of the projects despite having had quite a general agreement on the value and innovativeness of the experiments.

The contents of the curriculum for subject teacher education are checked and modified at intervals of two or three years, the purpose of which is to renew the entire curriculum of the teacher education unit. Nevertheless, from earlier curricula, one can notice that the basic structure of the curriculum has remained almost unchanged for a surprisingly long time. Subject teacher education has a strong tradition that seems to resist changes that may be too radical but perhaps changes that would be necessary and perhaps even *de rigueur*. For a long time, slightly more than one third of the pedagogic studies (60 ETCS) has consisted of basic studies in (general) education, about one third teaching practice, and the rest, i.e. slightly less than one third, consists of subject didactic studies. However, several different issues have created pressure to change subject teacher education – even quite radically – and especially in mathematical subjects. The pressure has targeted both reforming the structures of subject teacher education programmes and developing the contents of individual courses within the programme. The pressures for change have been caused, among other things, by the following issues:

*First*, throughout the 1990s, we were unable to obtain a sufficient number of students for the teacher training programmes in the mathematical subjects as they were recruited from our own university only. Each year, just a few students completed pedagogical studies to

qualify as subject teachers of mathematics, physics or chemistry. The same trend was also evident in other Finnish universities. Together with the department of mathematics, we decided that we needed to make the recruitment of prospective teachers in mathematics, physics and chemistry more attractive, one way or another. At the same time, there was an imbalance in the study modules for the mathematical subjects offered at the Tampere University of Technology (TUT) and the University of Tampere (UT). The students of mathematical subjects in UT completed all of their studies in physics and chemistry in TUT, the students at TUT, on the other hand, were only offered a few courses at UT. The negotiations between the universities concluded in an agreement which guaranteed that the students at TUT had the possibility to complete pedagogical studies in mathematical subjects at UT within an agreed quota.

*Second*, since the end of the 1990s, the comprehensive schools with both primary and lower secondary schools in them became increasingly common in Finland (cf. Rajakaltio 2011). According to Statistics Finland in 2018 a total of 2,234 comprehensive schools were in operation, 20 per cent of which were joint schools comprising grades 1 to 9. The comprehensive schools, comprising grades 1–9, are supervised by the same administration, and the core curriculum has been planned to ensure the students' transition from the primary school to the lower secondary school goes as smoothly as possible. One of the objectives of the unification is to enable as many teachers as possible to teach at both the primary and lower secondary levels, according to their expertise. The problem the Finnish teacher education system encounters here is the fact that our teacher education programmes do not usually qualify student teachers to teach in the entire comprehensive school. Primary teacher education programme qualifies graduates to work only as class teachers at the grades 1 through 6 and subject teacher education programmes qualify to teach at the grades 7 through 12 those subjects that the teacher has made 60 ECTS points or more. The purpose of the AIKAMA programme,



a new type of teacher education programme developed in the faculty, was to meet this challenge especially.

*Third*, according to several studies (e.g. Juuti et al. 2010; Merenluoto et al. 2003; Pehkonen 2011), the prospective primary school teachers' knowledge of mathematics during that time was insufficient. The weak competence in mathematics led to a situation where too few students specialized in mathematics. By developing the Didactical Mathematics study module (25 ECTS), together with the department of the mathematics at the University of Tampere, we tried to encourage prospective primary school teachers to choose mathematics as a minor subject in their degree. We also encouraged them to reconsider their attitudes according to which university level mathematics is insuperably difficult for them.

*Fourth*, we also looked for a satisfactory solution to the problem of the main subject: At that time, the major subject in master's degrees at Finnish universities could (and still can), in fact, be either mathematics or educational sciences but not mathematics education. A solution to this problem was sought from two directions: First, we proposed that the faculty of education allow stronger emphasis on mathematics education in the optional part of the curricula in B.Ed. and M.Ed. degrees. The main subject would still be educational sciences. This gradual process to strengthen the status of mathematics education and research therein in our faculty eventually led to the establishment of the above-mentioned AIKAMA teacher education programme. The major subject of the nationally unique programme was education, and the compulsory minor subject was mathematics.

After the AIKAMA programme had been carried out for a few years interest among a group of Nordic researchers of mathematics education sparked. The group decided to start, as Nordic cooperation, a Master of Arts programme with the didactics of mathematics as its main subject. The Nordic Minister Council funded the planning of the project and in the year 2010 the Joint Nordic Master Programme on Didactics of Mathematics, NORDIMA was established in cooperation

with a consortium of five universities from Norway, Denmark, and Finland. Since the beginning of the planning of the programme, the teacher education unit of the Faculty of Education at the University of Tampere was one of the partners in the consortium. The Nordic Graduate School of Mathematics Education (NoGSME) served as a natural channel to further studies in the research of mathematics education.

## Pedagogical studies for engineering students

Normally, the pedagogical studies in the Faculty of Education are organized in cooperation with the faculties of the University of Tampere, i.e. the faculties provide the major subject studies for secondary (and tertiary level) teachers. In addition to the faculties at the University of Tampere, the Tampere University of Technology, too, has offered an option (for about 20 years now) to engineering students to complete pedagogical studies as a minor subject in their MSc degree. The students' teaching practice is carried out at the University of Tampere teacher training school and in several other secondary and tertiary level institutions in the Tampere region, in cooperation with the Faculty of Education of the University of Tampere. The students have mathematics, physics, chemistry or computer science as their major subject in the Master of Science in Technology degree, which they study at the Tampere University of Technology. To get the qualification for the teacher's profession, they also have to include in their degree 60 ECTS credits of pedagogical studies offered by the Faculty of Education at the University of Tampere. To be attractive on the labour market, most students have one or more extra subject from the above-mentioned mathematical subjects as their minor subject(s). The rest of the degree consists of studies in technology. In recent years, the student quota for this programme has been set at 25.

So far, there has not been any formal evaluation of the programme, but the students compile a portfolio where they evaluate their professional growth during the pedagogical studies. The portfolios give valuable information on the students' professional growth and on their views concerning the parts of the programme which function well or perhaps not so well. On the basis of portfolios, almost all students have been considerably satisfied with the programme. No doubt, cooperation between the partners is the cornerstone of the success of the programme. On the one hand, the University of Tampere has developed the pedagogical studies module to meet the needs of engineering students. On the other hand, the Tampere University of Technology has developed the Master of Science in Technology degree to fulfil the needs of both the degree in engineering and the teaching qualification in mathematical subjects.

Most importantly, both parties of the programme have considered the cooperation advantageous to themselves. The programme has been popular and, consequently, it has been possible to recruit gifted students to study the STEM subjects, i.e. science, technology, engineering and mathematics. Graduates have been well employed. Educational institutions have willingly employed people who, in addition to the subject knowledge of pure mathematics and science, have the knowledge to apply these subjects in engineer sciences and other fields in society. The programme is unique in Finland.

Parallel to the traditional view that school subjects are taught separately, much attention has currently been given to the view that emphasises closer integration within subjects. Discussion about the STEM or SMET subjects (science, mathematics, engineering, technology) (Stohlmann, Moore & Roehrig 2012) began in the United States, but it is also widely spreading in the European discourses of subject teaching nowadays. The intention of this perspective is to connect science and mathematics, especially within the frame of engineering and technology. Looking back, from the beginning of

the project we tried to integrate SMETsubjects in teacher education, even though integration was not discussed to the extent it is discussed nowadays.

## Establishment of the AIKAMA master programme and the Joint Nordic Master Programme in Didactics of Mathematics, NORDIMA

Having mathematics as a compulsory minor subject and focusing studies in the major subject on mathematics education, the AIKAMA subject teacher's master programme started in 2002 and finished in 2016. From the very beginning, it attempted to meet the needs of society and teachers specialising in teaching at comprehensive schools. The objective of this programme was not only to provide students with expertise in their own subjects and teaching but also to work as educational specialists in comprehensive schools.

In the programme, the main subject was education, and the students who graduated from it received a master's degree in education. The studies in mathematics required of the subject teacher in the comprehensive school formed the compulsory minor subject in the students' degree. Depending on the students' choice of minor subject(s) and those offered in the master's degrees, the programme rendered qualifications to work either as a primary school teacher or as a subject teacher in the comprehensive school, or even in upper secondary school.

The main advantages we expected from this type of programme were the following:

1. Emphasis is on the entire comprehensive school;
2. Appropriately selected advanced studies in the main subject (education) bring added value to the pedagogical studies required of subject teachers;

3. The duration of the teacher education (usually about five years) gives extra time to the students to develop their identity as teachers as compared to the established way of carrying out the pedagogical studies for subject teachers in one or two years;
4. The programme application process is economic as it is arranged in connection with the already existing application process in primary school teacher education.
5. The programme makes it possible to get double qualification, i.e. the qualification of a primary school teacher and that of a subject teacher. (cf. also Kohonen 2005).

During the ten years when new students were accepted into to the programme, it became very popular. In the last few years, when it was still possible to apply to the programme, the number of applicants exceeded the admission quota by more than 15 times. One doctoral dissertation (Portaankorva-Koivisto 2010) was completed in association with the project. Portaankorva-Koivisto conducted a narrative study on the AIKAMA students' professional growth processes in becoming mathematics teachers. In her thesis for Master of Education, Pääkkönen (2012) carried out the overall evaluation of the programme. According to Pääkkönen, the teachers who had graduated from the AIKAMA programme and already worked as teachers were mainly satisfied with the education in the AIKAMA programme. However, some teachers had experienced that their colleagues had found it strange that the mathematics teachers had graduated as Masters of Education instead of Masters of Science.

The Joint Nordic Master Programme in Didactics of Mathematics, NORDIMA, was established in the Faculty of Education in the spring of 2010 in cooperation with a consortium of five partner universities from three Nordic countries: Norway, Denmark, and Finland. The partners in the project include the University of Agder, Kristiansand; the Danish School of Education; Aarhus University, Campus København; the University of Copenhagen, København;

Åbo Akademi University, Vasa; and the University of Tampere, Tampere. In the beginning, the programme was partly funded by the Nordic Council of Ministers and the agreement was made for the years 2010–2016. The University of Agder in Kristiansand, Norway is the main partner of the University of Tampere. The first year of the studies is carried out in the University of Tampere, the second year in the University of Agder. If the first year of studies is carried out in Agder and the second in Tampere, the studies taken at the University of Tampere are determined according to a personal study plan.

The purpose of the programme was to gain the following benefits:

1. The Nordic master programme in the didactics of mathematics will through the use of combined expertise and opportunities create Nordic synergy in an area of research where most of the environments are small and vulnerable.
2. The Nordic master programme in the didactics of mathematics will be built on high-quality research and run by teachers and supervisors who are active researchers in mathematics education.
3. A common Nordic solution for a master programme will offer the entire Nordic educational system with experts in mathematics education and will be unique in the Nordic countries.

The programme consisted of 120 ECTS. The bulk of the courses consisted of the didactics of mathematics, but to some extent other types of courses could be included, for example, in mathematics or science education, depending on the previous studies of the individual student. In any case, the master's degree rendered qualifications in the area of mathematics education. It was suggested that some courses be core courses and compulsory, but most courses were optional. The board of the Nordic master's programme was responsible for accepting students, coordinating the application process, maintaining the quality of the programme, ensuring that

individual students did not take overlapping courses and that the combination of courses guaranteed a high-quality master's degree.

The purpose of the master's programme was to

- facilitate Nordic and European labour market mobility,
- make postgraduate studies possible both in Finnish and Nordic graduate schools (NoGSME) within this field,
- improve competitiveness in the labour market, and
- offer excellent basic education, for example, to the university-level posts at the teacher training schools or in the departments of teacher education.

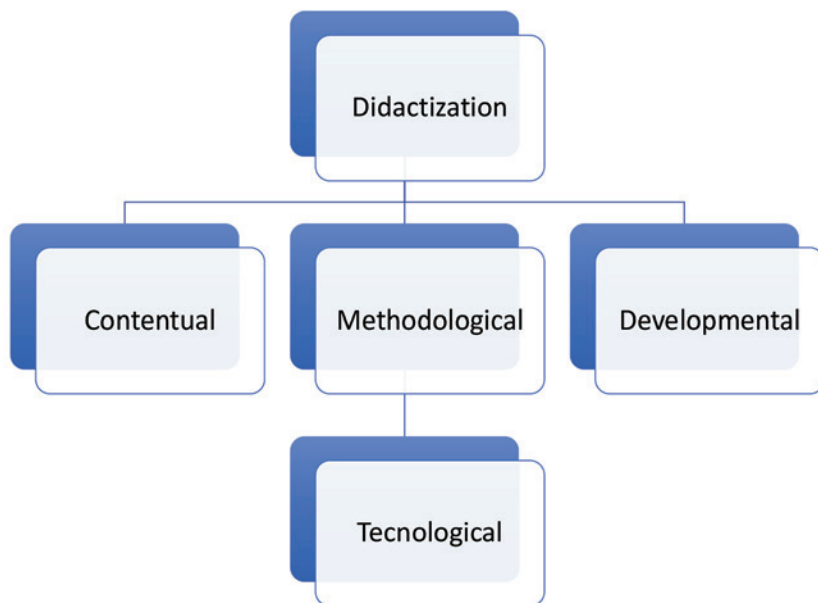
Completing the NORDIMA master's programme, students obtained a double degree. This meant that they received a diploma from each university – Master of Education from the University of Tampere and Master of Science in the Didactics of Mathematics from the University of Agder.

## Development of the Didactic Mathematics study module

When the Didactic Mathematics study module was executed in its most extensive form (25 ECTS), it consisted of five university-level mathematics courses. The courses addressed geometry, algebra and number theory, analysis, and mathematical and pedagogical problem solving. The contents of the module were planned in the cooperation with the departments of teacher education and mathematics. The number of participants in the courses varied between 20–45. Most of the students were prospective teachers who will teach at the primary or secondary level in comprehensive education.

The basic problem in the developing process of Didactic Mathematics was to characterise what is meant by the so-called

*didactization* of university-level mathematics courses. Our attempt to understand the aims and demands of the didactization in the context of university pedagogy guided us to identify four parallel components of didactization: (1) *contentual didactization*, (2) *technological didactization*, (3) *methodological didactization*, and (4) *developmental didactization*. (Poranen & Silfverberg 2011.)



*Figure 1. The components of the didactization process*

Contentual didactization closely corresponds what Ball and Bass (2000; 2003) have called mathematics for teaching. It describes the mathematical content, the fact that it is important for teachers to successfully manage the mathematical issues that come up in their professional practice in school. By the term, we have attempted to emphasise the links between the contents of school mathematics and university mathematics, and clarify some conceptual continuums in the curriculum which begin from the elementary or secondary mathematics and continue to the basic courses of the university



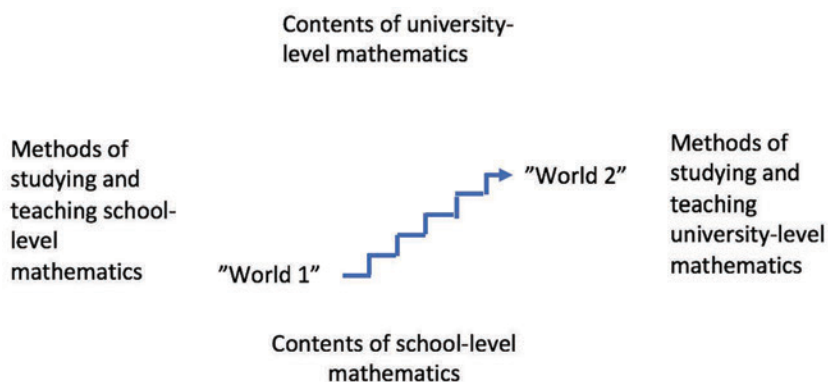
mathematics and perhaps even further. In the didactization process of the courses, we especially utilised the ideas presented by Ball & Bass (2000), Abramovich & Brouwer (2003) and Stylianides & Stylianides (2010). We also used the so-called *didactical proficiency examinations*, in addition to more traditional evaluation methods, where students in small groups at the school level were asked to find ways to introduce some of the theme(s) that we had had in our university-level course, e.g. the group concept, Euler totient function, etc. In those tasks, in particular, the students were expected to take into account both the *mathematical and pedagogical spaces* described in Stylianides & Stylianides (2010).

By methodological didactization, we mean attempts to use in the university level courses teaching methods that strengthen the prospective teachers' professional skills, as much as possible, to apply similar approaches in teaching school mathematics, especially collaborative working and inquiry-based learning. During the courses, we discussed, for instance, what concepts such as mathematical truth, argumentation, proof and defining may mean at different school levels for a teacher and for a student. We also encouraged our students to reflect on how their own mathematical thinking was changing or was expected to change at the university and how they thought they could develop their own students' mathematical thinking at school. Technological didactization can be considered a special case in methodological didactization. By the frequent use of technological tools like symbolic calculators, Geogebra, Maples, applications in Internet, etc. and through discussions on the pedagogical advantages and disadvantages of the use of these tools we made an effort to broaden prospective teachers' pedagogical content knowledge (PCK) towards more inclusive techno-pedagogical content knowledge (TPACK) (Mishra & Koehler 2006).

Developmental didactization refers to attempts to bring out historical developments which some of the concepts addressed during the course have had in the progress of mathematics as a

science. Secondly, we examined psychological learning trajectories for some basic mathematical concepts beginning from the early and naïve conceptions which preschool or primary school teachers may use in their teaching to more exact concepts introduced in lower and upper secondary school mathematics and, finally, becoming ennobled to precisely defined concepts in university mathematics. The development of number sense and number concept, the development of geometrical thinking and pupils' common interpretations of the nature of the basic geometrical concepts for instance on different van Hiele levels, the different conceptions of the *limit*, *derivative* and *integral* concepts, etc. all offer good examples if this type of analysis.

One necessity we especially have to take into account is that after passing the pedagogically oriented courses in Didactic Mathematics, students will continue to study the 'normal, non-didactized' courses in university mathematics. That forms a kind of counter force to the goal of the didactization process. Students have two types of challenges. In the short run, they will continue their studies with the more demanding courses in university mathematics and ought to be well prepared to enter into a more demanding level in their mathematical thinking. However, in the longer run, they will also qualify as mathematics teachers in the primary or secondary school.



*Figure 2. The essence of didactization*

Therefore, in the more demanding courses, students should learn to put themselves in schoolchildren's position and, from this perspective consider their pedagogical choices and their own learning processes in different mathematical tasks. Figure 2 illustrates the steps we want our students to be gradually able to climb.

Selecting suitable mathematical tasks that help in didactizing the courses and teaching has a central role in the process. Stylianides & Stylianides (2010) call such tasks *pedagogy-related mathematics tasks* (P-R mathematics tasks). These tasks are intended to provoke activity that can support the development of mathematical knowledge for teaching (Mft) as Ball and Bass (2000; 2003) call such mathematical knowledge. Also, the essential part of our development process of Didactic Mathematics has been producing P-R mathematics tasks which emphasise the learning trajectories from elementary-level to university-level mathematics and strengthen students' learning to adopt skills such as abstraction, defining and argumentation. Examples of the pedagogy-related (P-R) mathematical tasks used in our courses can be found, for instance, in the articles written by Poranen and Haukkanen (2012), Poranen and Silfverberg (2011), Silfverberg and Joutsenlahti (2014) and Silfverberg (2004; 2012).

The development of the didactization of courses was based on the continual discussions between teachers, the feedback gathered from students and on the reported experiences from the projects that have had a similar type of didactization attempts guiding their actions. As an outcome of the development project, we have renewed the curricula and the teaching approaches of the courses to include better-built bridges between school and university mathematics and between basic and more advanced university mathematics.

## On the life course of the projects and the conclusions

With the projects mentioned above, we challenged many traditions in subject teacher education and many common beliefs of how these studies should be organised. The challenged traditions were, among other things, the following:

1. The subject teacher education is based on the clear division of labour of the faculties where the so-called subject faculty takes care of the teaching of the subject to be taught and the faculty of education takes care of the pedagogic studies.
2. The main subject in the future master's degree for teaching mathematics is mathematics, physics or chemistry, and correspondingly the main subject of the primary school teachers' degree is educational science.
3. The studies of prospective teachers of mathematics lead to a Master of Philosophy degree.

The teacher education programme offered to engineering students retains structures 1 and 2 but leads to the Master of Science (Technology) degree instead of Master of Philosophy degree (3). The AIKAMA education challenged especially the 2<sup>nd</sup> tradition. One could qualify as a mathematics teacher with education as a main subject also. The development of the Didactic Mathematics study module required a shift in focus, from the traditional point of view of storing the division of labour to more intensive cooperation between the departments. In all of the projects described, we, of course, made sure that they were in accordance with valid legislation. However, over the course of the years, we noticed that many parties outside the projects were still strongly committed to traditions 1–3 in their thinking and consequently reacted to our solutions quite critically.

After the growing pains, the teacher education programme for engineering students has proven to be a vital and socially

important part of the local and national supply of teacher education possibilities. When the programme began, its attractiveness was doubted. Nevertheless, in the last few years, the student quota reserved for it has become full without problems. The programme has a clear profile, and it produces teachers who are well employed in the teaching profession. The integration of the universities and along with it, their intensifying cooperation will make this teacher education programme an even more natural of the teacher education options. Then, it is perhaps possible, better than before, also to utilise the synergic advantages with the teacher training in vocational education.

The fate of the AIKAMA and NORDIMA projects has, instead, been their gradual shutdown. The main reason for this relates to the strategic decision of the university to make the master programmes into wider aggregates than before and to finish the programmes with a minimal number of students. When the faculty carried out these strategic decisions, such things as the innovativeness of the individual programme, the good feedback from students or the programmes, the justifiable significance regarding the educational policy were not sufficient grounds to deviate from the general strategy of the entire university. When it was decided to terminate the AIKAMA programme, the NORDIMA programme also lost its significance at the same time, at least partly because its main recruiting base – which, in any case, was too narrow - disappeared.

The fact of the matter is that the AIKAMA subject teacher education programme, in which education was the major subject, suffered from a sort of identity problem during its entire life course. Many of those teachers who had themselves completed the traditional subject teacher education or otherwise had committed to its background thoughts were not able to accept the fact that AIKAMA primarily aimed at offering students strong expertise in educational sciences and, in addition, to proficiency in mathematics that was qualifying and sufficient for teaching mathematics at the comprehensive school

and upper secondary school levels. Those who strongly criticized the programme argued that just the opposite should be essential in subject teacher education, i.e. a good knowledge of mathematics and sufficient professional skills in pedagogy. The education ended up in the crossfire for both ideological and labour union political reasons. On the one hand, the representatives from primary school teacher education considered the programme a subject teacher education programme and did not permit it in their own “territory”, and on the other hand, the subject teachers shunned it because of its emphasis on the educational sciences and not on the mathematics itself.

At the pedagogic level, an attempt was made by the Didactic Mathematics study module to strengthen the compatibility of teaching university mathematics courses with the objectives of teacher education in the AIKAMA programme and, at the same time, to persuade students in primary school teacher education to choose the mathematics as a minor subject in their bachelor and master’s degrees from the outset. The reduced resources in the department of mathematics and the Faculty of Education have depleted possibilities to offer Didactic Mathematics courses. At the same time, the ending of the AIKAMA programme has essentially reduced the need for the courses profiled in this way.

My view is that there are parties responsible for teacher education at the university who often protect their own interests and ideological views trying to retain existing old structures, even if the change in the educational structures within the society would clearly require changes both in the structures and the contents of the teacher education. Subject teacher education, especially, has been in a subordinate position, both locally and nationally, in the field of the entire teacher education, which has made its developing efforts difficult. Having and maintaining subject teacher education is generally admitted and considered extremely important for the university and its subject departments. However, the development of subject teacher education has not been seen as an important goal for the community, because

the education has fulfilled its task in its current form also, at least satisfactorily. The projects which I introduced above have made attempts to reform subject teacher education to better respond to the challenges of the changing Finnish basic education. The challenge to bring subject teacher education and primary school teacher education closer to each other exists. Fortunately, the thoughts behind these attempts were allowed to lead their free life for some time and some of them even stayed alive. Unfortunately, however, in the more general process of change in higher education, subject teacher education in many respects had to settle down and to return to a role of a prisoner of its own tradition.

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# On the process aspect in mathematics through genuine problem-solving

*Jaska Poranen*

The process aspect of mathematics is important to school teachers on the basis of subject didactic research. Through it, we can achieve better commitment to studies at school, more applied skills, and deeper learning, for example. However, in the conventional subject studies at the university level this approach may remain vague. Also, the concept as such needs some clarification. The author of this chapter sets himself a genuine problem through which he wants to achieve a clearer picture of the process aspect. GeoGebra software is quite a central tool here. Many experimental features then come along; many conjectures and hypotheses arise and very often they turn out wrong, too. So, in a sense, the process aspect seems to be a chain or a network of conjectures and refutations; it may also include some qualitative reasoning needed for a better understanding. Such features are common in other sciences, and also in everyday life. At the same time, however, something promising may appear, demanding

validation: here, at the latest, the system aspect of mathematics, together with the toolbox view, comes naturally into play. One can also apply Polya's terminology and say that demonstrative reasoning and plausible reasoning meet in the process aspect. In the end, the author also creates some more general connections of this writing process to certain themes in the subject didactics, i.e. in the contents of his teaching as a university instructor.

## Introduction

The didactic triangle is one of the first things to be studied in the subject teacher's pedagogical education. The two vertices of the didactic triangle are always labeled as teacher and learner. The third vertex is labeled according to the subject in the focus of teaching. In this chapter, this third vertex is mathematics. It is also a common practice to draw two-headed arrows between the vertices to express the mutual interactions there. The "classic" didactic triangle is quite simple as a model of the dynamic teaching and learning process at school. Even so, it creates a frame of many essential questions. For example, Schoenfeld (2012) has listed a few of them. The next three especially interesting ones in this context are gathered from that list:

- What is mathematics, and which version of it is the focus of classroom activities?
- What is the teacher's understanding (in a broad sense) of mathematics?
- How does the teacher mediate between the learner and mathematics, shaping the learner's developing understanding of mathematics?

A great deal of research has been published on the perspectives to mathematics by the professors of mathematics, teacher educators, and teachers of mathematics at school (e.g. Pehkonen 1999; Mura

1993; Törner & Pehkonen 1999; Viholainen et al. 2014; Tossavainen et al. 2017). The following classification of the dominant views seems to be the most typical one:

- Mathematics is a formal system, in which you have to write rigorous proofs with a precise and clear language (in short: “mathematics as a system”, or plain S).
- Mathematics is a collection of calculation rules and routines, which will be applied along the circumstances (“mathematics as a toolbox”, T).
- Mathematics is a dynamical process where everyone creates his or her own mathematics according to needs and abilities (“mathematics as a process”, P).

The classification above has been reached by applying qualitative data analysis to the answers to the question “what is mathematics?” (Pehkonen 1999; Mura 1993). In an alternative approach, this classification has been used as a starting point for the analysis of data (Törner & Pehkonen 1999). It also has to be noticed that the S, T and P categories above do not mean that everyone is a member of just one class - quite on the contrary. Typically, everyone belongs to all classes, but in different magnitudes. Surprisingly, the P perspective was the least dominant among the professors; one could have expected the opposite because professors, in particular, produce something new in mathematics (Pehkonen 1999).

The S category above is well-known to everyone who has studied mathematics to some extent at the university level. For example, every student majoring in mathematics studies at least elementary mathematical analysis. Behind it is the axiomatic system of real numbers defined as the complete ordered field. Every proposition, say the fundamental theorem of analysis, has to be proved in this field (see, e.g., Poranen 2000, 20). The elementary mathematical analysis is already a huge and complicated system; studying it demands a lot of work and probably nearly everyone finds it a “finished system”, which one just has to learn.

Respectively, “mathematics as a toolbox” (T) is familiar to every student of mathematics. The above-mentioned mathematical analysis has a never-ending number of applications in science, engineering, economics, geometry, etc. The same applies to other domains of mathematics which the prospective teacher usually studies. The applications may be familiar or not so well-known (see, e.g., Poranen & Haukkanen 2012; Abramovich & Brouwer 2003).

However, mathematics as a process (P), from the viewpoint of the prospective teachers, is surely much more difficult to describe. Especially the part “everyone creates his or her own mathematics...” can raise many questions, simply because the things are not usually studied in that way. We could also say that the ordinary tradition in teaching and learning mathematics at the university level is more educational than developmental – to use the terminology from Haapasalo & Kadjevich (2000).

Here, the author will not just content himself with some general level argument for the P perspective (however, never at the expense of the S and T perspectives in the subject teacher education); instead, he sets himself a genuine problem through which he wants to make the P perspective more accessible and understandable in teacher education, especially with consideration to the didactic triangle.

The following is a summary of quite a multidimensional problem-solving process with a few remarks and more general reflection.

## Problem Q and its background

The father figure of the rich tradition of mathematical problem solving G. Polya (1887–1985) presents in his book (1973, 122 - 123) the question (**q1**):

Given two points and a straight line, all in the same plane, both points on the same side of the line. On the given straight line, find a point from which the segment joining the two given points is seen under the greatest possible angle.

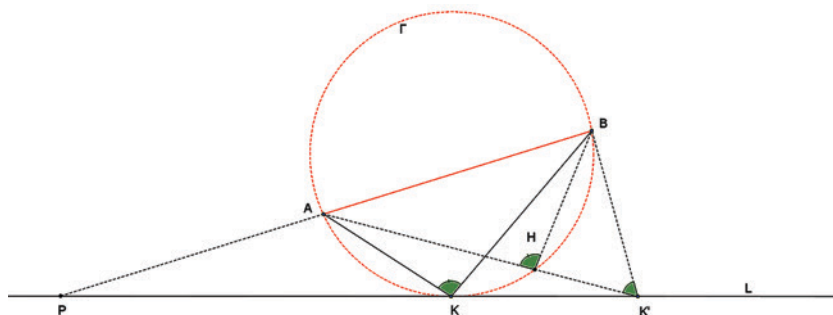


Figure 1. Question q1: How to find point K from line L so that the segment AB is seen from it under the greatest possible angle.

After a few quite qualitative considerations Polya says that we have to draw a circle passing through the given points A, B, and which touches line L: the vertex of the maximum angle is the touching point K (cf. Fig. 1). However, he does not reveal how all this can be done as a genuine classic geometric construction (i.e. with compass and ruler without a scale (see, e.g., Lehtinen, Merikoski & Tossavainen 2007, 79–84, 125–129). Nor does he give any proof for his proposition. He also seems to leave aside the fundamental question concerning the existence of the geometric solution. All these questions proved to be difficult to the author, although the entire essence of the problem (Q, below) is not yet here. One reason for the difficulties was that Polya's original figure contained just the segment AB, line L, the circle  $\Gamma$ , and the touching point K – without any further explanations. Our figure (Fig. 1) contains more essential elements, and their crucial role will be discussed further on in this chapter.

Later in his book, Polya (1973, 142–144) introduces another question (q2), which is likely to be much better known:

Given two points and a straight line, all in the same plane, both points on the same side of the line. On a given straight line, find a point such that the sum of its distances from the two given points be minimum.



A widely known and elegant solution to this problem is visible in Figure 2:

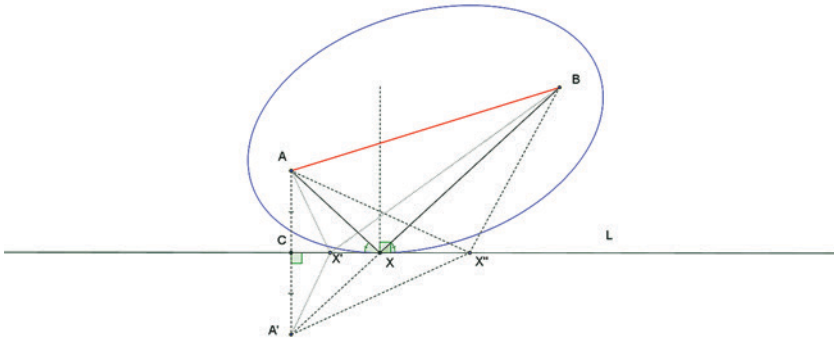


Figure 2. Question q2: How to find point X from line L so that the polygonal line AXB is as short as possible.

One geometric solution to question **q2** is quite simple: We first construct the mirror image  $A'$  of point A with respect to line L; then the solution is the point X intersection of segment  $A'B$  and line L. The solution (path AXB) is easy to prove to be true by using some elementary geometry (see Fig. 2). Respectively, it is easy to show that angles  $AXX'$  (“the angle of incidence”) and  $BXX''$  (“the angle of reflection”) are equal. The paths  $AX'B$ , and  $AX''B$  are two arbitrary routes from point A to point B through line L. By using the mirroring with respect to line L, we see that  $AX' = A'X'$  ( $AX'' = A'X''$ ), and that  $AX' + X'B$  ( $AX'' + X''B$ )  $>$   $AX + XB = A'X + XB$  because segment  $A'B$  gives the shortest distance between the two points  $A'$  and B.

It may also be interesting to see that we can draw an ellipse with the focal points A, and B, so that it touches line L at point X, i.e. we adjust the sum  $AX + XB$  to give the constant distance of the points of that ellipse from its focal points A and B (Fig. 2). We could generally deduce some central properties for all ellipses on the grounds of this observation. However, now we have to omit this line of inquiry.

Question **q2** is not at all as boring as it may seem at first sight. For example, there are many connections to geometric optics in it (see,

e.g., Young & Freedman 2000, 1055–1063; also Polya 1973, 143–147). However, these and many other interesting features linked to it are not our focus now. Instead, we are presented with a chance to set a genuine problem (at least to the author): **Is there some relation between questions q1 and q2?** Let us call this question or problem **Q**. We can set problem **Q** more precisely also: **Is there some relation between points K and X** (cf. Fig. 1. and Fig. 2)? Of course, in this context, we are looking for some possible interesting mathematical connections between points K and X. As far as the author has been able to assure, Polya himself has not posed question **Q**. He merely writes (1973, 143):

In fact, both problems have exactly the same data, and even the unknown is of the same nature: Here, as there, we seek the position of a point on a given line for which a certain extremum is attained. The two problems differ only in the nature of this extremum: Here we seek to minimize the sum of two lines; there we sought to maximize the angle included by those two lines.

In the following we will assume that segment AB lies entirely above line L; further we assume that the distance of point B from line L is greater than the distance of point A from it (see Fig. 1 and Fig. 2). The case  $AB \parallel L$  will be investigated separately (see *The AB || L case* in this chapter) as will the case  $AB \perp L$  (see *The general case*). So from now on  $0^\circ < \alpha < 90^\circ$  where  $\alpha$  is the angle between the segment AB and line L, and the cases  $\alpha = 0^\circ$ ,  $\alpha = 90^\circ$  will be discussed separately. Here, we also prefer classic geometric reasoning to differential calculus, etc., to keep things as simple and observable as possible.

## Some preliminary conjectures concerning question Q

*Certainly, let us learn proving, but also let us learn guessing.* (Polya 1973, Preface.)

In what follows, we will rely on *GeoGebra* (version 5.0); its correct functioning in measuring angles, for example, is unquestionable.

The first conjecture or hypothesis (**c1**) about **Q** could be quite straightforward. Point  $K$ , which defines the vertex of the maximum angle = point  $X$  which defines the shortest path (see Fig. 1 and Fig. 2). Some experiments by *GeoGebra*, however, show that **c1** cannot be true. However, there may be a special case where **c1** holds (see section *The AB II L case*), and perhaps, something else of interest may also emerge. One possibility in that direction could lie in the following consideration (Fig. 3):

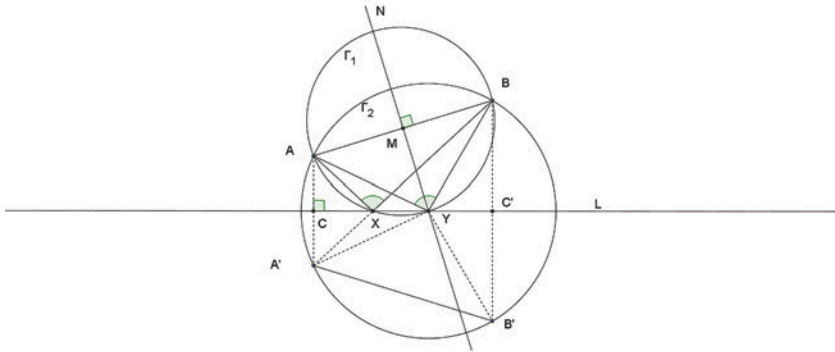


Figure 3. Angle  $AXB = \text{angle } AYB$ ; angle  $BAY = \text{angle } AXC$  (angle  $BXC'$ ).  
 These observations provide two new methods to construct point  $X$ .

Let point  $Y$  be the intersection of the perpendicular bisector  $N$  of segment  $AB$  and line  $L$  (Fig. 3). Now we can construct circle  $\Gamma_1$  through points  $A$ ,  $B$  and  $Y$ , and then prove that the circle also goes through point  $X$  (see Fig. 2). The details of the proof are omitted here, but the author thinks he succeeded in it by constructing another circle  $\Gamma_2$  passing through points  $A$ ,  $B$ ,  $B'$  and  $A'$ , where  $A'$  and  $B'$  are

the mirror images of points A and B with respect to line L (Fig. 3). Aided by this circle he could prove that  $\angle AXB = \angle AYB$ , so points X and Y must lie on the same circle  $\Gamma_1$ . He also reached the conclusion that  $\angle AXC = \angle BAY (= \angle BXC')$ , where point C is the intersection of segment AA' and line L.

By means of circle  $\Gamma_1$  we can construct point X (see Fig. 2) as the intersection of circle  $\Gamma_1$ , and line L. We can also construct point X on the grounds of the observation that  $\angle AXC = \angle BAY$ , because triangle AXC is right-angled. Both of these methods are new to the author, and they developed as a sort of side effect by investigating hypothesis **c1**.

By observing circle  $\Gamma_1$  and its points X and Y (Fig. 3), we can state the second hypothesis (**c2**) concerning problem **Q**: the midpoint between X and Y is K (see Fig. 1 and Fig. 3). But *GeoGebra* is again ruthless... However, that midpoint may lie very near to point K. Furthermore, we can propose something a little bit weaker: point K always lies between points X and Y (**c3**). Using *GeoGebra*, the author has not succeeded to prove **c3** wrong; yet, of course, it may not hold.

## The $AB \parallel L$ case

It is quite natural to try to get a clear view of the special case where segment  $AB$  is parallel to line  $L$  (Fig. 4):

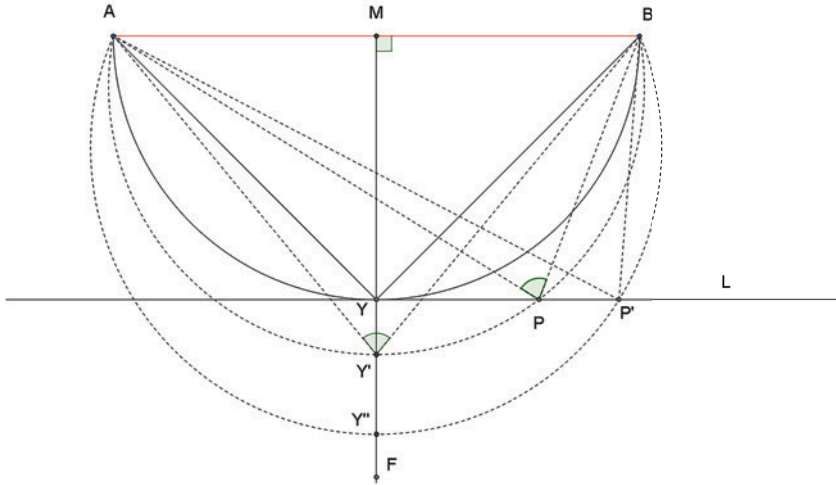


Figure 4.  $AB \parallel L$ .

Let  $MF$  be the perpendicular bisector of  $AB$  and let point  $Y$  be the intersection of  $MF$  and  $L$ . Further, let points  $Y'$  and  $Y''$  lie at  $MF$  so that  $MY < MY' < MY''$ . The supplementary adjacent angle of an angle in any triangle is always greater than the other two angles of that triangle. Thus angle  $BY'Y < \text{angle } BYM$ , and from this follows that angle  $BY'A < \text{angle } BYA$ . Respectively, we conclude that angle  $BY''A < \text{angle } BY'A$  (Fig. 4).

We can draw the circle through points  $A$ ,  $Y'$  and  $B$  and name as  $P$  one of its two intersections with line  $L$  (Fig. 4). Now the vertices of angles  $BPA$  and  $BY'A$  are on the same circle opposing the same chord  $AB$ , so angle  $BPA = \text{angle } BY'A$ ; further, especially, angle  $BPA < \text{angle } BYA$ . We also see that angle  $BP'A < \text{angle } BPA$ , and this is equivalent with  $YP < YP'$  (Fig. 4).

To sum up, angle  $BYA$  is the maximum angle in the case of  $AB \parallel L$ , where  $Y$  is the intersection of the perpendicular bisector of  $AB$  and  $L$ ; the greater the distance of point  $P$  from point  $Y$  along line  $L$ , the smaller angle  $BPA$  is. Equivalently, the greater the distance of point  $Y'$  along  $MF$  from point  $M$  (below  $AB$ ), the smaller angle  $BY'A$  is. Also, clearly,  $BYA$  is the shortest path from  $B$  to  $A$  through  $L$  (Fig. 4). So now, point  $K = \text{point } X$  (see Fig. 1 and Fig. 2). We see that the new methods (see *Some preliminary conjectures concerning question Q*) to find point  $X$  also works in this special case; then, of course, point  $X = \text{point } Y$ .

## The general case

First, we have to go back to Figure 1 and question **q1**. Polya's basic idea there seems to be correct: let point  $K$  be the touching point of line  $L$  and the circle passing through points  $A$  and  $B$ . Further, let  $K'$  be an arbitrary point ( $\neq K$ ) on line  $L$  and let point  $H$  be the intersection of segment  $AK'$  and circle  $\Gamma$ ; in triangle  $HK'B$ , angle  $K'$  is smaller than the supplementary adjacent angle  $AHB$  ( $=$  angle  $K$ ) of angle  $BHK'$ . Thus, angle  $K' <$  angle  $K$ , i.e. segment  $AB$  is seen from point  $K$  under the greatest possible angle. We may further define the intersection of the lines  $AB$  and  $L$ , and name it  $P$ ; then  $PK'$  is a tangent line of circle  $\Gamma$ , and point  $K$  on it is the common point of this tangent and the circle. (Fig. 1)

Polya himself did not give an exact explanation (or proof) for the existence of point  $K$ , like that above. Now we know that point  $K$  exists, but is there a genuine geometric construction to it? To try to find it, we should first recall the principle of analysis and synthesis from the mathematical problem solving tradition (see, e.g., Haapasalo 2012). By analyzing the Figure 1, we may come to a construction idea (synthesis) with the help of the Secant Theorem (Fig. 5):

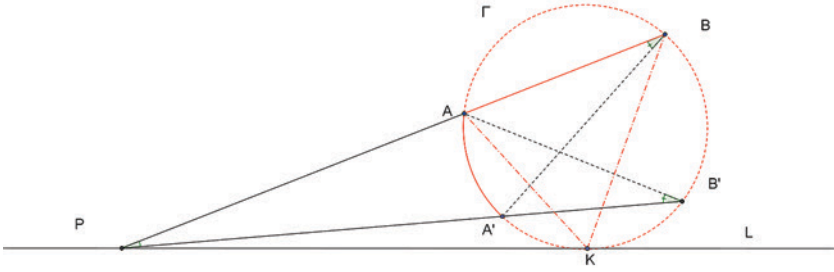


Figure 5. The Secant Theorem:  $PA \cdot PB = PA' \cdot PB'$

Triangles  $PA'B$ , and  $PAB'$  have angle  $A'PA$  in common. Further, angle  $A'B'A = \text{angle } ABA'$  (corresponding to the same arc,  $A'A$ ), so these triangles are similar. Thus  $PA'/PB = PA/PB'$ , i.e.  $PA \cdot PB = PA' \cdot PB'$  (Fig. 5). Let, then, secant  $PB'$  rotate around point  $P$  so that it goes closer and closer to the tangent  $PK$  (cf. also Fig. 1). We see that then

$$PA \cdot PB \rightarrow PK \cdot PK = (PK)^2$$

Thus  $PK =$  the geometric mean of  $PA$  and  $PB$ , i.e.  $PK/PB = PA/PK$ . The geometric mean here (and more generally) is constructible, but we now omit the details of its proof (see, e.g., Väisälä 1965).

In other words, to solve the question **q1** geometrically, we have to construct the circle with that geometric mean as a radius and  $P$  as the centre. The intersection of this circle and line  $L$  gives the vertex point  $K$  of the maximum angle. It is interesting to note that the method works in the  $AB \perp L$  case, too (see Fig. 7). We may also observe that triangles  $PKB$  and  $PAK$  are similar. Then, for example,  $KA/KB = PA/PK$ . Obviously, we have found a solution to the next construction problem, too, i.e. given two points  $A, B$  above line  $L$ ; construct a circle passing through the given points, and touching the given line  $L$ .

The author has to admit (with a little embarrassment) that he faced great troubles here. He had some private correspondence with J. Merikoski, the emeritus professor of mathematics (University of Tampere). Merikoski offered an idea on how to prove Polya's proposition about the existence of vertex  $K$  of the maximum angle.

He also showed the role of the Secant Theorem in the geometric construction of that point. So, now we know how to construct both points K, and X, separately. However, the main question, Q, still does not have a solution.

Even before the correspondence with professor Merikoski, the author had found by himself quite a promising procedure to define vertex K of the maximum angle, and there and then a conjecture (c4) concerning the main question Q, also (Fig. 6).

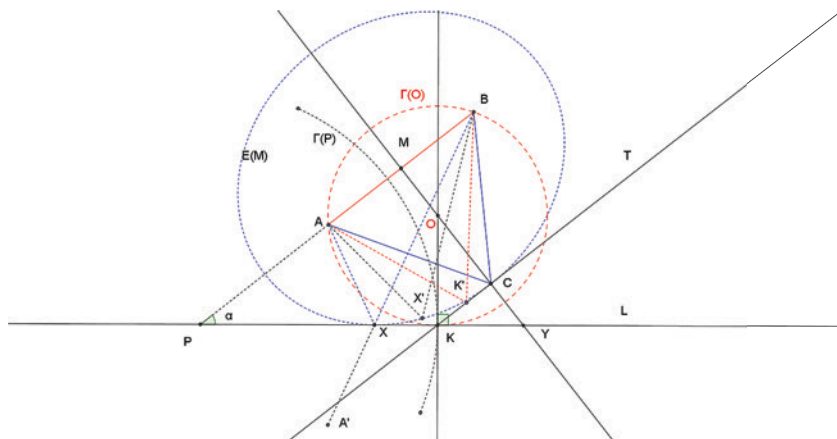


Figure 6. Conjecture c4: Points X and K are connected through a multiphase minimization-maximization-decreasing-maximization process starting from point X.

Again we have to first find point X, minimizing the length of the path from A to B, through line L (see Fig. 2). Of course, then we also see segment AB in an angle AXB. Next, we construct through point X an ellipse E(M) with the focal points A and B. Let the intersection go closer to L of E(M) and the perpendicular bisector MY be C. Then, we draw line T through point C, parallel to AB, and mark the intersection of it, and line L with K. (Fig. 6)

On the grounds of the observations (by *GeoGebra*), point K constructed in this way is the vertex of the maximum angle. Naturally, it also seems to be the same point that we get by using the equation  $PA \cdot PB = (PK)^2$  (of course, in the contrary case we should



reject conjecture **c4**). Through minor calculation, we can easily show our conjecture **c4** to be true in the special  $AB \perp L$  case (Fig. 7).

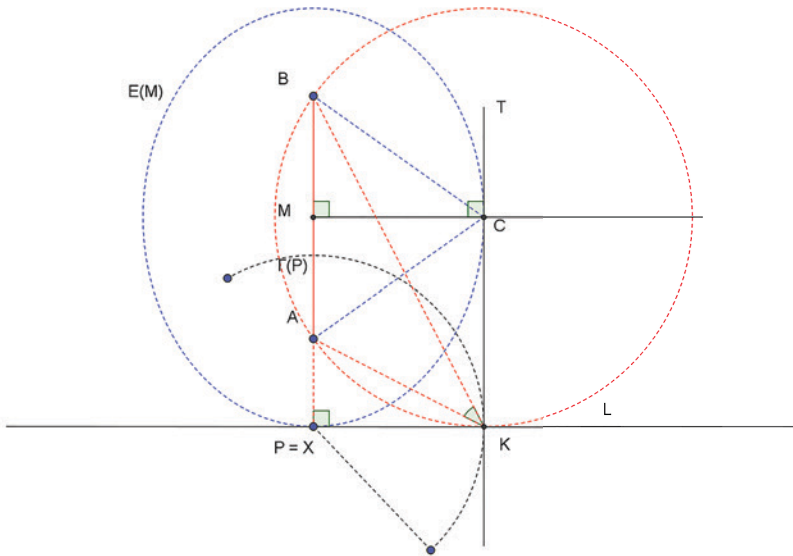


Figure 7. The  $AB \perp L$  case

In this case (Fig. 7), the length of the shortest path AXB (see Fig. 2) is clearly  $= AP + PA + AB = 2AP + AB$ , and  $P = X$ . Thus,  $AC (= BC) = AP + AB/2$ , and  $(MC)^2 = (AC)^2 - (AB/2)^2$ , i.e.  $(MC)^2 = AP(AP + AB)$ , i.e.  $MC =$  the geometric mean of the segments PA, and PB, i.e.  $MC = PK$ . Further, clearly  $MC \parallel PK$ , therefore, line T through point C, parallel to AB, intersects line L at point K (Fig. 7). It may be interesting to note that now  $\angle AXB = \angle AYB = 0^\circ$  also, if we consider that point Y is the “intersection” of lines L and MC at infinity. Respectively, then the second result that we found in section 3 also holds true (cf. Fig. 3).

In the general case (Fig. 6), we content ourselves with *plausible reasoning* – instead of *demonstrative reasoning*, i.e. we leave the (possible) true proof for another time; both these terms of reasoning come from Polya (1973).

So, let us choose a “moving point”  $X'$  from the ellipse  $E(M)$  (Fig. 6). Then always  $AX' + X'B = AX + XB$ , and angle  $AX'B$  increases as we move closer to  $MY$  along the ellipse  $E(M)$ . We reach the maximum size of this angle at point  $C$ .

Now we have an isosceles triangle  $ACB$ , the base of which is  $AB$  and sides  $AC = BC = (AX + XB)/2$ . Next, we construct a line  $T$  parallel to  $AB$  through the vertex  $C$  of this triangle. At this point, at the latest, it could also be a good idea to take a glance at Figure 4 and recall the considerations there.

We will move again, but now along line  $T$  to the left using point  $K'$  (see Fig. 6). Then angle  $AK'B < \text{angle } ACB$ , and angle  $AK'B$  decreases all the time as point  $K'$  moves to the left. But there is a point where line  $T$  meets line  $L$ . We stop the moving there and conjecture that this point is the vertex of the maximum angle  $AKB$ .

In addition, the (plausible or “qualitative”) reasoning above not only includes the fact that the area of triangle  $AKB =$  the area of triangle  $ACB$ , it also gives us some evidence for conjecture **c3**. If we are right here, we have found a genuine constructive connection between points  $X$ , and  $K$ . We may have to exclude the ellipses from the set of allowable geometric constructions, but the role of the ellipse  $E(M)$  is not crucial in the reasoning: clearly, we can also get point  $C$  (see Fig. 6) without it (starting from point  $X$ ).

In our figures (Fig. 2, Fig. 6, Fig. 7), we have generated the ellipses by *GeoGebra*. If we allow such use and drawing of the ellipses, we may, perhaps, also start from point  $K$ . Angle  $CKY = \alpha$  (see Fig. 6), and therefore we can find point  $C$  starting from point  $K$ . We should then prove that an ellipse through this point and with the focal points  $A$ ,  $B$ , touches line  $L$  and that this touching point  $= X$ .

## Some remarks on the Q process

The author had not encountered question **q1** earlier. Therefore, it (as part of the main question **Q**) served well as a starting point for examining the process aspect (P). In the beginning, the author thought that it could not be very hard to find a geometric (constructive) solution to it – if it only happened to exist. He also thought that in case of possible difficulties, analytic geometry or some differential calculus would quickly help. However, question **q1** remained difficult (for the author), and it was sometimes quite frustrating, too. The author learned, little by little, a lot of things about the possible constructive solution of **q1**, but it did not help. He found out, for example, that the centre  $O$  of that circle  $\Gamma(O)$ , which passes through point  $K$ , must lie on the perpendicular bisector  $MY$ , so  $KO = OA (= OB)$ ; angle  $KOY$  must be equal to angle  $KPA$  (Fig. 6), etc. In practice, the author executed many experiments using *GeoGebra*; it took, however, a lot of time before reaching something promising (cf. Fig. 6).

The author abstained from online help. He had to be on his own so to speak; i.e. he had to use just his existing knowledge structures (hoping that there is something) to achieve a true understanding and experience of the process aspect. Still, some standard textbooks used in his teaching at school and university were “allowed” (see References).

The author did not, however, find or invent anything directly useable from his knowledge structure, or from the “allowable textbooks”. Afterwards, it is easy to say that he should have been able to find something. For example, the legendary Finnish textbook of Geometry (Väisälä 1965, 120) contains the Secant Theorem, and some exercises that could have been helpful (there was, however, not a word about some possible connections to question **q1**); the author has used the Secant Theorem in his own teaching and has even applied it to a geometric interpretation of division (cf. the S and T perspectives), etc. So, The Secant Theorem must have been somewhere in the author’s

mind. However, he was unable to connect it to question **q1**. Therefore, we have here an example of the classic transfer problem also (see, e.g., Ropo 1999, 158; Greeno, Collins, & Resnick 1996, 21).

The author had set his mind too rigorously on looking for a solution to **q1** otherwise – not through point P (cf. Fig. 1, Fig. 5 and Fig. 6). Anyway, it was a bit difficult to deal with limited ability already with the problem **q1**. But the invention of the rather complicated hypothesis **c4** (see Fig. 6, Fig. 7) gives him some consolation. The author is quite convinced that the (partly qualitative) reasoning there is correct, or at least very fascinating. He may still be wrong.

Question **q2** (as the second part of the main question **Q**) was already quite familiar to the author. He has utilized it in his teaching of subject didactics, for example, by considering some functional working methods, and also in his teaching of geometry. Still, during this writing process he learned much more about it (see, for example Fig. 3). In many games, such as ice hockey, a player may pass the puck to another player via a wall; question **q2** gives the interesting geometry behind that. As a standard extreme value task, say, by handling root functions in differential calculus, it is not hard; however, in manual computing it demands quite a lot of work.

To many students in teacher education it seems to be important to realize that some extreme value tasks (such as **q2**) can be viewed in many different ways – also concretely without using, say, the typical arsenal of abstract differential calculus. We could present question **q1** in the context of differential calculus, too. By applying our pure geometric solution we could also deduce an analytic expression to point K, and this could be of some use there. But, even then, **q1** would probably be quite difficult in the context of differential calculus. Respectively, we could find (easily) an analytic expression for point X. Thus, it could be possible to investigate the main question **Q** through these analytic expressions for K, and X, too. However, in this chapter we have had to omit that possibility.

The main problem **Q** was difficult (for the author). This was not a surprise, at least not after those preliminary conjectures **c1**, **c2**, and many others which, one by one, proved incorrect. One reason for the difficulty was certainly question **q1** (as part of it), which bothered the author for a long time. However, perhaps because question **Q** was the author's "own", it always remained motivating and interesting; well, at times it was frustrating, too. All in all, though, **Q** was an excellent companion with whom the author could "talk" almost any time.

There still remains at least one crucial question we should consider. Does the narrative of the problem solving process above – let us call it the **Q Process** – shed some light on the general process aspect (**P**)? "Everyone creates his or her own mathematics..." Did something like that happen? Yes, a little. At the beginning, the author made many observations through GeoGebra. However, it was not at all clear how to utilize or interpret them, because they did not give any hints to straightforward inductive generalizations. So, in a way, the author had no concepts through which he could have created some order in the observations (yet, naturally, there were some starting points). Furthermore, we must remember, of course, that the whole question **Q** was genuinely new to the author.

For example, the new methods (to the author) to find point **X** on line **L** (see Fig. 3) were one of the attempts to create some order in the observations (they may also have a role when investigating conjecture **c4**). The same applies to the considerations in Fig. 4. The reasoning there was simple; however, it was also new to the author, and, as a matter of fact, it proved to be important in the (plausible) reasoning concerning conjecture **c4** (Fig. 6, Fig. 7). Conjecture **c4** remains unproven, but the whole complex thinking process there was certainly new to the author; we may also say that it was his own. So, to get some true understanding and experience of the **P** aspect, the genuine problem solving seems useful.

During the **Q Process**, conjectures turned up many times, and it was natural query about their proof (or falsifications). Therefore, in

this way for example, the S aspect was present in the Q Process, too. If we think about some possible appliances, the maximum angle in games or lightning, for instance, we must be sure about the theory being applied – and so we have a natural motivation for proof in the S context.

The T aspect was also present in the Q Process. For example, the use of the Supplementary Adjacent Angle Theorem can also be seen from that perspective, and why not the Secant Theorem, as well. Thus, even these quite trivial remarks show that in the Q Process the S and T aspects were present, too.

As far as the author can tell, mathematics, more generally, affords endless possibilities to find such a good companion as the Q Process above. But it is not always necessary to try to solve a suitable or meaningful “problem of one’s own”. Any concept or structure from the “finished mathematics” may work as a starting point. Then, however, it could be a good idea to think about things, so to say, developmentally rather than educationally (cf. Haapasalo & Kadijevich 2000; Haapasalo 2004).

All in all, a good guideline could be found from Polya’s treatise (1973) on the features of plausible reasoning, such as generalization, specialization, analogy and induction. Also, the article (Yrjänäinen & Ropo 2013) is a good presentation concerning the general characteristics of meaningful learning. One application of the ideas in that article is the paper by Poranen & Yrjänäinen (2015). There, the starting point was the consideration of the geometry of a car jack, as a (dynamical) rhombus.

The uncertainty and roughness which runs throughout this text is usually absent from the textbooks and basic studies of mathematics. This state of affairs has certainly many good and practical grounds. However, the system (S) and toolbox (T) views can then be given too much focus without giving the students enough possibilities to real or deeper understanding of the ideas. The most important reason to study mathematics is to learn to think; forgetting or hiding the

process view (P) may be quite a poor solution in this regard. The textbooks could perhaps contain some of the author's narratives on their genuine problem solving, and not always just "success stories".

The prospective teachers of mathematics should write their own "meaning narratives" or stories about their own genuine problem solving. That could be part of their standard studies during their subject didactic (pedagogical) studies at the latest. Otherwise, they will not have enough means to get the learners to participate in and commit to their studies at school. This includes, naturally, that the learners are required to do something similar. Without any genuine experience of their own, the teachers cannot offer the learners the possibilities to do that. Also, without such experience, the prospective teachers cannot understand what Schoenfield (2012) means by his three questions presented at the beginning of this chapter.

## Discussion

The author works as a university instructor in three basic domains in the Faculty of Education at the University of Tampere: in the subject teacher education teaching didactics of mathematical sciences, in primary school teacher education as well as a teacher of didactic mathematics (this is not to be confused with didactics of mathematics, see, e.g., Poranen & Silfverberg 2011). Before working at the university (since 2004), the author worked as a school teacher for about a quarter of a century. He taught there, among other things, mathematics and philosophy.

It takes one academic year to complete the didactical/pedagogical studies (60 ECTS) in subject teacher education. During that year, the students study general education, subject didactics, conduct subject didactic research, and do the teaching practice at school. Before starting the proper pedagogical studies, including the teaching practice at school, students must have completed a minimum of 50–60 ECTS of studies in mathematics if it is their major.

Classroom mathematics is something quite different compared to university mathematics. For example, Sorvali (2004), a Finnish mathematician, has written about some considerable differences between school and university mathematics where he questions the traditional thinking based on the idea that the best know-how in school mathematics is achieved only through studying mathematics as an axiomatic-deductive system (cf. S perspective). Instead, Sorvali proposes a kind of “observational mathematics” to be part of the prospective mathematics teachers’ subject studies (cf. Q Process & P perspective). Klisinska (2009) deals with the complicated relationship between academic and classroom mathematics using the notion of didactic transposition of mathematical knowledge as a central theoretical instrument (cf. also Schoenfeld 2012). Much research pertaining to functional pedagogic knowledge of mathematics exists (e.g. Stylianides & Stylianides 2010).

As a consequence, one of the first natural steps in subject didactic studies is elaborating on each student’s conceptions and perspectives of mathematics as a starting point in discussion on classroom mathematics. Then, usually, the S and T perspectives introduced at the beginning of this chapter emerge. On the other hand, school mathematics also comprises aims whereby the S and T perspectives may not be enough to teach successfully. For example, the students in grades 7–9 should be encouraged to find and utilize mathematics in their own lives; they should also have abilities to model and solve problems mathematically (POPS 2014, 374). There are similar emphases in the national [Finnish] curriculum for upper secondary school, too (cf. LOPS 2015, 129).

Respectively, since the 1980s, concepts related to the didactics of mathematics have considered mathematical proficiency quite broadly. At that time, concepts such as *strategic competence*, *adaptive reasoning*, and *productive disposition* were emphasized. By strategic competence we refer to the ability to formulate, represent and solve mathematical problems. Adaptive reasoning refers to the capacity



for logical thought, reflection, explanation and justification, while productive disposition points to the habitual inclination to see mathematics as worthwhile, sensible and useful, a connection to a belief in hard work and one's own efficacy. In addition to those three features, *conceptual understanding* (i.e. comprehension of concepts, relations and operations) and *procedural fluency* (i.e. know-how in when and how to use different standard procedures) are also usually mentioned. The author thinks that the first three characteristics are not far from our P perspective here, and, respectively, that the last two features are close to the S and T perspectives.

In the literature of the didactics of mathematics, researchers have always emphasized that all of the five components are interwoven and interdependent on each individual's development of proficiency in mathematics (see, e.g., Kilpatrick et al. 2001; Joutsenlahti 2005). We have also seen above, in a concrete way, that the perspectives S, T, and P in our Q Process were interwoven, although the focus was on the P perspective.

Our Q Process and questions **q1** and **q2** as such are quite good examples, if we think, for example, about those emphases mentioned in our national curricula and the didactical emphases in mathematical proficiency. Or, to say it more clearly, the prospective teachers of mathematics should have some similar training and experiences, as this author had in his Q Process, to better meet the demands set forth in the curricula and to better understand the more general and significant P perspective (including, for example, the strategic competence in mathematical proficiency). Of course, they still have to possess a good know-how of many basic things in the traditional sense, i.e. in the senses of the S and T perspectives. And, of course, they are much cleverer in problem solving than this author, a senior instructor who, however, still wants eagerly to become a better teacher.

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## **Part IV**

### **Multiculturalism, Arts and Professional Growth in Teacher Education**



# Developing interreligious competence in teacher education

*Inkeri Rissanen, Arniika Kuusisto and Elina Kuusisto*

## Introduction

In many parts of Finland, issues related to religious and cultural diversity have only recently been encountered. During my studies, there has been minimal discussion on these issues, even though all of us now studying to be teachers will encounter students from different cultural backgrounds when we start working. How can anyone assume that teachers will have the ability to work in the types of environments in the future without a proper education? Whether or not a student teacher learns about these issues should not be a matter of his/her own interests. The abounding discussion of how schools should be changed without efforts to acknowledge these changes in teacher education is problematic. Being able to merely handle challenging situations should not be the essence of

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teachers' intercultural competence, because teachers should also develop their students' intercultural competences. (Rissanen, Kuusisto & Kuusisto 2016.)

Student teachers seem to be well aware of the increasing diversity in society and in educational institutions, as well as the challenges this diversity will present them with as educators. The citation from a Finnish student teacher above depicts the willingness to develop intercultural and interreligious competences as part of their studies, as well as the student teachers' concerns related to the feeling that the support they receive for the development of these competences is inadequate.

In this chapter, we will examine the concepts of *teachers' intercultural and interreligious competence* and discuss the challenges related to developing them in teacher education by drawing from multiple studies conducted in the Finnish context. First, we will portray how teacher's intercultural competence and intercultural sensitivity have been defined in the research literature and discuss the particular challenges related to dealing with religious forms of difference. The notion of interreligious sensitivity will be described, which will lead us to discuss the need to better understand what makes a teacher not only interculturally but also interreligiously competent. Second, we will discuss the Finnish context and the current status of intercultural and interreligious competences in Finnish teacher education. Third, we will elaborate research results from studies that have examined the intercultural and interreligious sensitivities of Finnish teachers and student teachers as well as the development of these sensitivities during their teacher education. Finally, we will discuss the implications of these findings from the perspective of further development of teacher education.

## Teacher's intercultural and interreligious competence

What is intercultural competence in teacher's pedagogical approach?

One of the critical challenges of teacher education today is to prepare teachers to face the increasing diversity in societies. Teachers at every grade level need intercultural competence that can be understood as an “ability to effectively and appropriately interact in an intercultural situation or context” (Berry & Southwell 2011). The dimensions of intercultural competence have been defined in different ways (e.g. Noel 1995; Byram 1997; Bennett 2008; Lustig & Koester 2006). However, intercultural competence is typically considered to include attitudes, knowledge and skills—in other words: cognitive, affective and behavioural dimensions.

Furthermore, intercultural sensitivity, which is part of the affective dimension mentioned above, can be seen as the very foundation of intercultural competence. According to Bennett (1993), it refers to a person's ability to observe and experience relevant cultural differences and to have the cognitive and behavioural skills to deal with these differences. Without intercultural sensitivity as the subjects' “active desire to motivate themselves to understand, appreciate and accept differences among cultures” (Chen & Starosta 1998, 231), it is impossible to create cognitive and behavioural dimensions, which also include teachers' willingness to act as critical and active agents of change who promote equality and inclusion in schools (Jokikokko 2005; Niemelä 2015). By and large, intercultural sensitivity is associated with greater potential for exercising intercultural competence (Hammer, Bennett & Wiseman 2003).

Bennett's (1993) *Developmental Model of Intercultural Sensitivity* includes orientations that describe different reactions to cultural dissimilarity. According to the model, the development of intercultural

sensitivity follows the three stages of ethnocentric orientation (*denial*, *defence* and *minimization* of difference), with regard to the attitudes related to the existence of cultures in one's environment, i.e. whether the existence of cultural differences is denied, seen as a threat simply disregarded and minimized. Subsequent to the *ethnocentric* orientation is the *ethnorelativistic* orientation (*acceptance*, *adaptation* and *integration* of difference) whereby individuals learn to acknowledge cultural differences, accept and respect them and, in the final stages, even adopt and integrate them into their own identity. A shift from ethnocentric stage of minimization to ethnorelativistic orientation seems to require increased awareness of one's own worldview including practices, assumptions and values: self-awareness is the basis of becoming aware of the differences in these forms of subjective cultural differences (Hammer, Bennett & Wiseman 2003; DeJaeghere & Zhang 2008).

Self-awareness and self-reflectiveness have also been seen, on the one hand, as necessary components of teacher's intercultural competence that should be developed in teacher education, and on the other hand, as personal character traits that indicate how an individual responds to education on diversity (Rissanen, Kuusisto & Kuusisto 2016; Garmon 2004; Adams, Bondy & Kuhel 2005). In developing self-awareness and positive attitudes towards diversity, cross-cultural experiences seem to be affective especially when they are combined with opportunities to reflect and mediate learning experiences related to encountering diversity (Pohan 1996; Smith, Moallem & Sherrill 1997; Causey, Thomas & Armento 2000; Garmon 2004; Whipp 2013). Although different ways of preparing student teachers for teaching in multicultural contexts have been studied (see, e.g. Sleeter 2001; Cushner & Brennan 2007), these studies do not have very clear implications, and there is no consensus on how changes in the student teachers' attitudes could be achieved. Furthermore, worldviews and religion are rarely discussed in these studies. Nevertheless, what is known is that previous experiences and

attitudes of student teachers function as a filter for learning, meaning that negative attitudes are very difficult to change through courses on multicultural education. Overall, student teachers' beliefs and assumptions of other people or groups have proved to be very difficult to change (Garmon 1996; 2004; Causey, Thomas & Armento 2000), but successful developments during teacher education programmes have also been reported (Kumar & Hamer 2012).

### Particular challenges in dealing with religious diversity – towards interreligious competence

The public role and political significance of religions in contemporary Western multicultural democracies have increased. The polarisation of worldviews into fundamentalist camps of the religious and the secular have created issues related to the new, more visible role of worldviews into heated debate topics (Habermas 2006). Furthermore, the transnational ties of citizens have increased and at the same time nationalist expressions and imaginations have intensified (Abowitz & Harnish 2006). Many European nations endeavour to be aware of and regulate the values of their citizens – for example, through education (Himanen 2012). However, this regulation often seems to focus on certain groups especially – Muslims, in particular, who seem to have become “the critical case of multiculturalism” in many liberal societies, since their religious values are often perceived to be in opposition to liberal discourses of individual rights and secularism (Modood 2011). In state-organised religious education, for example, the aim is often that students internalize national values associated with democratic liberalism and human rights discourse, but these forms of liberal educational practices have also been seen as “othering” towards non-Western worldviews (Rissanen 2018; Poulter, Riitaoja & Kuusisto 2015). Finnish teachers are also extremely oriented towards promoting mutual democratic values, but their willingness to recognise diversity and, in particular, to support the integration of

Muslim students in school and society is not very strong (Rissanen, Kuusisto & Tirri 2015).

However, in many multicultural educational approaches, religion is a silenced aspect (see, e.g, White 2009), and only recently have some of the advocates of multicultural education began to include religion and worldviews in the discussions (see, e.g, Banks 2009). Nevertheless, there seem to be disparate challenges in dealing with the diversity of religions in education. In secularized societies, teachers who have no personal connection to a religious way of life sometimes have difficulties in recognizing religious identities and accepting their influence in schools and kindergartens. Even teachers with positive attitudes towards diversity in general sometimes find it difficult to empathize with religious families and understand their needs and wishes. (Rissanen, Kuusisto & Kuusisto 2016; Kuusisto 2011; Kuusisto & Lamminmäki-Vartia 2012.) In regard to religion, teacher's ideals of colour-blindness appear to be particularly prominent. In the Finnish context, religious minorities are among the forms of diversity that are most poorly recognised by teachers (Jokikokko 2005). However, recognition and appraisal of students' religion and culture increases their dignity and feeling of belonging, contribute positively to personal development, and are important strategies in fighting against the educational disadvantages of some minority students (Ipgrave 2010; Byfield 2008). Thus, in addition to intercultural sensitivity, teachers' 'pedagogical toolkit' is in dire need of the interreligious sensitivity component (Kuusisto, Kuusisto, Rissanen & Lamminmäki-Vartia 2015).

It has also been acknowledged that there are some important qualitative differences between intercultural and interreligious sensitivities. According to Abu-Nimer (2001), Bennett's model of intercultural sensitivity operates at a general level and overlooks religion, even if religion typically forms an essential part of cultural identity. Abu-Nimer states that religion can even become a hindrance to the development of cultural sensitivity, as it exerts such a strong

influence on individual cultural behaviour and on the views of people and groups (Abu-Nimer 2001; Kuusisto & Lamminmäki-Vartia 2012). Similar to Bennett's model, Abu-Nimer's *Model of Interreligious Sensitivity* (2001) also includes *religiocentric* and *religiorelative* orientations. However, according to Abu-Nimer, the levels of adaptation and integration are not reasonable or desirable goals for interreligious sensitivity, as the self-understandings and truth claims of religions differ from cultural claims (Abu-Nimer 2001, 687–701). Thus, in an educational context, the goal would be to reach the level of acceptance of religions or even acquire some adaptation skills, such as empathy (Holm, Nokelainen & Tirri 2014). However, religious adaptation in terms of integration and syncretism is beyond the purpose of education, and could be regarded as practices that misrecognise the religious identities of many students.

Although intercultural and interreligious sensitivities only form a part of a bigger whole of moral sensitivities (Tirri & Nokelainen 2011), the lack of them can generate significant harm through oppressive and disregarding attitudes and practices. Both intercultural and interreligious sensitivities can be seen to set the very foundation into the development of intercultural and interreligious competences in teacher education. (Kuusisto, Kuusisto, Rissanen & Lamminmäki-Vartia 2015.) It is also important to recognise their qualitative differences in order to understand the particular issues related to dealing with religions in education. Interreligious sensitivity, and the increased ability to recognise religious differences that comes with it, forms a ground for teacher's interreligious competence, but there are good reasons to begin a more careful consideration of other factors also —behavioural and cognitive aspects —that could be included. Furthermore, development of the students' interreligious competence in teacher education is an issue that critically deserves more attention in both research and practice.

## Finnish societal context

### Multicultural and multireligious Finland?

In Finland, there is an official multiculturalist orientation which means, for example, that there are efforts to meet the cultural needs of immigrants in schools. However, there seems to be a gap between official idealistic principles and the practical reality (Saukkonen 2013). Many teachers think that the atmosphere and attitudes in Finnish schools are still characterized by a dominant monoculturalism. In Finland, as well as in other Nordic countries, the combination of Protestantism and secularism has been distinguished as “Secular Lutheranism”, which seems to hold the position of a hegemonic worldview, setting the more confessional Lutheran worldviews into the position of “Other” (Poulter, Riitaoja & Kuusisto 2015). Despite the increasing religious pluralization during the last few decades, mainly explained by secularization and immigration, most Finnish people (roughly 70 percent today) still belong to the Evangelical Lutheran Church of Finland. However, in comparison to other European countries, Finland has only a small number of strongly religious citizens and also relatively few who would consider themselves completely non-religious. Attitudes towards intense religiosity are relatively negative, and exclusivist religious views are regarded as forms of intolerance. However, Christianity as a tradition is valued positively, which probably reflects the exceptionally strong link between the Lutheran religion and national identity in Finland. Furthermore, in Finland, attitudes towards Muslims are among the most negative in Europe (Ketola 2011a; Ketola 2011b).

## Developing teacher's intercultural and interreligious competence in Finnish teacher education

Finnish teacher education is highly regarded, partly due to Finnish pupils' academic achievement in international comparisons such as PISA. Both primary school teacher education (MA in Education) and kindergarten teacher education (BA degree) are university degrees. Furthermore, subject teachers complete a master's degree in their subject, which also includes teachers' pedagogical studies (60 ECTS). Teacher education curricula are research based, and the aim has been to educate research-oriented, autonomous and reflective teachers who are willing to continuously develop their teaching (Tirri 2014). Thus, the level of expertise in teacher education, in general terms, is excellent. However, societal values and aims are naturally always reflected in university education, too, both in the outlined aims and contents and, to some extent, in the emphases and other implementation factors of each individual staff member.

Continuous development of the teacher education system is needed since new challenges arise as society changes (Hökkä & Eteläpelto 2014). One of the most important challenges is the increasing multiculturalism: according to the PISA 2012 data, the achievements of first and second generation immigrant students in Finland are on an alarming level (Harju-Luukkainen et al. 2014, 106). Furthermore, according to previous research, even though Finnish teachers typically view themselves as being responsible for the personal and ethical growth of their students, they need more education in the domain of moral sensitivities including intercultural and interreligious sensitivity (Tirri 2011; Hanhimäki & Tirri 2009; Tirri & Nokelainen 2011). There is some variation in the aims and contents of the courses related to intercultural education depending on the particular institutions offering teacher education degrees. In primary school teacher education, the variance is significantly smaller. This is perhaps partly due to the fact that the curriculum guidelines



are perceived to streamline the directions of primary education much more specifically than for teaching specific age groups, where the national guidelines are not equally binding.

For example, at the University of Helsinki in 2014, all student teachers had an introductory course in encountering diversity as part of their pedagogical studies, covering a range of topics from cultural diversity and inclusive education to special educational needs. The course aims included, for example, providing students with an increased understanding of people's different cultural and language backgrounds and "to see them as individuals in their community, also in multicultural situations." Furthermore, the course contents included, for example, "The elementary notions of multicultural education, the documents guiding it as well as the different approaches, attainment of social justice, different families, cultures and values, cultural capital and cultural identity, different worldviews, religions, intercultural communication and the everyday matters of multicultural school and Kindergarten." (University of Helsinki, 2014.) However, as mentioned above, there is some notable variance between Finnish universities.

The differences are significant in relation to kindergarten teacher education in particular. This is unfortunate, as research indicates a great deal of uncertainty among the educational staff in the field, e.g. among both the educational staff and kindergarten heads, who also voice a hope that the institutions' educators would better equip student teachers with the knowledge and means to relate to intercultural and inter-faith settings and to implement worldview education (Lamminmäki-Vartia & Kuusisto 2015). This is an important part of teacher education, not the least because according to a study, among the Finnish teachers, it is the kindergarten teachers and primary school teachers who hold the most negative attitudes towards Muslim pupils and the supporting of their integration (Rissanen, Kuusisto & Tirri 2015). In the Finnish educational system, these are the age groups typically taught by one teacher in particular,

being responsible for the teaching of all subjects; in comparison to the older age groups who are typically taught by specialized subject teachers (Rissanen, Kuusisto & Kuusisto, 2014). This also means that if an individual teacher is particularly opinionated towards a certain cultural or religious group and has not been able to reflect and work on his or her attitudes, such presuppositions may be compellingly visible in his or her educational approach (Kuusisto & Lamminmäki-Vartia 2012).

## Developing Finnish in-service teachers' and student teachers' intercultural and interreligious competences

### In-service teachers' and student teachers' intercultural and interreligious sensitivities

In order to study as well as to help individuals reflect and develop their intercultural and interreligious sensitivities, Holm, Nokelainen and Tirri (2009; 2011) have created an *Intercultural Sensitivity Scale* (ICSS) and an *Interreligious Sensitivity Scale* (IRRSS). The former is based on Bennett's (1993) and the latter on Abu-Nimer's (2001) models of intercultural and interreligious sensitivities. Items of both measurements have been created based on lower secondary school students' authentic statements about cultural and religious differences (Holm 2012). Previous studies of Finnish lower secondary school students have confirmed the validity and reliability of both instruments (Holm, Nokelainen & Tirri 2009; 2011; 2014; Kuusisto, Kuusisto, Holm & Tirri 2014; Kuusisto, Kuusisto & Kallioniemi 2014).

The ongoing project at the Universities of Tampere and Helsinki aims to test and develop these instruments for adult respondents, especially teachers, from different backgrounds, religions and cultures, and to allow the use of these instruments in a multicultural

society and in cross-cultural studies (Kuusisto, Kuusisto, Rissanen, Holm & Tirri 2015; Kuusisto, Kuusisto, Rissanen & Lamminmäki-Vartia 2015). These types of measurements will provide important knowledge about attitudes at schools and universities as well as offer valuable tools for self-reflection. The instruments can also help teacher educators design courses, choose methods and guide discussions to enhance reflections on and development of intercultural and interreligious competence.

The preliminary findings indicate that applying these instruments to adult samples needs further methodological adjustment. The original instruments measure responses to either cultural or religious issues in five categories: (1) *Denial*, (2) *Defence*, (3) *Minimisation*, (4) *Acceptance*, and (5) *Adaptation*. Denial, Defence and Minimisation reflect *ethno-/religiocentric* orientations and Acceptance and Adaptation reflect *ethno-/religiorelativistic* orientations. However, among in-service and student teachers the ICSS revealed three intercultural attitudes towards cultural differences: 1) negative ethnocentrism in terms of defensiveness, 2) positive ethnocentrism in terms of minimization and 3) ethnorelativism in terms of acceptance (Kuusisto, Kuusisto, Rissanen, Holm & Tirri 2015). Further, both in-service and student teachers were more sensitive than pupils, which could be seen as indicating the learnability and developmental aspect of this moral sensitivity but also the attitudinal gap between teachers and students.

## Learning experiences on a pilot course

### *Data and methods of the study*

We have also studied student teachers' learning experiences in a theory-based course on cultural and religious diversity in schools and kindergartens (Rissanen, Kuusisto & Kuusisto 2016). This was an action-based research (see, e.g., Brydon-Miller & Maguire 2009)

that was conducted in Tampere in spring 2014. A total of 31 student teachers studying early childhood education (n=7), primary school education (n=13), subject teacher education (n=6) and adult education (n=5) participated in the course that was not part of the curricula of any of these programmes, but was planned and taught for the first time with a purpose to utilise experiences from this course in the curriculum development processes of the department.

The course was voluntary and consisted of five sessions, four of which were founded on more typical theory-based teaching and discussions, and one of which included a panel discussion with invited participants—mostly teachers with considerable experience working in multicultural schools or kindergartens. Different forms and contents for the lessons were chosen to examine the ways in which the student teachers experience the relevance of these different themes for the development of their intercultural and interreligious competence, and what types of learning methods they regard as most beneficial. The themes covered during the course were 1) teachers' intercultural and interreligious competences and sensitivities, 2) cultural and religious diversity in Finnish schools and kindergartens with a special focus on Islam, 3) stereotype threat and supporting the learning of diverse students, and 4) politics of recognition and implications on the policies and practices of schools and kindergartens.

At the beginning of the course, the student teachers were asked to participate in this study using course diaries and were told that the purpose of the study was to analyse their learning experiences and use the results in curriculum development. All of the student teachers wanted to participate. In general, as was learned later from the course diaries, they were frustrated with the insufficient ways in which issues related to diversity had been dealt with in their previous studies. Thus, they were very motivated to participate in this type of participatory action research, the purpose of which was to include students in the practitioner inquiry (Brydon-Miller & Maguire 2009). The research questions for the study were: 1) *What did students learn*

*during the pilot course according to the self-reported measure? 2) What did the students report as contents that had influenced their learning?*

During the course, the student teachers kept a course diary in which they reflected on the contents of the lessons from their own perspective and in light of selected literature, more specifically, a list of articles they had to choose from. They were also asked to explicate their learning process in these course diaries. Furthermore, the course diary included a pre-task in which imaginary cases from the everyday life of multicultural schools or kindergartens were described and the student teachers were asked to reflect on how they would act in these types of situations. The student teachers uploaded these pre-tasks to the virtual learning platform before the course, and at the end of the course they were asked to reflect in their diaries on how and why they would like to change or develop their initial responses in light of what they had learned. The students were also asked to give anonymous feedback on the course. The data for this action research included the course diaries as well as the separate feedback forms. Student teachers' learning experiences as reflected in the data were analysed by means of inductive qualitative content analysis. According to the student teachers' self-evaluations, their learning processes during the course resulted in changes in their 1) *beliefs and attitudes* 2) *practices of dealing with difference*, and 3) *self-reflection and self-efficacy*.

### ***Self-evaluated changes in attitudes and practices***

The attitudinal changes of the student teachers during the course include increased understanding and empathy, increased interest towards cultural and religious diversity, increased recognition of religion and an understanding of the need to balance between similarity, individuality and difference in dealing with diversity. In previous literature, influencing student teachers' beliefs and attitudes towards diversity has been presented as one of the most challenging tasks in teacher education (Garmon 1996; Causey, Thomas &

Armento 2000). In this study, we noticed that most of the attitudinal changes reflected in the course diaries seemed to be induced by merely an increased knowledge about diversity. Most of the student teachers knew very little about Islam and its internal plurality before the course, but knowledge of Islam and its influence on the everyday life of Muslim students' and their families led to more understanding towards these families. Furthermore, this knowledge seemed to have raised a willingness to learn more and it also led to improved ability to recognise religious identities in general, as can be seen in the reflections of this student teacher:

Even though I have some knowledge of Islam from my courses in religious studies, the more I familiarise myself with Islam, the more I realise how little I know about it. Much of my knowledge about Islam is through what I read only, but my understanding of the everyday life of people and the role of religion in it is very sporadic. Somehow, I have previously disregarded religion considering it a private matter. I don't have personal religious conviction and in Finland religion is commonly regarded as a personal matter. This is why I only recently have begun to realise what an important part of identity religion can be for some people, and it cannot be separated from their everyday life, or be regarded as an inner, personal issue (student 1.). (Rissanen, Kuusisto & Kuusisto 2016.)

Altogether, the results of the study indicate a need to include teaching about diversity as an important aspect of developing teachers' intercultural competence. In this short course, a decision was made to concentrate only on one minority group, which in this instance was that of Finnish Muslims. The student teachers considered Islam and Muslims in Finland as one of the most important contents of the course but would have wished for a similar type of discussion on other cultural and religious minorities, too. Furthermore, it should be noted that the increased knowledge of diversity did not have a

positive influence on the attitudes of *all* the student teachers, i.e. the perceptions of Muslim families as demanding and difficult seemed to be reinforced. Thus, the observations in previous studies of earlier experiences, beliefs and personal traits functioning as a filter for learning (Garmon 1996; 2004) were, in some respect, also confirmed by this study. However, for most students, their increased understanding and empathy correlated with a (self-evaluated) behavioural change towards more dialogic and attentive ways of dealing with difference; in particular, their willingness to negotiate with the parents and learn to understand their educational ideals had increased.

All in all, the course seemed to have induced both an attitudinal change of increased recognition of religion as well as changed ideals of how cultural and religious diversity should be dealt with in practice. The focus had shifted towards positive recognition and seeing diversity as a resource. One interesting finding of the study was the strong emergence of the ideal of neutrality in student teachers' pre-tasks. When reflecting on their ways of dealing with religious diversity, especially, the student teachers' statements related to a post-modern liberal and relativistic worldview (for example, students should be taught that all religions are equally true or that religion is a private matter), but represented these as acts promoting neutrality in education. These observations support the view that in Scandinavian contexts, strong ideals of the perceived 'ideological neutrality' in education exist, while the mediation of fundamental national values based on liberal Protestant secularism is regarded as an important educational aim (Berglund 2013; Rissanen, Kuusisto & Tirri 2015; Poulter, Riitaoja & Kuusisto 2015). Furthermore, these views also reflect the negative attitudes of Finns to exclusivist truth claims and visible forms of religiosity (Ketola 2011b).

However, these ideals seemed to be, in some respect, questioned by the student teachers during the course due to increased understanding of Muslim identities as well as discussions on *politics of recognition* (see, e.g., Taylor 1992). One of the topics of the course

was politics of recognition, the implications of which in educational contexts were discussed and compared to politics of similarity and politics of difference. Politics of recognition is grounded on the idea that identities are defined in dialogue with the attributes other people see in us, and it encourages an open and interested attitude towards difference but does not entail an uncritical “celebration of diversity” (Taylor 1992). These discussions led the student teachers to change some of their ideals related to very practical questions in schools and kindergartens. For example, instead of idealising “neutral” festivities and “colour-blind” practices, the student teachers had more multiculturalist ideas in the post-task. Their ideals had shifted from restricting and “thinning” the educational content for everyone and “the culture of cutting off” (Kalliala 2001; 2005; Kuusisto & Lamminmäki-Vartia 2012) towards seeing the value of different cultures and religions as resources, also. This change is reflected in the course diary of a student teacher who already had quite a lot of teaching experience:

My aim should not only be to adapt them (immigrant families) to the Finnish kindergarten, but also to enrich my class with their knowledge and practices. Many lost opportunities, where I could have paid more attention to multicultural children and their families, come to my mind. Surely I have acted with my best understanding and skills in these situations, but now I feel I have almost offended a couple of families with my ignorance. When I go back to work, I hope I will remember what I have learned here, be able to act better and be more conscious of the different habits of families. I am very happy I participated in this course (student 2). (Rissanen, Kuusisto & Kuusisto 2016.)

Furthermore, increased knowledge generated through recent research results concerning the impact of recognition to the academic achievement of minority groups (see, e.g., Byfield 2008; Ippgrave 2010; Cohen, Garcia, Apfel & Master 2006), the course had also changed



the student teachers' ideas of the practices to support minority students' learning and achievement. Before the course, most of the students regarded only language issues as the main reason for the achievement gap, and they wanted to concentrate mostly on them in their practices. However, after the course they had added recognition as well as the promotion of commonality and cooperation to their solutions.

### *Increasing self-awareness and self-efficacy*

In addition to self-evaluated changes in student teachers' attitudes and practices, important processes during the course included improvements in self-awareness and self-efficacy. The pre-tasks gave the impression that student teachers' ideals of dealing with difference were mainly focused on how they should understand and communicate with *others*; however, during the course they began to understand the significance of being aware of their own worldview, attitudes and ways of acting to their intercultural competence. The student teachers' inability to see the ideologically laden and culturally rooted nature of their own ideals of dealing with difference, as brought forth in their pre-tasks, illustrates the need for better awareness of one's own worldview (see also Kuusisto & Lamminmäki-Vartia 2012). The majority culture tends to have blind spots and without the willingness to self-reflect, values related to liberal Protestant secularism could, in this way, become confused with neutralism and lead to new forms of imperialistic educational practices (see also Rissanen 2014, 142-144; Berglund 2013; Poulter, Riitaoja & Kuusisto 2015). All teachers, whether they do it intentionally or not, transmit values in the classroom — the tone of voice or even silence as an answer to a child's religious question, for example, is enough for this type of situation to evolve (e.g. Holm 2005). Thus, particularly in multicultural contexts, the willingness of teachers to reflect and work on their own worldviews and the impact of cultural or religious

ideals, beliefs and values in their pedagogical approach and the actual educational practices is an essential part of their intercultural and interreligious competence (see also Kuusisto & Lamminmäki-Vartia 2012). In the course of this study, the student teachers were asked to reflect on their own values, worldviews and the influence of these on their educational ideals and pedagogical practices. This was regarded as a starting point for developing sensitivity towards others. M.J. Bennett's six-stage theory of intercultural sensitivity (Bennett 1993, 2008) appeared to function as a useful pedagogical tool in inducing student teachers' self-awareness. In the first lesson, the students were asked to reflect on their own thinking in the light of Bennett's theory. This had provoked intensive and long-lasting thinking processes which was illustrated in the learning diary data. Many of the student teachers considered the reflections on Bennett's theory to be an important wake-up call that made them aware of flaws in their own thinking and engendered a willingness to reflect critically on their own attitudes. This was also the case in the experiences of the following student teacher:

The most important outcome of this course that I will surely remember forever was Bennett's developmental model, and how I realised I might not be as interculturally sensitive as I had thought and hoped. It woke me up to actively reflect on how I could develop my openness and my ability to accept and pay attention to those who see things differently. (student 3) (Rissanen, Kuusisto & Kuusisto 2016.)

Furthermore, the course seemed to have a two-way impact on the student teachers in that, on the one hand, their self-awareness and constructive self-criticism increased and they began to feel a stronger need to develop their intercultural and interreligious competences. On the other hand, they also achieved a stronger sense of self-efficacy and more trust in their ability to deal with diversity in practice. For example, they felt a need to seek help from other members of

the school/kindergarten staff in challenging situations and started to reflect on the practices of their work communities from a more expert perspective in light of the theoretical knowledge they had achieved during the course. It was interesting to notice that the ability to argue for their personal views based on theoretical grounds seemed to increase the student teachers' feelings of competence. This was especially so for those students with more practical experience and those from primary school teacher, subject teacher and adult education programmes. The way in which the increased theoretical understanding seemed to support these student teachers' confidence and sense of efficacy probably reflects the academic emphasis in the teaching profession in Finland: many teachers do, indeed, want to develop their professional identities as academic experts (Tirri 2014).

## Discussion

Bearing in mind the role of religion in contemporary acute political issues, barriers built between secular and religious citizens, as well as the sacred nature of religious identification for some students, it is reasonable to state that besides intercultural sensitivity, teachers need interreligious sensitivity. Interreligious sensitivity enables recognition of religions/religious identities and forms a basis for interreligious competence. However, in addition to the importance of paying more attention to the notion of interreligious sensitivity, we think it is important to develop an understanding of interreligious competence in which its cognitive and behavioral dimensions would also be included.

On the basis of our studies, we suggest some factors relevant in developing teachers' interreligious competence. Knowledge of religions and especially of "lived religion", i.e. the daily realities of religious individuals and groups, seems to be of great importance in supporting student teacher's empathetic attitudes and willingness to

openly encounter religions. Furthermore, understanding the internal plurality of religious traditions clears confusions and supports the willingness to encounter students and their families as individuals. By developing the cognitive dimension of interreligious competence through increasing knowledge of religion, it is possible to develop the behavioural dimension. In the pilot course of our study, the student teachers' increased knowledge enhanced their willingness openly communicate with students and their parents about their religious needs/wishes without considering them as taboos or private matters. Being interreligiously competent also requires that teachers understand issues and negotiations related to the public role of religion in contemporary society and are able to mediate these negotiations constructively in their own multi-religious educational communities.

One important implication of our study is the need to help student teachers understand that the views they hold about religion are not neutral but based on a certain ideological framework, and they should learn to see when these views contradict the convictions and truth claims of some traditions. For example, when ideals of tolerance are based on the liberal relativistic framework, they may contradict the ideals of tolerance based on the teachings of a religious tradition. To be able to support their students who often balance between these different frameworks and whose identity negotiations are complicated by the conflicting demands from school and their families, teachers need to understand the different frameworks and also be able to reflect on their own stance. An important factor in interreligious competence is the ability of teachers to reflect on their own worldviews and the cultural or religious roots of their own ideals and values. Thus, despite using the term interreligious competence, we acknowledge the need to pay equal attention to both religious and non-religious worldviews and support teachers' capacity to recognise their influence as part of their own and their students' identities (see Kuusisto, Kuusisto & Kallioniemi 2014; Kuusisto & Lamminmäki-Vartia 2012).

We are rather optimistic about the possibilities to develop these competences in teacher education. Our studies, as well as our experiences as teacher educators, have convinced us of the strong motivation of student teachers, who have experiences in working in multicultural contexts, to develop their intercultural and interreligious competences as part of their studies. Despite the proven power of such courses in teacher education that combine extensive field experiences with personal reflections, much can also be done in theory-based courses. In research-based teacher education, theories can be used as pedagogical tools that induce self-reflection and help teachers do research and develop their pedagogical practices, and in this way increase their feelings of competence. A good example of this in our case course was how the developmental model of intercultural sensitivity by M.J. Bennett induced very intensive self-reflections in the student teachers. However, in order to further develop the notions of teacher's intercultural and interreligious competence as well as to increase understanding of the most effective ways of developing them in teacher education, more research is needed.

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# Multiculturalism as a resource

## Educating teachers with immigrant backgrounds to serve as specialists and valuable resources in increasingly multicultural Finnish schools

*Maija Yli-Jokipii and Jaakko Vuorio*

### Introduction

The purpose of this chapter is to introduce the implementation and impact of the *Kuulumisia* project carried out at the School of Education<sup>1</sup> at the University of Tampere in Finland. This is an ongoing project under which the School of Education provides education and training towards teacher qualification for students with an immigrant background. In particular, we will explain the background and possibilities of such education as well as throw light on the challenges

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<sup>1</sup> Name of the Faculty of Education was School of Education from 2013 to 2019.

and opportunities faced by teachers with an immigrant background. Furthermore, selected findings of the background research conducted by Jaakko Vuorio (2015) for his master's thesis are interwoven in this chapter.

A brief account of the terminology employed in this chapter is in place here. First, regarding the title of the project, the Finnish word *Kuulumisia* is a plural form that may be understood in two ways, depending on the context. In everyday conversation, it often means 'news' or 'greetings' whereas in the present context this word may be understood as the generic plural of the singular word *kuuluminen* 'a sense of belonging' or 'integration'. Thus, the title of the project may literally be understood in English as 'senses of belonging' or 'integrations'. In the present discussion, we will of course be referring to the project in its original Finnish form, but may, when feasible in English, use it as a modifier to a noun, e.g., the *Kuulumisia* students. Second, the terms 'immigrant' and 'individual with an immigrant background' are multi-faceted and their use is not unproblematic. Even so, the present purpose is not to contemplate on the scope of these terms nor argue to whom they may rightfully be employed to refer. Instead, we use these terms to describe the students in the *Kuulumisia* project; in its selection criteria, the term 'individual with an immigrant background' is defined as an individual who has completed (or received the minimum of two years of) his or her school education outside Finland in a language other than Finnish, Swedish, or Saami.

### Kuulumisia: Underlying rationale

Kuuluminen, a sense of belonging [...] is a basic factor in the build-up of communities and in the status of their people. A sense of belonging develops through two ways. First, it grows through discourse, that is, how we and others are presented. Second, it grows in societal interaction, in other

words in situations involving actions and operations that portray belonging. (Lehtonen & Löytty 2003, 14. Translated from Finnish by the authors.)

Besides the foregoing definition, one may presume that the title of the *Kuulumisia* project refers to David Morley's article (2003) entitled *Kuulumisia – aika, tila ja identiteetti medioituneessa maailmassa* [*Belongings – time, space, and identity in the mediacentred world*]. In the article, the writer seeks an answer to the question of how we should interpret the variations of thinking regarding the concept of 'home' that have resulted from the extensive changes in the patterns of communication and from the physical mobility in our current "unstable" (or even deterritorialized) world. When talking about home, Morley has in mind the symbolic aspects of home both in the narrow sense, as a physical place (household) and in a wider spatial sense (Heimat). These form, on different geographical scales, diverse 'statuses of belonging' or 'statuses of identity', such as local, national or transnational communities in which people feel 'at home' (Morley 2003, 155). Morley's text is thought-provoking, because the idea of the locality of continuing education targeted at teachers with an immigrant background or teacher candidates with an immigrant background aptly describes the philosophy behind the *Kuulumisia* teacher qualification training and education programme.

The *Kuulumisia* project was launched in 2009 at the Faculty of Education at the University of Tampere, Finland, thanks to the special funding under the Specima programme granted by the Finnish Ministry of Education and Culture. The project has from the start been built around teacher qualification training and education programme for teacher candidates with an immigrant background and for individuals with an immigrant background who are already employed in teaching and education. Besides pursuing to strengthen the participants' comprehensive teacher and educator identities, the *Kuulumisia* project provides them with a means to qualify as a

teacher in the changing operational environments of the Finnish school system.

The *Kuulumisia* project is a significant forerunner in terms of internal reform and the societal impact of the university. Indeed, the project addresses a number of demands placed on universities today, such as societal influence and responsibility, research-based teacher education, integration of immigrants, and methods of encountering the great challenges for reform in Finnish civil society. Thanks to its nature as an international education programme *per se*, *Kuulumisia* brings about novel impressions of what being a teacher in a multicultural society entails. After all, the social dimension is in the foreground in being a teacher.

When designing the contents and forms of the training and education programme, we have taken seriously the fact that societal change is a reality and academic teacher education needs to meet new types of requirements. We have tried to find flexible and case-specific solutions to help students obtain teacher qualification, without compromising the academic level and high quality of the programme. As Luukkainen (2004, 79) points out, in trying to meet the challenges brought about by changes in society, teacher education needs to provide a processing basis for teachers and teacher communities. Such challenges apply to basic and continuation education alike (Luukkainen 2004, 79). Thus, the purpose of the *Kuulumisia* project is to provide professional qualification for immigrants who have academic education but who in Finland find it difficult to find jobs to match their education and competence. The project addresses the increasing need to reinforce multicultural education and specialist knowledge of immigrant-oriented matters in basic and general education as well as in education at large, all the way to the multiple forms of adult education, including liberal adult education.

The background ideas of the *Kuulumisia* project draw on the views presented by Luukkainen (2006, 206–207) and Mirja-Tytti Talib (2005, 23–24). They claim that being a teacher incorporates the values

of the surrounding society and that a teacher repeats these through the operations of the school. Because teachership is also culture-specific, it varies in different societies and therefore it is not easy to make comparisons. Nevertheless, it seems that societal expectations towards what teachership entails have increased. Similarly, society's expectations towards a teacher carry a heavier content load compared to an individual teacher's own notion of the expectations that society places on him or her.

The *Kuulumisia* project pursues to renew the notions of teachership, of teacher identity and of the status of immigrants in society. At the same time – and not least because of the prominent public and cultural roles of teachers – it makes a significant contribution towards updating the notions of what being Finnish entails. This is how one of the students felt about the programme:

One method to achieve many good results is to be able to employ immigrants in the type of work that matches their previous education. An outstanding example of this is employing teachers with an immigrant background to teach in the student's or students' native language and to teach the student's or students' native language. It has had a very positive effect when teachers with an immigrant background have been given the chance to work as links between cultures, as teachers, educators, and developers of cooperation between school and home.

I dare say that among the important measures introduced for the benefit of immigrants, this type of training project stands out as the most important. The significance of the matter can be approached from several directions: The project has helped the immigrant teachers to be more confident with their own skills and knowledge, and with the possibility of continued employment, their immigrant pupils will view their own future prospects more positively because they see that education and achieving a degree make a difference no matter where in the world



you live. At the same time, there is a positive turn in the attitude of the school personnel towards teachers with an immigrant background. (Kuulumisia student 2012–15; student's/students' native language teacher; basic education. Translated from Finnish by the authors).

The field of education offers employment for the most educated immigrants, because a master's degree is a requirement for a permanent teacher's position in Finland. When teachers with an immigrant background do not have formal qualification for teaching in Finland, their sense of detachment and temporariness may easily be reinforced. However, even if they have duly completed the required studies and achieved formal qualification in their own respective countries, additional studies are compulsory before obtaining formal qualification in Finland. (Forsander 2002, 156–157.) Indeed, in Finland the profession of a teacher is strictly regulated and monitored through legislative measures, including overt educational requirements. For example, the posts of primary school and subject teachers are in Finland classified as regulated professions, which means that a certain academic degree or certain academic studies are a prerequisite for formal qualifications for such posts. Regulated professions include public sector posts, duties, and professions subjected to obtaining and holding professional practice rights. The Finnish National Agency for Education is the competent authority responsible for granting professional practice rights for prospective primary school and subject teachers.

Our main cooperation partners and interest groups include, in addition to the Ministry of Education and Culture, the Universities of Jyväskylä and Turku, specialists in other Schools at the University of Tampere, especially the School of Communication, Media and Theatre, the School of Social Sciences and Humanities, and the School of Language, Translation and Literary Studies. The large-scale objective of the programme is to have the participants achieve,

through a long-term and goal-oriented process, professional equality and competence both in the labour market and in the school staffrooms. Our immediate point of departure is the effort to expand and facilitate the students' chances to obtain qualification through an education process in which their prior knowledge is identified and recognized. In a word, the goal of this training programme is to provide the students with wide-stretched pedagogical competence to work as teachers in a multicultural society with changing and diversifying need for workforce.

By August 2015, a total of 138 individuals with an immigrant background attended the *Kuulumisia* teacher qualification training and education programme. On the whole, the countries of origin of our *Kuulumisia* students vary considerably, as the following list shows: Albania/Kosovo, Algeria, Argentina, Austria, Azerbaijan, Belorussia, Belgium, Canada, China, Columbia, Estonia, France, Germany, Ghana, Hungary, India, Iran, Iraq, Israel, Italy, Japan, Kazakhstan, Libya, Mexico, Moldavia, Poland, Russia, Somalia, Spain, Switzerland, Syria, Thailand, Tunisia, Ukraine, and Uzbekistan. Most of the participants come from countries outside the EU or ETA.

When entering the programme the students minimally hold a lower university degree (bachelor).<sup>2</sup> Frequently, the main subject of the degree is the same as the subject that the individual pursues to teach (henceforth subject of instruction). In basic education, the minimum requirement for subject teacher qualification is 60 ECTS credits. As a rule, the student must already have completed these before starting the *Kuulumisia* studies. The subjects of instruction range between language studies and science, and between ethics and artistic or practical subjects. A large number of students have

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<sup>2</sup> However, since 2015, the minimum requirement for this teacher qualification training and education programme is an upper university degree, i.e. master's degree, as outlined by the Ministry of Education and Culture, which provides the funding for the programme. This requirement screens out a large number of applicants from countries in Africa and the Middle East, because their academic degree is frequently taken to be a synonym for a lower university degree.

a degree in a language; the most common of these are English, French, Russian, and Spanish. The ensuing list gives an example of the diverse qualifications previously obtained by our students. Language teacher (English), Bachelor of Music, Teacher of Finnish, Teacher of Mathematics and Physics, Bachelor of Arts (Art), Biologist and Teacher of Biology, Nurse, Master of English Translation and Interpreting, Master of Arts (French Language and Literature), Psychology, Study of Finno-Ugric Languages and People, Chinese Language and Literature, Teacher of Russian.

A large number of our students will eventually be employed as language teachers, primarily teaching students' native language, i.e. first language. Henceforth, we will be using the term MAI teacher for such language teachers.<sup>3</sup> It is occasionally the case that individuals with an immigrant background end up as MAI teachers whereas their university degree might originally be completed in a different field altogether. This is because it is practically impossible to obtain qualification in Finland for certain languages of instruction, such as Somali, Kurdish, Vietnamese, and Albanian, let alone smaller MAI languages, because Finnish universities do not offer studies in them. Thus, some *Kuulumisia* students work as both MAI teachers and foreign language native teachers, while some teach an additional foreign language, such as English as first foreign language, Russian as second foreign language, or Russian as a native language (MAI). We also have a relatively large number of students with an immigrant background who currently work as teachers of Finnish but they tend to be employed in integration training for immigrants rather than in basic education; a post in the latter requires a degree in Finnish obtained in a Finnish university. In practice this means native level skills in Finnish.

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<sup>3</sup> The term derives from the Finnish *maahanmuuttajan äidinkieli* 'immigrant's native language', which is used when referring to the subject of instruction. In English, the terms *heritage language* and *community language* exist, but they are somewhat problematic and will not be used here.

A further employment opportunity for *Kuulumisia* students, but not widely known, lies in native language (remedial) teaching. Receiving native language support in their studies tends to be particularly beneficial among the pupils who have recently arrived in the country and are being transferred from preparatory instruction to basic education. Mathematics, natural sciences, and humanities, especially, already contain demanding substance matter on the upper levels of primary school and lower secondary school, and therefore it is worthwhile to improve immigrant pupils' learning process of these subjects by giving remedial and complementary native language instruction. Besides helping the pupils to learn the subject matter, such instruction enhances the development of both Finnish and the pupil's native language. There are no formal qualifications for native language teachers. Yet, on top of their pedagogical studies contained in the programme, several *Kuulumisia* students who work as native language teachers also complete the multi-disciplinary studies required for primary school teacher qualification.

Moreover, *Kuulumisia* students may be employed in giving religious education to denominational minorities, such as Islam. Also, several individuals complement their Muslim education at the University of Helsinki either simultaneously with or after their *Kuulumisia* studies. On the whole, *Kuulumisia* students have a highly positive attitude to their education and are continuously striving to complement their studies.

## Flexible solutions and operating models

The *Kuulumisia* project is aimed at individuals who have already completed a university degree. Since many of the *Kuulumisia* students have either studies in education or considerable experience in teaching – some of them have both – we have concluded that the skills and competence already accumulated need to be recognized.

Indeed, the *Kuulumisia* teacher qualification training and education programme has from the start made use of the AHOT (Recognition of Prior Learning) method, which allows for earlier knowledge to be recognized. In practice, the student brings along his or her existing academic certificates and certificates of his or her work experience from Finland and from abroad. All this is projected against the contents of the programme, heeding to each student's individual skills and needs. Thus, an individual study plan (HOPS) is made for the student to follow. Thanks to the flexibility embedded in the HOPS procedure, the *Kuulumisia* programme offers the option of carrying out complementary studies of 15 ECTS credits for students who have obtained teacher qualification in their countries of origin and who, in accordance with the recognition and assessment of prior learning by the Finnish National Agency for Education, must complement their studies accordingly in order to obtain qualification for employment as a teacher in Finland.

Flexibility and heeding to students' individual situations are also visible in the practical realisation of the programme. Much of the studies are carried out on a distance and multi-modal basis through the electronic learning platform of the University of Tampere, accessible at [Learning.uta.fi](http://Learning.uta.fi), whereas contact teaching takes place during weekends. This means that it is possible to conduct studies under this programme whilst being employed in other locations than Pirkanmaa, the region around the city of Tampere. Actually, a large number of students come from places other than Tampere and its vicinity, and we could indeed claim that our students come not only from around the world but from around Finland as well.

Both pedagogical and multidisciplinary studies at the University of Tampere include supervised student teaching. Yet, the *Kuulumisia* students deviate from degree students in the sense that in general their student teaching takes place in the field and not in the university's teacher training school. There are two major reasons for this. Firstly, a considerable number of *Kuulumisia* students live outside Tampere and

thus complete their teacher training in schools located in their home area. Secondly, many *Kuulumisia* students actually teach a subject, often a (native) language that is not included in the curriculum of the teacher training school. This solution has proven to have certain benefits; it enables the students who already have a teaching post to complete their student teaching programme in their own place(s) of employment whereas the students who are not yet employed in teaching have the opportunity to become acquainted with local schools, make contacts and perhaps eventually find employment in this way. The university lecturers who are responsible for the *Kuulumisia* programme visit the schools in question to observe and monitor the student teaching. This procedure enables the *Kuulumisia* teacher training programme to gain wider visibility and initiate networking that may also benefit future students. Such networking has an important role in improving the students' employment situation because apart from officially published information, it is frequently the first network, and the only network to many, that serves as a source of information concerning vacant jobs and qualified teachers.

Moreover, networking provides the responsible university lecturers a comprehensive view of the current state of Finnish schools – and the Finnish school. During the school year, the lecturers of the *Kuulumisia* programme visit dozens of schools all over the country and observe classes of varied subjects and levels all the way from primary schools to adult education. They meet heads of schools, teachers, and large numbers of pupils. Therefore, they also have an up-to-date view of what is going on in the field of education, which is unique since traditionally teacher training is conducted at teacher training schools that tend to be situated in large cities. Correspondingly, the schools involved in this programme receive the latest information of the academic and research-driven innovations concerning teacher training.

It has turned out that the training and education provided under the *Kuulumisia* programme has been quite significant for the

participants. In fact, the impact study of 2014 (Kuulumisia 2014), which covered students who had entered the programme in 2010, showed that most of the participants reported an improvement in their status in working life, i.e., either the individual had received a job that matched the level of his or her education, or the individual's job had been made permanent, or an auxiliary task had been upgraded into a teacher's position, or the individual had entered the working life (Kuulumisia 2014, 10–11). This is what the students themselves report:

The schooling had a significant role in my getting a job. After completing the programme, I was employed as a teacher.

Nowadays, I work as head of training. In addition to operational management, I am responsible for curriculum planning and designing the training tray to meet the existing needs. My job also involves cooperation between various authorities, [...].

The studies helped me rediscover my teacher identity in a new country and enhanced my teachership. (Kuulumisia 2014, 10–11. Translated from Finnish by the authors).

Notwithstanding the foregoing positive impact, a considerable issue still remains. It is namely difficult in Finland for individuals with an immigrant background to acquire competence in teaching their own native language, such as Somali. In fact, it was pointed out in the recommendations and suggestions given by the national project on Finnish Language Education Policies (KIEPO) (KIEPO 2007), which was carried out at the University of Jyväskylä, that a majority of the individuals with an immigrant background who teach immigrants their native language do so without any formal qualification for teaching his or her native language. True enough, there are no regulations outlining an immigrant's eligibility to teach his or her native language nor is there an adequate education strand available. (Luukka & Pöyhönen 2007, 42.) Nevertheless, research has shown that when immigrant pupils receive instruction in their native language,

they are better equipped to learn a second language and obtain better school results on the whole (Pantzar, Merta & Stüber 2013, 294). The recommendations and suggestions produced by Vuorio's (2015) survey discussed above indicated that there would be a great demand for education aimed at providing native language teacher's qualification. Thus, the idea of cooperation with the University of Uppsala in Sweden has occasionally arisen at the University of Tampere, because it would be possible to find a teacher of Somali there. New structures should, however, be established on a long-term principle instead of a temporary or makeshift arrangement, and they should be set up on a national level. Besides, it is not possible to provide university-level language teaching for all minority languages merely to facilitate access to formal teaching qualifications. Even so, we should not be satisfied just to record this statement; instead, we should prepare to screen a list of languages that have the most urgent need for qualified native language teachers.

## Collaboration and collective learning

Collaboration is emphasized in the School of Education both within the School and between the different Schools at the University of Tampere. The *Kuulumisia* programme is strongly involved in this collaboration. For example, since 2015, the Finnish students who are studying the subject of Finnish as a second language in the School of Language, Translation and Literary Studies (LTL) (henceforth S2 students) have collaborated with *Kuulumisia* students. The key supervisory positions in this have been held by LTL lecturer Niina Lilja and *Kuulumisia* university teacher Maija Yli-Jokipii. The aim of this collaboration is to create a situation that benefits both of these student groups, and the experiences up till now indicate that we have succeeded in this. Below is an account of the practical realization of this collaboration.



In the spring of 2015 there was a joint teaching weekend for *Kuulumisia* students and S2 students. The students worked in groups on assigned topics, such as the language of textbooks, and the S2 students gave feedback on the texts written by the *Kuulumisia* students. Eventually the Finnish-speaking S2 students were placed in the position of a (language) learner with no previous knowledge of the language of instruction, while *Kuulumisia* students, i.e. students with an immigrant background, taught a lesson of their own choice in their own language – as if they did not know nor understand a word of Finnish at that point. This teaching situation represented a pedagogical challenge to the *Kuulumisia* students: how to cross a language barrier. Correspondingly, the S2 students experienced a learning situation as they stepped in the boots of their own (future) students and felt what it is like to try to learn when there is no shared language between the teacher and the student. First, each teacher had one student and then a group of two to three students. The experiment exceeded all expectations. Both parties found ways to cross the language barrier. They drew, made gestures and facial expressions, pointed with their fingers, showed pictures, etc. There was intensive contact between students and teachers and many participants actually seemed to enjoy themselves. There was an electric and yet warm atmosphere in the classroom. Additionally, all of the students noticed that learning in a group is frequently more efficient than being the single student and that it is easier and more meaningful to teach a group than just one student.

The feedback received on the said experiment was positive indeed. The students felt that the task was adequate and useful for their (future) work. A passage from one student's learning journal deserves to be quoted here.

On the 6th and 7th of March, 2015, we got to teach something in our native language to the students of S2 teacher education at the university. I found the task quite

meaningful and urge you to organise it again next year, if possible.

For this task, I decided to tell the future S2 teacher about the Belgian Sinterklaas celebration. To me, language and culture are strongly intertwined and it is a good idea to integrate them in teaching from the start. Even though students still have meagre knowledge of language, culture comprises all kinds of useful words that can be conveyed with pictures. In addition, the theme of celebration is meaningful because most of us like to receive (or give) presents and sweets. In my teaching, I utilized pictures, because they visualize the learning material and lighten the atmosphere. During the brief teaching period, I tried to create frequent opportunities to repeatedly hear, use, and read the words connected with the theme in question. Repetition and use of different channels intensify the memorizing process.

Dutch is a relatively easy language to learn, because it is rich in elements familiar from German, English, and Swedish. I think that the learners of Arabic or Chinese have to experience language quite differently than the learners of Dutch. Thus, the students had it relatively easy with me because the sounds, spelling, and vocabulary are simple or at least familiar on a certain level. This is the reason why I did not simplify my speech very much. It was relatively easy to choose the topic, materials and assignments. After all, this did not differ from my daily job very much except for the different language used.

Speaking Dutch was the hardest part in this experiment. Nowadays I never need to speak my native language, and actually I do not want to use it. For this task I had to, and I did rather well. Yet, I noticed that some reactions (such as “joo” ‘yes’ and “hyvä!” ‘good!’) came in Finnish. I do not think that it was because of the target audience. I could well imagine that I would also react in Finnish to my mother’s questions.

In my opinion, this task was well chosen. The students of S2 teaching were able to experience what it is like to learn a language in a language other than the student's native language. They were also able to feel the insecurity that S2 learners have to face every single day. The students in our group were able to show their pedagogical know-how and try teaching perhaps a subject other than their own. I am sure that this is one of those elements contained in this academic year that stays in mind long after the course is completed. (Learning journal 2015; Kuulumisia student 2014–2015; teacher of Finnish. Translated from Finnish by the authors).

On the other hand, I found it useful to assume the role of a pupil. The role was much more difficult. Studying in the Russian language made me notice how difficult it is when you have to sit still and learn in a foreign language and listen to a foreign language for several hours and how frustrating it is when you do not understand anything. I tried to remember a few words after the teaching session but did not manage to remember anything. This experience reinforced the notion that when you are learning a new language, constant repetition and practice is necessary. If you learn something new without any opportunity to practise, it is difficult to remember anything of what was taught. This applies to regular teaching as well. When the teacher teaches something new, it is important to remember that students need repetition and practice, otherwise they do not remember anything.

Teaching and student teaching similar to this experiment is good for all teachers from time to time. The experience opens up fresh views and reminds us of how difficult it is to concentrate when you are learning something new and how dull and boring it is if you have to sit still for a long time when learning. (Learning journal 2015; Kuulumisia student 2015–2016; primary school teacher. Translated from Finnish by the authors).

Our purpose is to continue this fruitful cooperation and, if possible, strengthen the collaboration and collective learning between mainstream Finnish students and students with an immigrant background. It is important to increase dialogue and thereby create teachers' encountering skills to meet the needs of diverse operating environments. Moreover, *Kuulumisia* students frequently possess useful information and various skills that would enrich the views of other students learning to be teachers. (See, e.g., Koskinen-Sinisalo 2015, 213.) There is, however, a minor practical problem to such collaboration, i.e. *Kuulumisia* classes are primarily held on Friday evenings and Saturdays, in other words at a point of time when other students tend to be in places other than the university.

A new quota has been introduced at the University of Tampere pertaining to the intake of students with an immigrant background who have carried out part or all of their studies abroad. This is a welcome initiative to bring multicultural competence to schools. Secondly, the quota is bound to have a great impact on teacher training itself. Finnish student teachers will be accompanied by students who have experience and visions of other cultures, languages, and modes of operation, which will undoubtedly enrich education and discussions around it. This does not, of course, abolish the need in future for continuing education such as *Kuulumisia*, since it is targeted towards teacher qualification training and education for university graduates with an immigrant background. Continuing education such as the *Kuulumisia* project is a cost-effective and fast method to employ teachers with an immigrant background and thereby fill in the void existing in education and teaching.

## Societal responsibility

Throughout its history, the University of Tampere has assumed a strong societal ethos. The *Kuulumisia* teacher qualification training and education programme has, on its part, taken the university's societal function seriously by making an effort to extensively benefit both individual and society. Recent political discussion on immigration and integration, as well as news reports of the poorer school results achieved by pupils with an immigrant background than the rest of the pupils in their age groups (see, e.g., HS 2015) clearly indicate that immigrants need increased attention in our society.

The *Kuulumisia* programme makes it a point to meet twofold needs. First, it aims to meet the immigrants' need to find their place and obtain employment in Finnish society. Second, it aims to meet the societal and educational needs to provide all children and young people the skills and knowledge they need. Future generations are in special focus here from the societal point of view. Specifically speaking, a concern has emerged regarding the polarized academic performance in schools and the below-their-peers performance by pupils with an immigrant background. There are certainly several reasons for such poor performance, but a major reason lies in poor native language skills (see, e.g., Opettaja 2015; KARVI 2015, 10–13, 19–21). Our aims at the School of Education and in the *Kuulumisia* project include improving this regrettable situation by training and educating competent and qualified multi-lingual teachers who have extensive knowledge of schooling and education, who can work as native language teachers and also teach in the native language concerned, and who are able to serve as linguistic and cultural interpreters between school and immigrant families. At the same time, with their own personalities, they are bound to create a positive picture of different cultures and thereby increase understanding between people. Finally, a teacher with an immigrant background also serves as a role model to many pupils with an immigrant background,

with whom these young people, and occasionally indeed children, can easily identify and see how obtaining an education is possible and how studying purposefully is worthwhile no matter where in the world you live, as Koskinen-Sinisalo (2015, 180) also points out.

On an individual level, it may be challenging for a teacher with an immigrant background to find his or her own place in the work environment. According to Koskinen-Sinisalo (2015, 28), the difficulties faced by teachers with an immigrant background in integrating into working life include having existing competence recognized, finding employment, dealing with bureaucracy, integrating into the new culture, learning the language, mastering the working methods and teaching procedures of the school, and taking control of the classroom, all this on top of becoming an accepted member of the workplace. This, of course, does not only concern immigrants in Finland, but similar situations occur in several other countries as well. The *Kuulumisia* educators have made and are making an effort to address these challenges not only through the AHOT process and student teaching in the field but also by opening up the explicit and implicit norms and values of Finnish schools and Finnish society. Moreover, we have been successful in strengthening the position of teachers with an immigrant background in the labour market, as also clearly shown by the study of the impact of the *Kuulumisia* programme (Kuulumisia 2014).

Among the most important tasks of present-day teacher education in Finland is the development of operation practices that enhance the understanding of multiculturalism. Schooling at large is built on the principle of teacher education that acknowledges diversity and equality, in line with the ongoing educational reform. To an extent, multicultural teaching draws on critical pedagogy, which aims at questioning the “truths” that are taken for granted in different cultures, and changing them when possible. If teaching lacks criticism, it may remain on a romantic or an exotic level without our noticing it at all. If we cannot view our own cultural experiences with a critical approach,

we will not be able to understand the criticism our culture receives. (Talib 2005, 21–22.) An interesting contribution to the discussion on multicultural teachership is available in Hannula (2000), based on a systematic analysis of Paulo Freire’s classical treatise entitled *Pedagogia do Oprimido* [Pedagogy of the Oppressed, translated by Myra Ramas; Sorrettujen pedagogiikka, translated by Joel Kuortti]. It is pointed out that through education we convey knowledge about the world in the form of facts, fragmentary and limited. It is further argued that by conveying knowledge about the world as given, we also convey an idea of such reality that cannot be influenced and to which humans must adapt. In contrast, what is called “a liberating attitude” comprises an understanding of reality that undergoes changes plus a conviction that humans have an active role in the changing process such that every human being’s rights are highlighted in this process. (Hannula 2000, 77–78.) If teachership and education are limited to conveying only one historical and cultural story, other possibilities and ways to view the world remain ignored. Therefore, one solid future target for us is to integrate part of immigrant education in the basic education given at the School of Education. This is bound to result in further synergy between different educational groups (see, e.g., Virta 2015, 84–93).

A teacher’s multicultural professionalism calls for more extensive competence than previously. A teacher’s professional competence is tied to his or her identity and notion of self, and the encounters between different cultures presuppose a multicultural teacher (Talib, Löfström & Meri 2004, 150). With regard to ethnic identity, it is likely that educational institutions will have an increasing number of teachers with different ethnic origins. Each of them has his or her individual cultural framework and life experience; knowledge of these increases understanding and helps in communicative situations. Actually, teachers should view their own cultural identity from the outside as it were, and they should have the courage to assess the extent to which it is modified by, say, Western culture(s).

Furthermore, multicultural professionalism presupposes awareness of other and different human being as a modifier of an individual's societal reality. Critical professional reflection helps understand individual experiences more fully, as explanations for them are available in cultural and educational theories. Further, to enhance his or her professionalism, the teacher should be aware of the power and use of power embedded in teaching. Societal activity and social influence are related to the topic of the societal nature of teachership discussed earlier in this section, but as Talib (2005) envisions, the teacher is a change-oriented, rebellious intellectual, who is concerned with social activity outside the school as well. This is related to the idea of teachers as a public professional group capable of crossing various boundaries, such as cultural, ethnic, social, and gender-oriented, among others. (Talib 2005, 47–52.)

Teachers with an immigrant background are a relatively recent phenomenon in Finland owing to the short history of immigration in this country. Therefore, we do not have extensive knowledge of such teachers, there is little research on them, and their number in Finnish schools on the whole is relatively small. The situation is paradoxical, however, since Finland has in a short period of time received an increasing number of immigrants and, today, the schools in the metropolitan area around Helsinki, the capital city of Finland, already provide education to a considerable number of pupils with an immigrant background. Similar development is taking place in other large cities in Finland. Yet, schools have not been able to fully respond to this societal change, *de facto* to the increase in immigration.

Social and societal changes in society have increased the responsibility of schools in preventing marginalization and social exclusion. This underlines the role of teachers as executors of social and societal democracy. A further challenge to the individual and society, alike, resides in second-generation immigrant pupils: If their academic performance is not up to expectations, more and more people may think that different their language and culture, together



with the socio-economic status of their parents and the attitude by the school have reduced the equal chances of immigrant pupils to perform successfully at school. From this, it easily follows that being an immigrant together with a degree of alienation partly deriving from merely being an immigrant may work as a model which passes from one generation to the other and may hatch suspicion whereby immigrants on the whole may have a reduced chance for success in this world. (Talib et al. 2004, 13.)

The rapid growth in immigration has also made demands for the reformation and improvement of teacher education. The movement of employees and large numbers of refugees have an impact on the student body of schools. At the same time, Finnish families move abroad and back to Finland for employment reasons. This means that in future there will be an increased need for teachers who can operate in the pupils' native language. Moreover, teachers face a qualitative challenge in how to receive new pupils and help them adjust in a new country. Likewise, it would perhaps be in place to give support to departing pupils in their new life situation. Such challenges require new programmes for teacher education that enable students with an immigrant background to study to become teachers. (Ministry of Education and Culture 2007, 18.)

Finally, it is important to know the teacher candidate's country of origin and heed to this in education and introduction to working life. After all, the multicultural experiences and backgrounds of teachers with an immigrant background provide a rich resource regardless of the state of multiculturalism of the school, because teachers can make use of their multicultural background in the schools and communities in which they work. Teachers with an immigrant background may also serve as all-around specialists in culture and language. They are able to inspire rich intercultural discussion and debate in schools and increase understanding between different cultures.

## Research perspectives

As indicated in the foregoing passages, the *Kuulumisia* project provides education to multicultural teachers who have a marked role in enriching Finnish society. This point of view has drawn attention and interest among scholars in education. An example of research on this topic is Kirsi-Liisa Koskinen-Sinisalo's Doctoral Thesis (2015) entitled *Pitkä tie – Maahanmuuttajasta opettajaksi Suomeen [A Long Road: From immigrant to teacher in Finland]*. In the thesis, the author examines the varied educational paths of individuals with an immigrant background who work as teachers in Finland. She has the individuals describe their own walks of life and intertwines this with their educational paths.

A survey of students' views of the impact of the *Kuulumisia* training and education on their position in working life is available in Jaakko Vuorio's master's thesis (2015). In what follows, we will highlight selected findings of this survey. According to the students' replies, this education had improved their employment opportunities, as 63 of the total of 65 respondents fully or partly agreed with this claim. As reported by the respondents, improved employment opportunities primarily meant being able to enter the labour market and becoming employed, but also the improvement of one's position, thanks to the completed education. In contrast, a small fraction of the respondents disagreed with this claim. This seems to indicate that a small share of the respondents found no improvement in their employment opportunities during the period of time that the collection of data covered.

The majority of the respondents to this survey felt that the education they had received had succeeded in providing them capabilities to work in teaching positions in Finnish schools. More than half of the respondents fully agreed and nearly one third partly agreed with the claim. According to these results and the responses to open questions, several respondents had received from the education

relevant and useful tools to apply in their teaching as well as in finding their respective places as members in the school community. Yet, a small minority of the respondents reported that they would have wanted to be given certain types of readiness that the present education had not managed to provide.

As far as professional networking is concerned, the education given under the *Kuulumisia* programme, practically all the respondents (65) felt that education had remarkably or to some extent enhanced their professional networking activities. They had found new colleagues from among their fellow students or among the university staff who worked with the project. New colleagues were consulted for help, for comparison of practices and opinions concerning schools, and for discussions on various problems and issues potentially emerging in working life. It seems that education brings students into a common space in which new contacts are made and new relations are born.

The claim about professional equality received primarily positive responses in the survey, but also negative reactions were recorded both quantitatively and in the open responses. Regretfully, the open responses did not provide descriptions of non-equal situations, and therefore it is not possible to put a finger on how precisely the lack of equality manifested in the workplaces. On the whole though, most respondents however felt that the situation regarding equality was good.

Furthermore, it was reported that the training had created new networks and enhanced individual growth towards the teaching profession. In this respect, the *Kuulumisia* project had succeeded in its goal to strengthen the students' personal growth towards being a professional teacher and educator (Pantzar, Merta & Stüber 2013, 292). The respondents found it valuable that the programme was not limited to enabling the students to obtain material qualifications and tangible skills but managed to contribute to the respondents' individual growth towards teachership. Moreover, the respondents highlighted networking as a significant contributor to their personal

growth. In addition, the programme had provided the respondents with the knowledge of a teacher's job in Finnish schools as well as with the skills and various abilities they had felt they needed. This came about both in the quantitative responses and through themed questions.

The respondents felt that the contents of the *Kuulumisia* teacher training and education programme, together with the competences connected to the job of a teacher they had acquired during the training, were of high quality and targeted correctly. They were confident that these competences would help them succeed in future tasks as well. Even if the respondents may have had a teacher's certificate or diploma in their respective countries of origin, the education they had received in Finland had managed to give them new information about teaching and especially about the nature of the Finnish school. This, in turn, had helped the teachers with an immigrant background to better understand the work profile of the Finnish teacher and the structural basis of the Finnish school system together with the teaching philosophy incorporated in it. As far as their Finnish language skills are concerned, the respondents were pleased with the improvement of their field-specific skills as part of their education and felt an increase in their courage to use the Finnish language.

Nevertheless, we still have only little research on teachers with an immigrant background, on their roles and possibilities, and on the operation of schools, as Koskinen-Sinisalo (2015, 26) points out. Indeed, those of us who are involved in the *Kuulumisia* project hope that it will be possible in future to expand its teaching focus towards a more research-oriented approach than thus far. In particular, it would be societally meaningful to expand our understanding of the role and impact of teachers with an immigrant background in Finnish schools.

So, we have here a fresh and up-to-date field of research waiting to be urgently explored. This field is apt for scholars of education, for scholars of multiculturalism, and for representatives of other

research communities. To our knowledge, Finnish research literature to date does not comprise studies that would be based on extensive interviews or other methods to investigate how teachers with an immigrant background have found their ways to schools and other educational institutions. Besides inspiring doctoral theses, this subject area could well produce contributions to collections of papers on multiculturalism and serve as basic research literature at multicultural schools.

## Conclusions

In terms of the educational and experiential background of Finnish teachers, Finnish teacher training and education has, from time to time, been criticized for producing a personnel structure for educational institutions which is too homogeneous. Namely, a high level of homogeneity may limit the chances of the institutions to interpret and understand changes in society. (Hämäläinen & Kangasniemi 2013, 11.) In an increasingly multicultural world, the question arises as to why we train teachers to work in classrooms that date back forty years (Cummins 2009, 262). Yet, there seems to be an agreement that schools, especially in the Helsinki metropolitan area and in other large cities, become more and more multicultural and that teachers must be able to respond to this change.

Teachers who have received their education abroad may bring along knowledge and professional knowhow to the school community in which they are employed. Their qualities include awareness of racial and ethnic diversity, extensive background knowledge of different cultures and languages, and first-hand individual experience and understanding of what having an immigrant background entails. With such qualities and skills, these professionals enrich both the lives of the children who they teach and the educational community to which they are attached. (Myles, Cheng & Wang 2006, 243.)

Regardless of whether a given school is multicultural or not, the multicultural experiences and history of the teachers with an immigrant background appear to provide a major asset for teaching. Expressly, they are able to utilize their multicultural background and experience in their professional environment at large. Furthermore, teachers with an immigrant background may serve as all-around cultural and linguistic experts and consultants. They are able to encourage rich intercultural discussions at schools and increase inter-cultural understanding on the whole. Each of these individuals possesses such skills, knowledge, and cultural competence that is certainly worth utilizing in our efforts to make Finnish schools even more knowledgeable than before to ensure we maintain our status as “the world’s most knowledgeable nation” (Finnish National Agency for Education 2013) in future as well.

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# Good enough art teacher

## Developing visual identity in teacher education

*Jouko Pullinen and Juha Merta*

### Introduction

As we live in a world that unpredictably quickly becomes more and more picture-/image-filled, we do not often stop to think how old pictures/images as media are. The oldest messages with pictures are over 2,000 years old and are tremendously reminiscent of those images and signs we still use. The bulls in the caves of Altamira tell us a story in the same type of ‘picture language’ as the language used in the discussion sites in the Internet.

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## The academic discourse between the arts

As human beings, we have many ways in which we can define ourselves or sum up who we are. We can identify ourselves as children of our parents or parents to our children, as citizens of a nation or an area, as a professional in a certain field, or through our hobbies - the list goes on. All of the attributes we use to define ourselves shape our individual identities. Thus, identity does not have a stable, continuous form: each of us redefines our identity at different times and in different situations. This fragmented identity is never complete because of its process-like nature, but is in a constant state of shaping and perhaps even developing (Hall 1999).

In this study, we ask how art education students describe their identities. The starting point for this study was an interest in finding out whether these students defined themselves more as future teachers or as artists, and how they believed that they could combine these two different professional identities. We collected data from a course entitled *Academic Discourse between the Arts* (3 ECTS) that we had designed and held. The course was reorganized every year over a period of five years (2011–2015), and it was targeted towards the students from four different universities: visual arts education students at Aalto University, music education students at Sibelius Academy, dance and theatre education students at Theatre Academy, and primary school teacher<sup>1</sup> education students specializing in art education at the University of Tampere. The goal of the course was to guide pedagogically oriented students from different fields of art into a dialog. According to Huttunen, identity is a result of social negotiation. Identity deals with the question of who a person is in relation to others (Ropo 2009; 2019; Huttunen 2013).

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<sup>1</sup> In Finland “primary school teacher” (or “class teacher”) refers to a teacher who teaches grades 1-6 in basic education. Primary school teachers have a master’s degree in education.

The purpose of the course was to encourage academic discourse between the arts, in which students would open up, discuss and reformulate their own ideas on teaching, examine the connection between education and artistic expression, skill, dialog and identity, among other things. Our aim was to find, together with the students, more precise definitions for the concepts that often appear loosely worded in art discourse: definitions associated with the students' worlds of experience. During the course, students also undertook visual and literary assignments: identity pictures and stories. With identity pictures we referred to constructed portraits in which the students designed a picture, selected the location and decided how to settle into the environment and what props to use. The idea was to summarize their personal views on arts 'teacherhood' into one photo. Later on, the photos were interpreted and discussed in groups. After the discussion, the students wrote their identity stories in which they opened up their identity picture after their own interpretation and the collective interpretation process based on their photo. These stories and photos are used as data for this chapter; they provided us with versatile material upon which to examine the identity of art teaching students.

*Who am I? Where do I come from? Where do I belong to, and who can I become?* These are the most important, sensitive and hardest questions of human life (Huttunen 2013). The students taking our course were in the phase of their lives in which these questions are reflected upon most passionately. In general, students construct their identities both in their studies and in their social networks. Therefore, our course fell upon a sensitive and fertile ground. As one of the students summarized, "I felt that reflecting on my identity was useful, and in my opinion the discussions with other students were very fruitful. The identity pictures opened up in a very new way, and we received the tools to construct our own identities at the same time. I also felt that it was very rewarding for the discussion that the students came from different universities."

Inkeri Sava and Arja Katainen (2004) argue that the view of oneself as “I projects” that are constructed in social relationships and that are constantly evolving makes room for different identity experiments. Sava refers to Zigmund Bauman when she argues that the modern human being is on a pilgrimage towards finding him- or herself. The postmodern identity is roaming, wandering and touring. Therefore, identity work can be like play. One tries different roles in different situations, one constructs and rejects them and reconstructs them again. Those graduating as art teachers are in the phase of life when the play of students becomes reality later on in the working world.

## Reflective photo

### A look into a magnifying review mirror

In our study, we examine reflective photos, visual narratives, in which the students construct their identities. We had several reasons for choosing visual narratives as our data. Being visual arts professionals ourselves, we believe in the power of visual storytelling, and, as researchers, in the possibilities of visual ethnography. Like Sarah Pink (2001), we believe that photography is an excellent tool for observation and documentation and a useful technique for making notes, for both researchers and artists. This perception is, of course, based on the ‘veracity’ of photography as well as its accuracy and non-selectivity. The camera captures whatever the photographer chooses to point it at.

In our project, we use photos a little differently: we emphasize their story-like narrative nature. Photos can tell stories, but they can also interpret color and shape reality. Photos can also skew reality: it is very easy to believe a lie told by a photo. We know that, in their identity pictures, the students constructed their identities

through photography; they told us exactly what they wanted to about themselves. That is what makes it interesting.

More than anything, the identity pictures are reflective tools. Relative to learning, reflection is also necessary. Profound learning requires an understanding of theory and practice. This kind of intentional understanding is the objective in the reflective process. In dictionaries, reflection is defined as *meditation*, *consideration* and *mirroring*. Through reflection, we mirror our own learning; rendering it visible so that we can observe it and, if necessary, change it for the better (Winnicot 1981).

## Peirce's triadic structure of signs

In this chapter, we focus on the reflective photos of the students and leave their written stories in the background. We want to handle the photos as independent narratives without explanations or interpretations of the students. As a tool, we use the well-known and often used semiotic theory of signs by Charles S. Peirce, the American pragmatic philosopher. According to Peirce, a sign, a piece of art, or in this context, a photo, can relate to reality in three different ways: as icons, as indexes and as symbols. Peirce's theory is broadly applied, sometimes in a brutally simplistic way depending on the use. (See Seppänen 2002.) We, too, use Peirce's theory in a little unorthodox way, perhaps, applying it for our purposes<sup>2</sup>.

An **iconic** picture is similar to the object it represents. One characteristic to drawing and other visual work is portrayal. For some reason, we are fascinated with the idea that a cluster of lines that seem to be formed arbitrarily or that the contrast of overtones and colors begin to look like something, to portray something. For example, a picture of a rabbit is formed on a surface. A depiction

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<sup>2</sup> In the following parts of text we present our application of Peirce's theory. We have created it for many years while being artists and art teachers.

that is understood by anyone, regardless of one's mother tongue. A photo is in its essence always iconic, because with a documentary photo, especially, there is always a counterpart in reality. Many traffic signs and guideposts are based on iconism. For example, the sign for a road curve shows the curve of the road ahead. It is, however, noteworthy that a picture can be iconic even without a counterpart, a referent, in reality. For example, the portrait of Mona-Lisa is hardly interesting because we wonder whose picture it is - at least, not before Dan Brown's book "The Da Vinci Code". Is it even possible to know if there is a counterpart for this picture? Instead, during centuries people have pondered the mystery behind Mona-Lisa's smile. We can, with our imagination, create and construct iconic pictures, for instance the worlds of sci-fi films. Likewise, the identity photos of the students are constructed photos and do not, despite their iconism, necessarily portray the reality as it is. However, that is what makes them interesting.

The **index** sign has a causal relation to reality. For example, smoke is a sign of a fire. A flag on a flagpole indicates a flag day or a family celebration. In the field of photography or visual art, index can also be related to a postmodern characteristic in which a piece of art refers in almost every case to other pieces of art. A picture of a rabbit indicates to the visual world of Joseph Beuys in the European context and in the Finnish context to Risto Suomi's production. In addition, movies refer to other movies and their meaning is also constructed by the meanings of those movies they refer to. The index relationship can be constructed consciously or by the viewer. Therefore, in this case, the interpretation of the identity photos depends upon the experiences of the interpreter. We interpret the students' identity photos from our own perspective knowing that we may alienate from the meaning that the student has intended.

**Symbol** is a conventional sign, the meaning of which is based on a convention. We have agreed that, for example, some letter combinations mean something. The written language is an example

of a fully contractual sign language. Visual signs can also be contractual, such as the Christian symbols, but the connection is fuzzier than in written language. For example, a rabbit like other animals can have many different symbolic meanings depending on where geographically and in what type of environment it is being interpreted. In addition, every individual can also see the rabbit representing something or a feature in his or her own way.

On the other hand, visual language is in a way universal. Pictures can be interpreted and understood by anyone regardless of nationality or background. The meanings constructed and based on pictures, however, are always linked to cultural traditions as well as to the subjectively and experientially built symbolism.

## What ‘catches the eye’ in the identity photos?

Barthes (1980) separates *studium* and *punctum* in his analysis of photos. *Studium* is something in a photo that generates common interest, but is not truly anything mind-blowing. *Punctum*, on the other hand, means that the attention of the viewer becomes attached to something, perhaps, to a detail or something else that makes him or her stop and linger with the picture or detail in the picture longer. The viewer is not necessarily aware of what it is that draws his or her attention straight away. In a good photograph, there must be this *punctum* that penetrates the *studium* so that the viewer pays attention to the photo. The Finnish expression “*pistää silmään*” (catch the eye) describes well the thoughts expressed by Barthes.

*Punctum* may also be something invisible. Barthes (1980, 148–151) explains how a portrait of a young man grasped a different meaning from the fact that he was about to be executed. One can conclude from the photo that he was a convict, because he has handcuffs, but his doom is not visible otherwise. In the same way, our own interpretations are affected by everything else we know about the



photos. Particularly, the art field we know and what the identity photos also represent.

One problem of interpreting a picture and also of art education occurs when we try to understand what we see in the pictures, we, as Kotkavirta (2009) puts it, verbalize pictures into words and translate them into another kind of syntax and semantics. This happens whenever we focus our attention on the meanings the pictures have generated, meanings that are not necessarily made consciously at all. The aim to verbalize and become aware of the meanings and images the pictures carry collides with its limits and fails to some extent. After all, a picture always contains much more than what we are able to put into words. Pictures often generate images and effects that are impossible to become verbalized. Sometimes it is good to just let the pictures talk in their own language without futile explaining.

Regardless of this, we boldly begin to verbalize some of the interpretations of the identity photos we have chosen. We trust in our own interpretations that are subjective, but made in a mutual dialogue. We have travelled with the students' identity photos for a long time, examining them in different situations and from different points of view. We hope our readers continue these spontaneously developed interpretations. As the authors of this chapter and having processed dialog in our dissertations and produced art in a dialogical process, we have developed an organic method of approaching, reflecting on, and understanding phenomena. Both of us are hermeneutic by nature, and we want to emphasize particularly the reflective and dialogical nature of the process of understanding. We feel, like Veli-Matti Värri, that dialog is an indispensable method in teaching as well (Värri 1997; see also Buber 1999). In our opinion, dialog has proved to be a useful method in encountering students from different universities and art fields. Instead of the traditionally highly narcissistic art talk, dialogs are polyphonic, listened to with sensitive ears searching humbly for the understanding of others and oneself (Gadamer 2004; Merta & Pullinen 2008). In the dialogs, strong,

shared experience was connected with people's own starting points or, as Juha Suoranta puts it in his article, "You have to remember your starting point." Subsequently, it is possible to reflect on and break down the strong experience with the dear ones – even over a long period of time (Suoranta 2008).



*Photo 1 (from the archives of the authors by permission of an anonymous student photographer)*

Photo 1, in our opinion, represents an iconic image of the work of a primary school teacher. At the same time, while we see recognizable, even timeless details, of a classroom, the photo also reveals the clichés that we associate with teacher's work. The thing in which we are interested in the picture, what 'catches the eye', is the magnifying glass and the eye that has been magnified. We know that the student in the photo is graduating as a primary school teacher with a qualification to work as a visual arts teacher as well. The magnifying glass is related to investigating things. Even a few years ago, visual arts was primarily called self-expression, the practice of the eye and the hand. However, in our opinion, the photo tells us about the new direction of visual art

education. The new national curriculum defines the goal of visual art education – to guide pupils to examine and express culturally diverse reality by means of art (Finnish National Agency for Education 2014).



*Photo 2 (from the archives of the authors by permission of an anonymous student photographer)*

In many of the identity photos, the students strengthen the external characteristics of their own art field. Photo 2 could have the title, “Man looking like a musician”. Even the music style the student wants to represent can be interpreted from the photo. Instruments have always had a significant role in visual arts, solely because they are usually interesting in their functional design. Instruments can also have symbolic meanings, but in our data we connect the instruments

placed in a prominent space with the usage and skills needed to play them. During their studies, future music teachers, in particular, commit their identity to the skills to play and musical know-how. The elegant picture in question would work perfectly as a promo picture in his CV.



*Photo 3 (from the archives of the authors by permission of an anonymous student photographer)*

Photo 3 reveals, at least to us Finns, this student's roots in our classical and national tradition by referencing in an index kind of way to the Sibelius Monument. The sculpture is perhaps one of the most well-known public works of art in Finland, recognizable even from this unconventional visual angle. The polyphony of the organ pipes in the Sibelius Monument amplifies the identity and life values of this beautiful longhaired student. If we didn't know anything about the installation in the background of the picture, it might look a lot drearier, even distressing. For example, as a story of a tiny human being's struggle in the pressure of the societal structures. An interesting thing in the photo is the emphasis on diagonal lines. By placing the photo askew, the student gets vividness or insecurity in her photo, depending on the interpretation.



*Photo 4 (from the archives of the authors by permission of an anonymous student photographer)*

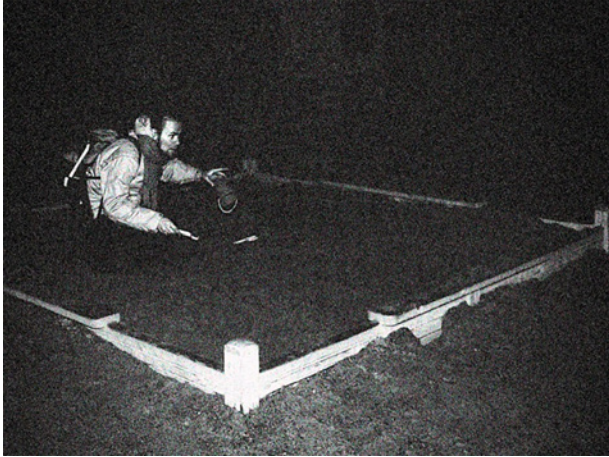
The student in Photo 4 looks as if she is carrying something important in her lap, something that she insists on keeping and showing to others. She has embraced two photos one of which can be recognized as Elina Brotherus' work "Wanderer 2" (2004). With her picture, Brotherus refers to Caspar Friedrich's romantic painting "Der Wanderer über dem Nebelmeer" (1818). Thus, the identity photo refers in an index way to two works of art, and it can be interpreted to carry the meanings of both of these pieces of art. In many of the other photos in our data, the students look far towards the horizon, towards future challenges. This is understandable for young students. We do not know how conscious and intentional this reference to Romanticism is. We believe that young students lead a phase in their lives where emotions, imagination and freedom are emphasized, just as the Romantics did. During Romanticism, the meaning of nature

was highlighted in the arts and people were extremely interested in the spiritual world, dreams and even the dark sides of the human mind. In addition, foreign lands and exotic places aroused the curiosity of the heroes and heroines of their time, as that of present day students. We need only a little bit of imagination to come up with the things this young girl is dreaming about.



*Photo 5 (from the archives of the authors by permission of an anonymous student photographer)*

Photo 5 differs from the identity photo stream because its content is primarily symbolic, even in the way that there are only the hands of the student visible, nothing else. The hands tell us about caring and gentleness, the tools of an educator. This strongly symbolic photo reveals the child-centered pedagogical thinking of this student. Children grow up in our hands, they get protection and safety from us as well as the light and nutrients required for growth. The color symbolism of the photo supports this interpretation. Green as the color of life emphasizes the uniqueness of the one growing up and the choice to centralize the color only to the small seedling singles it out from the picture, it 'catches the eye'. We know that the background and ethos of this student is in early childhood education.



*Photo 6 (from the archives of the authors by permission  
of an anonymous student photographer)*

Photo 6 above could be interpreted as showing the artist caught, in a way, at night doing something secret and childish, something that is important to him, but something he does not want any fuss about. Artists rarely receive regular pay for their work, and balancing between grant applications and occasional art sales is difficult. Those studying visual arts education struggle with the contradiction between the societal status of teachers and that of artists. Being a teacher is seen as bureaucratic and financially stable, whereas an artist remains in the margins with frail safety nets.

## Conclusions

According to Inkeri Sava (2004), the essential question is whether the wandering self in the postmodern era is one's own choice or a place where one drifts in social circumstances. Undoubtedly, studying at a university and especially at an art university is a special social environment for a student. The place and the peers mark and strengthen the identity process of the students, although

not as strongly as we had expected. The pedagogical ethos is seen in the students' identity photos regardless of their field of art or past experiences<sup>3</sup>.

The world becomes more visual in a breath-taking speed and pictures and the messages they carry have an even more dominant position. We are surrounded by pictures everywhere and those pictures live in our minds – some for a longer time and some for a shorter time – even though we do not pay attention to them (Kotkavirta 2009). The central mission of art education is to help us analyze this visual chaos and provide various methods to interpret the picture, to see beyond the surface. One way of analyzing is to use Peirce's theory on triadic structure.

From the viewpoint of interpreting our data, the iconic nature of the photos is especially interesting. The iconic elements seen in the photos tell us how the photographer wished to consciously construct his or her identity. The photographer has indeed carefully selected everything that is seen in the photo – how he or she has placed him- or herself in it, the type of environment chosen and the props he or she wishes to crop into the photo. When the student holds an instrument or watercolors, puts him- or herself on the stage of a theater or into a classroom, he or she tells us directly what he or she considers important for his or her identity formation. Surely, index and symbol features can be found in the identity photos. However, our interpretation withdraws from the creator of the photo and

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<sup>3</sup> We interpreted in our previous article (Pullinen & Merta 2015) the identity photos and the narratives related to the photos especially from the standpoint of being an artist and being a teacher. The data did not support our hypothesis that the inner identities of art teachers – being an artist and a teacher – would compete against each other. This is not true at least during their studies. The students seem to look for the common and supporting characteristics between being teachers and artists. Many students viewed making art and teaching as different sides of their identity which, together, create a harmonious unity. After all, the students were pedagogically oriented regardless of their art field or the extent or character of their previous education. The choice to become a teacher was an intentional one, despite the various reasons for applying to pedagogical studies. However, the reader must judge how much this is affected by the fact that the data was collected during pedagogical studies.



we cannot know for certain whether our interpretation is what the creator has intended. Therefore, it is not possible for us to conclude anything definite concerning the construction of the identity.

### Skill as a basis for art education

According to our data, we argue that the future art teachers base their teacher identities mainly on skill. This is also supported by the entrance examinations of art institutions. In the field of music and dance, the technical skills of playing, singing and dancing seem to be the starting point of all teaching. In our first article based on this data, we told a story of a dancer, in which the pedagogical study path was a consequence of an injury, when the body was no longer fit enough to handle the physically demanding work of a dancer. Sometimes, there have been doubts whether young people gravitating towards becoming visual art, theatre or music teachers are the ones that could not succeed in arts as artists, actors or musicians. The question about skill is, however, more complicated than that. Pedagogical skill can be more important for an art teacher than the artistic skill.

Based on our long-standing experience as teacher educators, we believe that passion about what one is doing is important, but the passion must come from the inside. Fanatic attitudes attract fanatic followers, but how long can the structure remain whole if the foundation is not solid? If a student throws herself passionately into her studies under the wing of an expert, what happens to the novice facing the field alone?

### Self-centredness

In one way, our data also indicate a rugged picture of the self-centredness of our time. The identity photos of future art teachers intertwine to a large extent with the personality traits of their creators, with the environments where they have grown up and with personal

hobbies. Instead, one has to search for reformers closely. In the photos, the young adults' concern for nature is not evident, neither is the societal activity nor the multicultural world.<sup>4</sup> Perhaps, the nature of the assignment did not persuade them to photograph that.

The function of most photos was merely to be beautiful. One might argue that it is identity work as well, but in relation to our pedagogical goals it seems quite superficial. Many young people live in this so-called selfie-culture and are used to sharing the formerly written messages as photos: me in front of the Ducale Palace, me with my friend eating, me on the Bridge of Whispers, me in beautiful evening make-up. The photos tell us about 'me' somewhere, doing something, not necessarily anything deeper. Perhaps we didn't know how to emphasize the academic and reflective nature of the assignment. It is, of course, a different matter to tell one's story to one's own circle of friends than to two university lecturers doing research.

### Empowering identity photos

Interestingly, many photos of our data are consciously constructed even though they highlight the characteristics not necessarily found in the student, even if she or he would like them to exist. They, in some way, tried to build an ideal picture of an art teacher, as a goal to pursue later on. In this sense, the construction process of identity can be seen as a therapeutic experience.

We want to maintain a clear distinction between this and the method called *empowering photography*. For sure, as a process, identity pictures can be therapeutic, but that was not our goal in the project. Miina Savolainen developed empowering photography into a method used in social care and nursing. The basis for empowering photography – its soul, as Savolainen puts it – remains in its birthplace, i.e. in child welfare. What does a severely mistreated person need to

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<sup>4</sup> This way of thinking is not found in the essays the students wrote based on their identity photos.

become valuable, involved and connected to other people (Savolainen 2008)? The thought that a person has to be precious in someone else's eyes before they can be precious to themselves was reversed in our project; it was about a reflective process in which students evaluated their relationship to their future educational role and their expectations of becoming art teachers. Primarily, we were hoping the students would look honestly inwards, into their own mirror. Instead of empowering them, it was more about them becoming aware (see also Pienimäki 2013).

### Good enough art teacher

Our data indicate that skills are a sensitive spot for art teachers. But who is skilled enough as an art teacher? When skill is viewed as pedagogical understanding, we are close to the ethos of sufficiency, which Hannu Simola (2001) and Donald Winnicott (1981) have also discussed. Let us apply Winnicott's idea of becoming an art teacher. A good-enough teacher who is dedicated to art but also educationally aware can be a very good option for children and young people. An excessive artistic ambition can disrupt the learning and growth of young people. At its worst, the teacher's need for recognition can force their students to attempt to actualize the artistic ambitions of the teacher. It is good to remember that, in art education, the opportunity to fail is also fruitful in relation to learning. This shifts the emphasis from the end result to the process. Based on our experience, those students who emphasize their artisthood too heavily tend to become trapped in their own preconceived ideas and do not dare to open themselves up to learn something new, to truly plunge into the unknown, whereas those students who view their competence more skeptically test their limits more boldly and are curious about the world. In an inclusive environment, this type of student becomes a skilled and understanding teacher who considers guiding the pupils along their own paths to create something significant.

According to Barthes (1980), photos show death. Perhaps we want to immortalize what we would not like to see to die/disappear. The students take photos of what is close to them and perhaps even the most important to them: one's own family history, childhood environment, friends, student life and the expectations and prejudices of their own art field. Time goes on and we can never go back to what has been. Through the student's own picture he or she can go back to that moment in the future – bring history into the present. However, we as researchers, look into the future through the photos. It would be interesting to see how art educators see their art teacher identities after ten years.

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# Student teachers' professional growth

## A case study of pedagogical practices used during the course Teacher as a Researcher

*Outi Stüber and Anne Jyrkiäinen*

This study examines student teachers' professional growth based on Mentkowi's and her co-authors' theory (Mentkowski et al. 2000). The aim of this case study is to explore, design and evaluate the curriculum and pedagogical practices to support professional growth through collaborative learning and knowledge building during teacher education. The case study follows the principles of Educational Design Research (EDR) and presents one cycle of the EDR. The research data consist of student teachers' project reports that were designed to bring on social learning among the student teachers and at the same time promote their professional growth. The results show that these types of pedagogical practices reinforce all Mentkowski's and her co-authors' four domains of professional growth: reasoning, performance, self-reflection and development (Mentkowski et al. 2000).

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## Introduction

In Finland, the research based approach to teaching is a central principle in teacher education and it is seen as one of its strengths. Building on research, academic teacher education creates a platform for student teachers to become teachers who can reflect on, develop and renew their teaching and their schools. (Niemi & Jakku-Sihvonen 2009; Uusiautti & Määttä 2013). Therefore, in their profession teachers are expected to have the competence to analyse different circumstances and to explore and research educational issues from philosophical questions to practical solutions. In addition, teachers are presumed to develop their capacity in collaborative knowledge building and be prepared to develop their own work throughout their careers. The goal for teacher development and learning is, most of all, strengthening the teachers' abilities to promote pupils' learning. (Kaasila & Lauriala 2010; Beijaard, Korthagen & Verloop 2007.)

Southworth (2009) suggests that schools need to develop a culture characterized by collaboration, sharing of leadership, taking responsibility for individual and collective learning and professional development to become professional learning communities. This type of collaboration should promote openness, responsiveness and readiness for different views, ideas and innovations. (Southworth 2009, 103.) However, many teachers face struggles especially in the early years of their careers. Instead of learning from their experiences, they face issues of control, frustration, anger and confusion. This hinders and challenges their professional development. (Beijaard et al. 2007; Moate & Ruohotie-Lyhty 2014.)

These expectations for future teachers and challenges they face in schools place many demands on teacher education. One solution to develop teacher education is to develop its curriculum. According to Mäkinen and Annala (2011), in higher education a curriculum should be wide-ranging and integrative to balance the needs of the academic world as well as society and working world. In the context of teacher

education, this can be understood as the integration of theory and practice in a way that supports the development of students' expertise. In line with this, Kaasila and Lauriala (2010) argue that theory and practice should be at the heart of teacher education, in which various forms of co-operation provide opportunities, partnership and guidance for students from a variety of backgrounds and skills. Students should be encouraged to collaborate to enhance each other's learning. (Kaasila & Lauriala 2010; Niemi & Jakku-Sihvonen 2006; Niemi & Nevgi 2014; Moate & Ruohotie-Lyhty 2014.) Meaningful learning experiences can also be achieved in situations where student teachers' professional understanding, identity and agency are simultaneously supported (Ahonen, Pyhältö, Pietarinen & Soini 2015, 159; Moate & Ruohotie-Lyhty 2014).

Teacher education in Finland, and in this case at the University of Tampere, consists of theoretical and practical studies. This chapter focuses on subject teacher education, in which pedagogical studies are carried out within one academic year. According to the curriculum of the pedagogical studies, various courses offer opportunities to participate in learning communities that actively encourage teaching, studying and researching. The studies emphasize the research-based approach to the teaching profession and aim to support student teachers' professional development. (University of Tampere 2014.) However, the curriculum of the teacher's pedagogical studies can appear fragmented and the connections between various courses can remain shallow unless the students are guided in their professional growth. Therefore, the aim of this study is to explore ways to develop the curriculum to support the professional growth of student teachers through social learning during their studies.

## The background of this study

### Educational Design Research

Our interest is to explore and understand academic teacher education in order to support student teachers' professional growth better. As researchers, we understand the reality being socially constructed and therefore the research paradigm can be seen as constructive (MacKenzie & Knipe 2006; Schwandt 1994). The research stems from the perspective of societal, pedagogical and educational development, and encourages research-based dialogue among student teachers and teacher educators. The case study presented in this chapter is one part of an Educational Design Research (EDR) cycle. The premise of Educational Design Research is holistic, which means that despite the interest of studying specific objects, processes and contexts the goal is to investigate the subject as a meaningful phenomenon. (Plomp 2013; Van den Akker et al. 2006, 5).

The methodological frame of this study is Educational Design Research (EDR), which can be used to develop and confirm the planning of educational processes. EDR is based on continuous cycles of design, enactment, analysis and redesign. Educational design research supports authentic educational design processes and results in interventions, professional growth and development and even curriculum reform (Design-Based Research Collective 2003; Nieveen 2013; Plomp 2013; Van den Akker 2013). In other words, EDR aims to bridge a gap between theory and practice and is pragmatic in nature.

This case study is part of educational design research, the aim of which is curriculum development and thus, according to Van den Akker (2013), includes the phases such as

- 1) *Preliminary investigation*: This phase includes, for example, intensive and systematic familiarization with the curriculum, its challenges and the context. It can also consist of reviews of scientific literature and consulting of experts.

2) *Theoretical embedding*: In this phase, researchers aim to connect theoretical knowledge to the design of the curriculum development. This theoretical embedding can increase the transparency and reliability of the arguments.

3) *Empirical testing*: During this phase, researchers collect empirical evidence on the practicality of the intervention in the selected context. Cycles of empirical testing can be seen as small case studies (such as the case study presented in this chapter).

4) *Documentation, analysis and reflection on process and outcomes*: The final phase includes systematic documentation, analysis and reflection on the different phases of the process. (Van den Akker 2013, 64.)

According to Akkerman et al. (2013), Educational Design Research can contain different motives, which lead to different “epistemological cultures”. In formative design research, which this study represents, the design and change in practices are highlighted and thus the organic nature of the process, as well as the role of participants, become central. (Akkerman et al. 2011; Engeström & Sannino 2010.) Soini et al. (2013) write about different levels of the design research instead of motives or cultures. They argue that the process and the results of design research can be viewed through three levels, which are theoretical design, developmental design and empirical design. The way in which the premises, processes, innovations or the results appear depends on the chosen level. (Soini et al. 2013.)

## Building the model of student teachers' professional growth

The first phases of this educational design study were built on examining and reflecting on the research on professional development in higher education and in teacher education (e.g. Mentkowski & et al. 2000; Ruohotie 2003; 2004; Korthagen & Vasalos 2005; Beijaard et al. 2003; Niemi & Jakku-Sihvonen 2006; Moate & Ruohotie-Lyhty

2014). The curriculum of the subject teachers' pedagogical studies was read through thoroughly and the different modules that support student teachers' professional growth were identified. In addition, the course assignments were created in association with those modules. Previous research shows that the teacher education that manages to convey coherent views on teaching and learning and in which these views are carried through different courses and practicums have greater impact on student teachers' concepts of being a teacher than the programmes where the courses are disconnected (Darling-Hammond et al. 2005, 392). Therefore, by developing and modelling the curriculum, teacher educators can reinforce the coherence of their teacher education programmes.

We started to place the themes we found in the curriculum and from the research literature (such as different pedagogical environments, the impact of student teachers' views on learning and teaching, practices and professional identity) into a picture based on the teacher education programme at the University of Lapland (Kaasila & Lauriala 2010; Lauriala et al. 2014, 102). In Figure 1, we illustrate the model of a student teacher's professional growth that we created and to which this case study is linked. It is noteworthy that the process of student teachers' professional growth can seem static when presented as a figure. Yet, in the model, we consider student teachers as active learners (Mentkowski & et al. 2000; Niemi 2002; Ruohotie 2004a). We have found the model a useful tool to understand and develop the pedagogical practices in teacher education, which can lead all the way into curriculum development.

In the center of the model, we placed themes found from previous research and curriculum analysis. On the right side of the model, we placed various essential pedagogical environments identified as important to teachers' understanding and in which the student teachers also do their teaching practice. Thus far, the model resembles the model of the University of Lapland to some extent (Lauriala et al. 2014). When looking at the studies, we discussed what scientific

methods and approaches could be utilized in each pedagogical learning assignment. The left side of the model was the last part to be completed when, during pedagogical studies, the accumulated data were grouped and collected for analysis. The learning assignments that we chose for the left side of the model illustrate how student teachers could be encouraged to seek connection between theory and practice.

In the model, the different parts interact with each other horizontally and vertically. Vertically viewed, the professional growth and development of a student's professional identity begins by reflecting the origin, orientation and ontological questions the student teachers have. Guided teaching practice provides the students with an opportunity to reflect on their experiences as teachers both with the supervising teachers and with their peers. Later on, during the studies, conceptions and beliefs are processed and analyzed. Horizontally viewed, the student teachers expand their understanding of the teaching profession and learn to see connections between different pedagogical environments. The goal of the pedagogical studies is to provide the student teachers with the knowledge and skills required for achieving a sustainable professional identity and personal praxis. It is noteworthy that teacher identity and personal theory are reconstructed during the professional life, and thus we do not argue that these are completed during the studies. Nevertheless, the aim of teacher education should be to give sufficient understanding and tools to create a professional teacher identity (van Huizen et al. 2006; Jakku-Sihvonen et al. 2014, 96).

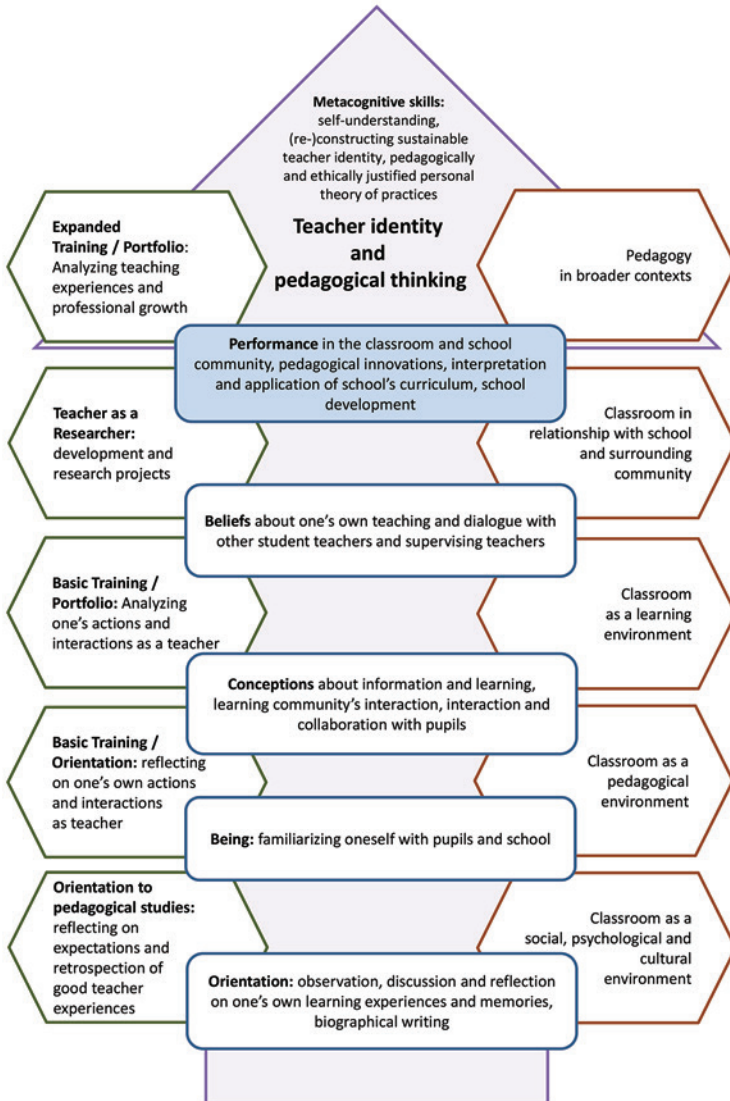


Figure 1. The model of student teacher's professional growth (Lauriala, Kyrö-Ämmälä & Ylitapio-Mäntylä 2014, 102) modified by Stüber & Jyrkiäinen

The case study presented in this chapter focuses on practices that were designed for a course called *Teacher as a Researcher* and were targeted to support the foundation of the model: *Performance in the classroom and school community, pedagogical innovations, interpretation and application of school's curriculum, school development*. Next, we will present the educational theories that guided our course planning and, hence, the case study as well.

## Theoretical background

### Professional growth

We build our theoretical framework of professional growth on the theoretical and educational model of Mentkowski and her co-authors (2000). According to them, an educational programme can simultaneously develop mastery of thought in the disciplines and professions, meaningful self-reflection, development of a person as a whole, and the performance in work, family and civic settings. In addition, educators who have a developmental perspective on students' thinking, reflection and growth can create a curriculum that fosters learning that lasts. (Mentkowski et al. 2000.) Accordingly, we find this framework useful as a tool to understand the process of professional growth and to plan pedagogical practices that support student teachers' learning.

Mentkowski and her co-authors (2000) present a model of professional growth that integrates learning, development and performance. According to them, there are four transformatively integrated domains of personal growth where an active learner is at the heart of the process. Those domains are 1) reasoning, 2) performance, 3) self-reflection, and 4) development. *Reasoning* focuses on the role of contemplation skills. It is linked to declarative knowledge structure, formal, abstract and systematic reasoning and basic cognition and its



underlying structures. Interaction activates thinking, understanding and reasoning during professional growth. *Performance* as a second domain is related to learners' interpersonally charged emotions and dispositions. The learner extends his or her experience by visualizing different possibilities of behavior beforehand and after action. Collaboration and analysing actions afterwards together advance performance skills. The third domain, *self-reflection*, lies on the construction of meanings in personal experiences. Learners can challenge and judge their assumptions and discuss their life experiences with other people. Doubts and questions are part of learning through self-reflection, as well. Development as a fourth domain can be characterized by deep enduring structures of the self. It focuses on how learners connect issues of personal integrity and purpose. Development requires learners to grow towards independence, collaboration and ethical responsibility.

These four domains are in a close relationship with transformative cycles of learning, in which learners move from one domain to another by using metacognitive strategies, self-assessment and by engaging in diverse approaches, views and activities. In addition, the domains mutually reinforce one another. Therefore, by supporting learning and growth in one domain an instructor can foster growth in the others as well. (Mentkowski et al. 2000; Ruohotie 2004a, b.) Although, we have used this theory of the domains as a theoretical basis especially for this research cycle, it is not contradicting with the model of student teacher's professional growth presented earlier in this chapter. The transformative cycles of learning support learning in different parts and aspects of the model and thus contribute to the professional growth of student teachers.

## Learning in the social context

When learning is understood as a process of social construction, it should influence teacher education practices, because the way in

which student teachers understand learning has an influence on how they see teaching and eventually teach their pupils. (Hammerness et al. 2005; Darling-Hammond et al. 2005; Shulman 2000.) However, it seems that the social aspects of learning, such as the importance of cooperative action, collaborative problem-solving and sharing as tools for attaining deeper processes of learning, and practices supporting it are often missing in teacher education (Moate & Ruohotie-Lyhty 2014; Niemi 2002) and therefore, teacher educators should develop practices that strengthen this quality of learning.

Lee and Judith Shulman (2004) summarise the dimensions of teacher learning in the following way: “An accomplished teacher is a member of a professional community who is ready, willing, and able to teach and to learn from his or her teaching experiences” (Shulman & Shulman 2004, 259). Therefore, learning can be promoted if an encouraging community of learners supports one’s metacognitive awareness and reflection. (Shulman & Shulman 2004.) We believe this also applies to teacher education. In addition, Vygotsky who formulated his theory among school children, but whose theories are widely acknowledged in higher education as well, argues that communication between students guides learning towards students’ developmental levels. Thus, the Vygotskian perspective of teacher education (van Huizen et al. 2006, 274) emphasises, “Professional learning and development are best conceived and conditioned as an aspect of evolving participation in a social practice”.

The arguments above highlight the importance of social interaction and community in learning and there are many theories describing how learning occurs in social contexts (e.g. Lave and Wenger 1991; Vygotsky 1978; 1982; Säljö 2001; Scardamalia & Bereiter 2006). For example, Wenger (2006) describes collective learning with three attributes. First, the group has a shared domain of interest. Second, the members of the community build relationships that enable them to learn from each other. Third, a community of practice develops shared repertoires of resources. In addition, according to Scardamalia

and Bereiter (2006), when students are members of a knowledge building community, discourse can be seen as collaborative problem solving (Scardamalia & Bereiter 2006). Hence, collaborative learning requires situations where interaction and knowledge building are possible. Niemi (2002) concludes that active learning requires participation in discussions, dialogues and responsible cooperation with others. In our case, the pedagogical methods that we used during the course, Teacher as a Researcher, supported practices of active, collective learning and collaborative knowledge building, but also drew from the other theories of social learning. Furthermore, we believe that these pedagogical methods and practices that spring from the theories of social learning can promote student teachers' professional growth.

## Case: Promoting student teachers' professional growth

In the curriculum of the subject teacher's pedagogical studies, there is a course called Teacher as a Researcher (University of Tampere 2014). We decided to use and test the model of student teachers' professional growth in the first phases of the design study as a tool and core for the course. In this case study, we have adopted an interpretative approach and focus on analysing student teachers' project reports from the perspective of different domains of professional growth. Even though the developmental process of professional growth does not happen during one course only, we believe that these domains of growth can be reinforced with pedagogical methods. Therefore, we framed our research question in the following way: *In what ways are the domains of professional growth (reasoning, performance, self-reflection, and development) presented in the project reports produced by the students.*

## The participants and the research data

The participants were a group of 16 student teachers with different teaching subjects, both females and males, participating in pedagogical studies during one academic year. All student teachers had been working as professionals in different fields prior to teacher education. The students were between ages 27 and 51 (mean 38 years, mode 36 years). As research data, we used project reports written by the student teachers. Beforehand, we described the background and aims of this study to the participants and emphasised that participation to the study was voluntary. We received permission to the data used in this case study, although the student teachers knew that the reports would be published and, therefore, the data would be available to anyone. We have aimed to execute the EDR process ethically and without causing any harm to the participants.

## Course outline and data collection

We started the course by asking the student teachers to place their meaningful and significant experiences during teaching practice in the different pedagogical environments presented in the model. We also asked them to write down questions and problematic experiences. This phase was done individually, but the topics were discussed in small groups. After that, we asked the students to choose one or two topics that were meaningful to them and form groups based on common experiences and interests. In those groups, the students were asked to create a research question they would like to investigate more. The goal of this process was to spur the processes of learning and reflecting on the professional growth so that the students would be more aware of their development.

After the planning sessions, the groups started their small projects. The four projects made during the course Teacher as a Researcher were:

1. Collaboration among different subject teachers: What types of narratives are found in subject teachers' stories about collaboration?
2. The future of teaching mathematics in upper secondary schools: How teaching mathematics should be developed and what the future of mathematics education should be? How teaching should respond to the evolving technological possibilities?
3. Group dynamics among pupils: How pupils experience and understand group dynamics?
4. Drama as a pedagogical method: How drama can function as a teaching method and enhance language studies in a multicultural group?

The groups executed the projects using different methodological approaches and methods, such as interviews, surveys and action research. The students wrote reports of their projects and designed posters. The reports were published in a book called *Circles of Collaboration* (Jyrkiäinen, Kovalainen & Stüber 2014). The projects and the posters were presented in a seminar at the end of the semester. One of the students made a summarising analysis of the projects looking for common themes and theories. He placed the project in the context of social constructivism and found various connections between the projects. Those connections were research-based learning and knowledge building, group phenomena, democratic education and integrative learning. (Kovalainen 2014.) However, we focused our analysis only on the reports of the four projects and on identifying the different domains of professional growth.

## Analysis and results

The students' reports show how student teachers were building their collaborative work from the first ideas and questions to different types of projects. In addition, the processes described in the reports indicate research groups' thoughts of their professional growth. The reports do not present any problems in the groups' collaborative working process, but as educators, we witnessed and supported negotiations in challenging phases during the process. This type of overcoming of challenges can be seen as an important element in professional development and in collaborative learning processes (Lave & Wenger 1991; Säljö 2001). When we examined the reports in the light of Mentkowski's and her co-authors' four domains of professional growth, we found different domains in each report, but each of them emphasises the domains differently. We did this theory-guided content analysis (Miles & Huberman 1994) of the reports together discussing and negotiating what constituted each domain of growth.

In Table 1, we describe Mentkowski and her co-authors' (2000) four domains in student teachers' projects and give examples of them. By using citations from every project, we want to show the richness of the students' pedagogical experiences. The domains of growth were found mainly in sections where the students described the premises and motives of their projects and contemplated the results and the meanings of the results. When the four projects are being viewed together, one common feature in them is social learning. On the one hand, social learning has been an object of the projects and on the other hand, the process itself has produced opportunities for social learning. This supports the starting position and theoretical background of our study – collaborative knowledge building (Scardamalia & Bereiter 2006) taking place during the course.

Although all domains of professional growth were presented in the reports, it was characteristic to the reports that two domains were

emphasised more than the other two. The emphasis was either on reasoning and development or on performance and self-reflection. In the domains of reasoning and development, growth happens in the inner structures, whereas in the domain of performance and self-reflection, growth is linked to the context. This difference in emphasis can be a result of the project theme or the ways the projects were executed. It is also important to consider that the reports were written as course assignments and the instructions were not to describe the students' professional growth. Despite these limitations and different emphasis on the domains, the data indicate that professional growth took place and as Mentkowski and her co-authors (2000, 190) argue, growth in one domain promotes growth in other domains as well.

## *Student teachers' professional growth*

*Table 1. Student teachers' projects in relation to Mentkowski's and her co-authors' (2000) four domains*

<i>Domain</i>	<i>Project</i>	<i>Form</i>	<i>Citation as characterization</i>
<b>Reasoning</b> abstract, sound, insightful	The future of teaching mathematics	Interest in understanding content and pedagogy of teaching mathematics	"In order to develop the teaching of mathematics into more practical mathematics, the mathematics teacher education should also be more practically oriented."
<b>Performance</b> effective	Drama as a pedagogical method	Interaction between student teachers and multicultural group	"It was noteworthy that we, as teachers, also participated as equals in the exercises instead of just instructing."
	Group dynamics among pupils	The influence of teacher's actions on group dynamics	"Teacher is the primus motor of group spirit and he/she is an example of how to respect others."
<b>Self-reflection</b> perceptive, insightful, adaptive	Group dynamics among pupils	Reflecting group dynamics as a phenomenon and through that develop pedagogical skills	"Our research shows that teachers' attitude and actions have an impact on the pupils' feeling of safety, which then has effects on group dynamics. --- Thus, by understanding group dynamics, how it forms and its components, teachers can have an impact on their pupils' learning processes."
	Drama as a pedagogical method	Reflecting on the feedback	"We could imagine that any one of us could continue with the same group of students after successful drama session."
	Collaboration among different subject teachers	Reflecting on collaborative teaching	"We felt that this topic (collaboration) was meaningful, because none of us wanted to teach only one subject but teach collaboratively."
<b>Development</b> integrative, ethical	Collaboration among different subject teachers	Understanding pedagogical themes that were profoundly significant to the group	"Becoming a good teacher is a similar process as becoming an expert in any other field. --- That is why teachers should co-operate with other teachers in order to develop as experts."
	Drama as a pedagogical method	Understanding the learning process	"The drama process gave us a new view of the everyday life of immigrants. The learning process became a collaborative experience."



## Conclusion and discussion

In this study, we have presented a cycle of Educational Design Research where the focus has been on supporting student teachers' professional growth. Based on various studies on the development of student teachers, we constructed a model of the student teacher's professional growth (Jyrkiäinen et al. 2014). We used and tested one part of the model during the course, Teacher as a Researcher. The theoretical background of this empirical testing phase leans on professional growth (Mentkowski & al. 2000) and social learning (e.g. Lave & Wenger 1991; Vygotsky 1978; Scardamalia & Bereiter 2006). During the course, the student groups executed projects that were based on their common interests. The written project reports served as data for this study cycle. As a result, the projects indicate that these types of academic pedagogical practices support student teachers' professional understanding in different domains: reasoning, performance, self-reflection and development. In addition, these types of pedagogical practices provide a good example of social learning and collaborative knowledge building.

The general aim of our design research has been to develop the curriculum of the pedagogical studies at the University of Tampere by modelling student teachers' professional growth. In our research and in this research cycle, in particular, the emphasis has been on developing pedagogical practices. When the research cycle is viewed through the different levels defined by Soini et al. (2013), the results of the study indicate that on theoretical level, it is possible to support student teachers' professional growth by creating possibilities to act as a responsible member of a community. Therefore, we argue that the theory of Mentkowski and her co-authors (2000) can be viewed and examined together with theories of social learning. On the developmental level, the model of a student teachers' professional growth allows teacher educators to create various pedagogical experiments and innovations. However, to strengthen the theoretical

background of the model, it needs further cycles of empirical testing. The results on each level imply that the model and the theory of professional growth by Mentkowski & et al. (2000) could bring a useful perspective to developing the curriculum in teacher education.

According to van Huizen et al. (2005), a student teacher's professional identity develops in guided participation when the participation consists of a commitment to an image of teaching that is personally and publicly meaningful and that underlies and directs the acquisition of professional knowledge and skills. This type of Vygotskian perspective requires that teacher education can ensure fruitful interaction between practice and theory, action and reflection, and where individuals can develop personal meanings through social practices. In our implementation of the course *Teacher as a Researcher*, we encouraged student teachers to find their own views, reflect on their experiences and thoughts and to implement them into their collaborative projects. Consequently, we managed to find bridges between theory and practice and successful collaboration between student teachers. During teacher education, educators can strive to create an atmosphere of togetherness where students can study and do research together in a productive and professionally stimulating atmosphere.

Finally, the substance of teacher education and its basic tone leans on community, theoretical and practical connection to support student teachers' professional growth. This study shows that using and developing social and collaborative pedagogical practices allows a broad spectrum of different possibilities to support student teachers' professional growth.

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# Contributors

## **Johanna Annala**

University Lecturer (Higher education), Tampere University  
Docent/Adjunct Professor (Teaching in higher education),  
University of Turku  
ORCID ID: 0000-0001-6531-9627

## **Tero Autio**

Professor (Teacher education, Curriculum studies), emeritus,  
Tampere University  
Professor (Curriculum theory), emeritus, Tallinn University,  
Estonia

## **Riitta Jaatinen**

Docent/Adjunct Professor (Foreign language didactics),  
Tampere University  
ORCID ID: 0000-0003-2281-5895

## **Anne Jyrkiäinen**

University Lecturer (Education), Tampere University

## **Pauli Kaikkonen**

Professor (Language education), emeritus, Tampere University  
Docent/Adjunct Professor (Language education),  
Tampere University



**Viljo Kohonen**

Professor (Foreign language didactics), emeritus,  
Tampere University  
Docent/Adjunct Professor (Language education),  
University of Jyväskylä

**Arniika Kuusisto**

Professor (Child and Youth Studies, ECEC), Stockholm University,  
Sweden  
Research Director, Docent/ Adjunct Professor (Education),  
University of Helsinki, Finland  
Honorary Research Fellow (Education), University of Oxford, UK  
ORCID ID: 0000-0002-6085-576X

**Elina Kuusisto**

University Lecturer (Diversity and inclusive education),  
Tampere University  
Docent/Adjunct Professor (Education), University of Helsinki  
ORCID ID: 0000-0001-5003-547X

**Jyri Lindén**

University Lecturer (Education), Tampere University  
ORCID ID: 0000-0001-8369-3137

**Juha Merta**

University Lecturer (Education), Tampere University

**Marita Mäkinen**

Professor (Education, Teacher education), Tampere University  
ORCID ID: 0000-0002-0496-0792

**Laura Pihkala-Posti**

Doctoral Student, Tampere University  
Lecturer in German, City of Tampere

**Jaska Poranen**

University Instructor (Didactics of mathematical subjects),  
Tampere University

**Jouko Pullinen**

University Lecturer (Art education), Tampere University

**Inkeri Rissanen**

University Lecturer (Multicultural education), Tampere University

**Eero Ropo**

Professor (Education, Teacher education and learning research),  
emeritus, Tampere University

Professor 2 (Teacher education), emeritus, Nord University,  
Norway

Docent/Adjunct Professor (Research on learning and teaching),  
National Defence University

ORCID ID: 0000-0003-3545-3272

**Harry Silfverberg**

Professor (Mathematics and science education), emeritus,  
University of Turku

Docent/Adjunct Professor (Mathematics education),  
Tampere University

**Outi Stüber**

Education Specialist, Tampere University

**Pirjo Vaittinen**

University Lecturer (Mother tongue didactics), emerita,  
Tampere University

**Jaakko Vuorio**

PhD Researcher, Tampere University

ORCID ID: 0000-0002-7419-064X

**Maija Yli-Jokipii**

Doctoral Student, University Instructor (Teacher education,  
Multilingual education), Tampere University



*'Teachers should be educated to work for the future and with the generation that will influence that future.'*

In Finland, teachers specialized in teaching a subject or subjects have been educated at the university level since the beginning of public and teacher education in the 19th century. This book introduces readers to the development, theories and practices of subject teacher education at the University of Tampere during the last 25–30 years – but from the perspective of the future of teaching and teacher education.

The authors are teacher educators and researchers, representing educational sciences, foreign languages, mother tongue, art education, mathematics and science, or social science teacher education.

The book is aimed at domestic and international audiences alike, providing insight to researchers, students and professionals interested in subject teacher education.



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