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# Experiences of a Research-based Approach to Teacher Education: suggestions for future policies

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## Introduction

Teacher education belongs to those social activities that generate wide interest amongst both political decision-makers and ordinary people (Bates, 2008; McMaugh, Saltmarsh & Sumsion, 2008). The status and academic level of teacher education have important implications for the quality of teachers and for the salaries that employers, be they municipalities, states or private organisers, must pay good teachers. The debate about teacher education has been going on for many years. Furlong and his colleagues have described its development in higher education in England over the past 15 years. The recognition of teacher education as an autonomous part of university education in the 1980s led to nationally regulated performance and the formal end of university autonomy in the 1990s (Furlong *et al.*, 2008, pp. 308–309). In Germany, the system has been challenged by the unifying trends of the Bologna process. Blömeke (2006) reports how the Bachelor's and Master's degree structures fundamentally affect both the organisation of teacher education and the traditional thinking of what teacher education is about. All-European views were presented by Buchberger and his colleagues in the Green Paper of Teacher Education in Europe where high quality teacher education was mentioned (Buchberger *et al.*, 2000). Outside Europe, Cochran-Smith (2008) discusses the development of teacher education in the US. She analyses what she calls 'the new teacher education' whose origins can be traced to the 1980s. One of its characteristics is the competition between universities and other locations as sites for teacher education (Cochran-Smith, 2008, p. 272). There is no one best way to organise it, so Zeichner (1983) concluded when he carried out a meta-analysis of teacher education programmes. In this article, we discuss the research-based approach to organising the education of class teachers (Jakku-Sihvonen & Niemi, 2006).

The question of teacher education is timely. Academic education of teachers in Finland with a research-based approach has existed for 30 years. This is long enough to be able to evaluate its effectiveness. The high scores of Finnish pupils in international comparisons suggest that teacher education in Finland has been on the right course.

At a time when Finnish teacher education was a matter of great international interest, thanks to the OECD Programme for International Student Assessment (PISA), research into teacher education has declined in Finland. At the beginning of the 1990s, there were discussions about whether it should be moved to vocational institutions. This discussion inspired teacher education units to undertake research

on teacher education. There are now fewer discussions and teacher education research has apparently dwindled. Teacher education in Finland with its Master's degree is rather special compared to that in other European countries. We believe that it is important to elaborate on the theoretical framework of this type of education and obtain empirical evidence on how programmes are elaborated, together with experiences and evaluations of such programmes. Based on this information, we consider the present state of teacher education in Finland and suggest future guidelines.

This article is based on a series of research activities in which the research-based approach to teacher education was investigated. These activities included both quantitative and qualitative research and the objects of the research were both students and teacher educators. The three-stage research project presented in this article was conducted to investigate whether and how the students and teacher educators involved in research-based teacher education considered their education, especially with regard to the *research-based* aspect. We needed to investigate whether our students had internalised it as an organising theme. Hence, we asked them about their appreciation and realisation of research-based aspects in their education. Furthermore, we wanted to determine whether the teacher educators, who are supposed to represent this theme in their teaching and thinking, actually do so. And we wanted to know how they perceived the research-based approach as an organising theme.

Although most of the authors of this article come from teacher education, some represent a broader perspective on pedagogy of higher education. Our purpose is to discuss some salient characteristics of research-based teacher education. In addition, we propose some viewpoints on teacher education based on our research results which could be valuable for teacher educators and researchers in a broader context. Although the context here is Finland, the views presented may interest a wider European audience.

## A Brief Overview of the Development of Research-based Teacher Education in Finland

In the 1960s, a well-known Finnish educationalist, Matti Koskenniemi, described his view of a didactically thinking and reflective teacher. He was referring to a teacher's behaviour during the instructional process (Koskenniemi, 1971). His idea was proposed somewhat earlier than the shift to research on teacher thinking that took place in Anglo-American educational research in the 1970s (Clark & Peterson, 1986). Although this trend in the English-speaking world later influenced Finnish educational research, Finns also have their own conceptual background and research tradition in what is now called teacher's pedagogical thinking.

The idea of a didactically-thinking teacher was introduced at a time when there were political reasons to make teacher education more professional and raise its academic status. Later, at the end of the 1970s, Master's level teacher education programmes were established to replace the former, less academic class teacher degree. The number and quality of theoretical educational courses and methodological courses increased. To adopt a research-based approach to the training of class teachers became possible.

Followed by new system degrees and greater academic content, the concept of research-oriented teachers developed in class teacher education (Lahdes, 1989; Ojanen, 1989; Kohonen, 1993). Koskenniemi's idea of a didactically-thinking

teacher was broadened to a more comprehensive view of teacher's work. A little later, Kansanen (1995) brought together the Anglo-American teacher thinking research and the German tradition of *didaktik*.

Research-based teacher education means that all the courses are integrated with research. The aim is to educate autonomous and reflective teachers who are capable of using research in their teaching and can be defined as pedagogically-thinking teachers. Becoming trained in research-based thinking starts at the very beginning of teacher education by reading research literature, writing essays and portfolios and becoming familiar with research methods. Hence, students have opportunities for self-directed reflection and developing a personal practical theory of the instructional process. Research-based teacher education also requires teacher students to produce their own research in the form of Bachelor's and Master's theses. The aim is not to produce researchers, but rather to provide students with skills and knowledge to complete their own studies, observe their pupils, and analyse their thinking. Future teachers should be able to base their pedagogical decision-making on a theoretical foundation and reflect on their work as teachers. A Master's thesis, which the teacher students produce at the end of their studies, is a formal research document. However, its main priority is not to produce new knowledge or novel results, but rather to produce a research report and discover something either practical or theoretical based on the research (Kansanen, 2007; Krokfors, 2007; Westbury *et al.*, 2005).

In Finland, research-based teacher education has four characteristics. First, the study programme is structured according to the systematic analysis of education. Secondly, all teaching is based on research. Third, activities are organised in such a way that students can practise argumentation, decision making and justification while investigating and solving pedagogical problems. Fourth, students learn academic research skills. When teaching is based on research, teachers teach what they study, or their teaching draws on well-articulated knowledge of recent research. In research-based teacher education, learning research skills means that students start to learn qualitative, quantitative and mixed research methods and to practise research through well-defined activities and assignments from the beginning of their studies. Students should come to identify the structure and quality of their own conceptions of teaching during their studies by reflecting on their experiences and through theoretical studies. One of the main purposes is to learn to understand the difference between normative and descriptive arguments in justifying decisions.

Thus, in Finland, writing and conducting research for a Master's thesis is part of initial teacher education. Students become familiar with different methods as they can choose the topic and research method. However, along with the courses, they must conduct smaller inquiries, such as observation, action research or experimenting with different study modules. During teaching practice, besides frequent reflective discussions with their supervisors, they must observe and analyse their own as well as others' teaching. They are also expected to relate their teaching practice experiences with theoretical knowledge, which is then reported in a portfolio at the end of the teaching practice.

In other countries, researching teaching, whether one's own or someone else's, may be part of in-service teacher education (Ponte, 2002) or continuing professional development (Elliot, 2004). In Finland, teachers can continue their studies to the doctoral level if they wish. Many do so, often studying their own teaching or related issues.

## A Research-based Approach in the Daily Practice of Teacher Education: conceptions, attitudes and experiences

At the University of Helsinki, we carried out a number of research activities in which a research-based approach was investigated. 278 students were surveyed in the spring of 2005 and 2006. Then, in 2007 a survey of teacher educators was launched and 33 (63%) answered. After the survey, eight teacher educators were interviewed for more detailed information. Thus, the research progressed in three phases. Phase 1 was reported in Jyrhämä *et al.* (2008), Phase 2 in Byman *et al.* (2009), and Phase 3 in Krokfors *et al.* (2009). A synopsis of the research activities is presented in Table I.

**Phase 1.** In the first survey, the target was a group of students who were working as teachers whilst studying. The results indicated that they mainly understood a research-based approach as the basis for the curriculum structure. They appreciated this approach most in research seminars and in working on their Master's theses. In the case of pedagogical content knowledge of subjects taught in comprehensive school, the students did not regard this approach to be as important. The differences between students' attitudes towards the research-based approach and their experiences of how well it had been realised were analysed. The means of the variables of the students' attitudes and experiences of the realisation of the research-based approach were compared. This revealed that they expected a more research-based approach in their courses than what they experienced. Selected aspects of the research-based approach were investigated in more detail. These included an appreciation of the Master's degree studies and how the methodological studies were organised. The students appreciated the high level of the Master's degree studies. In other words, they considered it valuable that teachers had followed rather extensive academic studies instead of more practical teacher training. They experienced the methodological studies as a solid entity which gave all-around knowledge of different methods and felt that it was important for these courses to start sufficiently early in their studies (Jyrhämä *et al.*, 2008.)

**Phase 2.** In the second survey, conducted in 2006, students in 'traditional' class teacher education were targeted. The content of the survey was similar to that of the multimode teacher education students. This was also true of the results (Byman *et al.*, 2009).

**Phase 3.** In the third phase, the authors' department was the target. The results indicated that teacher educators' attitudes towards the research-based approach were positive and that they appreciated it as an organising theme for primary school teachers' study programmes. However, there were differences between various parts of the education programme for class teachers. The results suggest that the research orientation is not seen as being as obvious in courses with pedagogical content knowledge as in those in the major subject, education. Also, the didactic practicum has a lower mean than the final practicum, which supports the same interpretation. But it is significant that all the teacher educators thought that the research-based approach was important for their subject (Krokfors *et al.*, 2009). The interviews revealed that the teacher educators understood the research-based approach to represent a general view of teacher education. It was recognised as a commitment to and a profile of the department. Research-based teacher education is part of the academic university curriculum. Its origins are

TABLE I. Research activities focusing on research-based teacher education

| Date and method | Participants | Research questions<br>The research was carried out in Finnish. In the course of the research activities, fresh nuances entered into the research questions. For this reason the research questions vary at different stages, as reflected in the English translations. |
|---|---|---|
| **Phase 1** | | |
| Spring 2005<br>Survey (n = 113) | Students in the multimode class teacher education programme | 1) Whether student teachers appreciate the research-based approach on which their teacher education is based;<br>2) What kind of experiences did the students have concerning the realisation of the research-based approach in their teacher education studies; and<br>3) Whether there were the differences between appreciation and realisation? |
| **Phase 2** | | |
| Spring 2006<br>Survey (n = 165) | Students in the 'traditional' class teacher education | 1) What kinds of attitudes do the student teachers have towards the research-based approach, and how do these two student groups differ from each other in this respect?<br>2) What kind of experiences do the student teachers have concerning the realisation of the research-based approach, and how do these two student groups differ from each other?<br>3) What are the differences between the attitudes and the experienced implementation of the research-based approach, and how do these two student groups differ? |
| **Phase 3** | | |
| Spring 2007<br>Survey (n = 33) | Teacher educators in the class teacher programme | To what extent do teacher educators appreciate the research-based approach? |
| Spring 2007<br>Interviews (n = 8) | Teacher educators in the class teacher programme | 1) How do teacher educators understand the research-based approach?<br>2) What relevance do teacher educators think the research-based approach may have to teaching? |

not just in the history of teacher education, but also in the pedagogy of higher education and in the principles of how academic studies are organised. What is typical of university teaching is that teachers conduct research on the subject they teach. The aim of methodological studies in the teacher education curriculum is two-fold. Students are provided with the means to carry out research and they behave like researchers during their studies. They write Bachelor's and Master's theses. This kind of producer capability is also recognised in teachers' competence. However, the main goal is not to produce research, but rather to have students understand educational research with a positive attitude. The interviewees saw the goal of the research-based approach as being to develop student teachers' pedagogical thinking. Thus, the main goal is not to educate researchers, but to produce teachers who think and approach their work in an inquiring manner. This means that teachers must understand the educational concepts and apply them correctly. Theoretical pedagogical thinking is applied in practical, everyday settings. Instead of providing ready answers and tips, a research-based approach encourages student teachers to make independent pedagogical judgements. This calls for autonomy, which, in turn, requires sufficient educational knowledge and professional self-assurance. The interviewees argued that the research-based approach was relevant to the teacher's work. The nature of the teacher's job has changed: teachers are actively involved in curriculum development and evaluation processes. Schools themselves have changed. They are a place where several professions meet and a teacher's work includes trans-professional collaboration with school psychologists, pre-school teachers or those engaged in health care. The interviewed teacher educators claimed that school was no longer the static workplace for which teacher education prepared students. More dynamism is needed because of the emphasis on self-development and management (Toom *et al.*, 2008).

## Proposals for Teacher Education in the Near Future

Based on our research results presented earlier and on our theoretical articles on teacher education, we have summarised three essential viewpoints and directions in which teacher education programmes could be developed in the near future. We also point out implications that are the result of higher academic research-based teacher education. We will present three proposals which are not meant to form a hierarchy. The first is *Teacher education as higher education*; the second is *a Master's degree guarantees a high conceptual level*, and the last is *the goal is a pedagogically thinking, reflective and inquiry-oriented teacher*.

### *Teacher Education as Higher Education*

As we mentioned at the beginning of this article, teacher education is being debated and views on its academic status vary. Although 30 years have passed since the shift to the required Master's level for class teachers in Finland, it seems to be the right thing to have done. But at the time the move was not unanimously endorsed. Today, this shift may seem to have been an educational decision. However, in the 1970s, it was the outcome of a complex process with political interests.

The new academic education for class teachers was heavily criticised, mostly by educators outside teacher education (Kivinen & Rinne, 1992; Simola, Kivinen & Rinne, 1997; Simola, Rinne & Kivirauma, 1999). Recently, there have been fewer criticisms. In our view, there is still some doubt about the academic status of

teacher education departments compared with other university departments. Most chairs in teacher education were established 30 years ago. As a newcomer oriented to a specific profession, teacher education is still seeking its *raison d'être* in the university community. However, there is no need for serious concern about its academic level. For example, in research evaluations carried out in 1999 and 2005 by international evaluators at the University of Helsinki, the department of teacher education obtained reasonable scores (Lahtinen, 2003; Kansanen, 2005.) Before these evaluations, teacher education was evaluated by the Ministry of Education in 1994 (Buchberger *et al*., 1994) and again in 1999 (Jussila & Saari, 2000). Thus, it has been under regular consideration since the shift to requiring a Master's level education.

On the European scene, Finland is something of a pioneer. According to the *Common European Principles for Teacher Competences and Qualifications* (2005) (www.see-educoop.net/education_in/pdf/01-en_principles_en.pdf), the education of teachers in the EU must be at higher education level or its equivalent. In many European countries this goal has not been achieved.

In Finland, from the administrative point of view, departments of teacher education are equal to other university departments. Our results suggest that the academic education of class teachers is expected to follow the functional principles of universities. That means serious research, an effective publication strategy both nationally and especially internationally, and a research-based approach. Generally speaking, all teaching staff hold doctoral degrees and carry out research, as is the case in university departments in general. The legislation concerning universities is changing in Finland and this will also have implications for teacher education.

An encouraging aspect of the status of teacher education is the way young people see the discipline when choosing their studies and future careers. For example, the number of applicants for the class teacher education programme at the University of Helsinki is over 1,000, while the number of accepted applicants is around 100. This means that the department can choose the best. Although the situation is good, there is also a need to consider how to make teaching even more appealing to those who choose this career. This issue will be considered next.

### *A Master's Degree Guarantees a High Conceptual Level*

Concerns about the quality of teacher education and its intellectual attraction for young people seem to be common to several countries. For example, Ball and Forzani (2007) state that, in the US, criticism of teacher education and education as a discipline has flourished for decades. Targets of this criticism include the low intellectual demands of teacher education and the weak academic qualifications of students and professors (Ball & Forzani, 2007, p. 529). In addressing these kinds of concerns, which were especially prevalent in the 1960s, teacher education in Finland has attained its present academic level.

A salient question is whether teacher education attracts young people who are planning their future and choosing their careers. It is understandable that highly demanding university studies interest intellectual persons more than studies with fewer such demands. There are also concerns about keeping teachers in teaching jobs: why educate people to become teachers if they leave the job after several years? However, this could also be seen from another perspective. In this article, we have emphasised class teacher education in which there is a well-defined body of studies to prepare class teachers for practical work. In the eyes of a young person

planning the future, this kind of clear aim may be too restrictive. If instead we highlight other options that Master's level studies offer, then teacher education may appear more appealing. Choosing teacher education does not push a person into a cul-de-sac in future life. This view perhaps better suits present society in which people are constantly shifting between jobs and fields of working life. It also implies that unmotivated teachers leave, while motivated teachers stay. Working life is becoming more pedagogical because of the needs of lifelong learning. Increasingly, there is a need for pedagogical knowledge in the work place. Teacher education may provide pedagogical knowledge that is also applicable outside school, for instance in companies and other organisations. Thus, while schools may lose when teachers leave, society may gain because of the pedagogical knowledge that is disseminated.

The fact that all teacher education in Finland is mandated to continue through the Master's degree may enhance the status of a teacher's work and teacher education. When a person is asked, 'What do you do for living?' and the answer is, 'I am a teacher', the person who posed the question knows that he or she is talking to someone with an academic background — without asking further, 'What kind of teacher are you?' To be a teacher means to have completed substantial academic studies and have a university Master's degree.

Obviously, different kinds of teacher education programmes include studies that focus on everyday practice and on mastering general teaching skills. The emphasis here is usually on the acquisition of practical skills and fundamental knowledge that typify the whole instructional process as well as a variety of subject matter pedagogical content knowledge courses. Wilson, Floden and Ferrini-Mundy (2001) found that these courses significantly improved student achievement. However, after this basic stage, additional courses did not obtain the same result. This phenomenon is called the threshold effect, beyond which further effect is minimal, at least in the pre-service level of teacher education. This kind of basic level is needed. However, beyond this level, there is a need for a conceptual level whose goal is the sustained development of a teacher's work. Based on our results, students did not consider the research-based approach as being too demanding, but they expected it to be more concrete. Although connected to the basics, the conceptual level is not directly linked to a teacher's daily practical work and refers to reflection, thinking, discussion and other research-related activities (Kansanen, 2004). The general level also implies a kind of meta-cognition of one's own work and pedagogical decision-making.

As our results indicate, teachers' work is not a puzzle of pedagogical incidents which teachers handle piece-by-piece in an inductive way. In their daily work, they encounter new situations with no ready answers. In order to develop a holistic approach to work and have one's own (objective) theory, sufficient conceptual knowledge of education is needed. An additional point here is that young people graduating from school may possess a rather natural, science-like perspective on scientific knowledge and expect exact answers to problems. Education is not so exact a discipline. The conceptual level should provide students with an understanding of the nature of education as a discipline.

While practice is traditionally associated only with practising teaching, in the academic research-based approach it also covers the activities of practising research. Students need guided practice to acquire the skills to carry out research in pedagogically meaningful situations. Theoretically-oriented courses are not

enough. Students need to work on skills such as observation, interviewing and interpretation. Our results support this view. Teacher educators saw students behaving like researchers during their studies. Knowing and action must be interactive, especially in undertaking research (Krokfors, 2007).

An optimal situation is reached when the two forms of practice — teaching and research — are integrated, in other words, when a student's research activities around the Master's thesis are intertwined with final student teaching practicum in a field and vice versa. There are already examples of such integration (Jyrhämä, 2006), but this kind of performance should be encouraged now that the research-based approach provides opportunities. Bates (2008, pp. 289–290) also emphasises the importance of integrating research activities and practice in teacher education, which could lead to working practices when student teachers begin real teaching.

*A Pedagogically-Thinking, Reflective and Inquiry-Oriented Teacher*

Ultimately, the goal of research-based teacher education is pedagogically-thinking, reflective and inquiry-oriented teachers. This means that the purpose is not to educate researchers or even teacher-researchers *per se*. The objective is to acquire an inquiring attitude to teaching. Thus, teachers are able to observe, analyse and develop their work. Teachers' pedagogical thinking means the ability to conceptualise everyday phenomena, to look at them as part of a larger instructional process and to justify decisions and actions made during this process.

Theoretical studies of teacher education familiarise students with the concepts of the instructional process. Hence, it is possible to reflect on the experiences and react to the activities in practical situations. As teachers reflect on their teaching pedagogically, their acting and thinking take place at three levels. The first is the action level, in which teachers plan, realise, and evaluate their action (i.e. teaching). At the second level, their thinking is focused on practical theories of education. At the third level, the teachers' thinking focuses on meta-theories of education based on practical theories. Moving between the levels may be constant. Teachers are continuously making educational decisions. In order to make them rationally, they need ways to justify their actions and reason using relevant arguments. In addition, intuitive justification is often mixed with rational argumentation in this process (Kansanen *et al.*, 2000, pp. 155–170).

As the European Commission's report *Improving the Quality of Teacher Education* (http://ec.europa.eu/education/com392_en.pdf) states, changes in society, such as new technology, demand more knowledge and skills from teachers. The report refers to high quality initial teacher education, which we can consider research-based teacher education to be. As teachers are educated to become autonomous actors, with the ability to make rational, theory-based decisions and to consume as well as produce research, they are able to meet the challenges of the future.

## Implications for the Future

Teacher education as higher education guarantees a higher conceptual level. It also means that students possess research and academic writing (and reading) skills. In five years of education, which is the suggested length of the programme based on the Bologna process, teachers reach such a high level of expertise in education as well as a second subject of their choice that they are able to enter their teaching

positions as professionals. In Finland, teachers' work is relatively autonomous, so teachers must be able and ready to justify decisions, for instance, to parents, school principals and colleagues. As their education gives them such a wide range of knowledge and skills, they ought to be able to work in multi-professional teams by bringing their own expertise to the discussion. One aspect of teachers' autonomy in Finland is curriculum development in which teachers are required to participate. For this, they need many skills, ranging from academic writing to pedagogical content knowledge.

Inquiry-orientation is also transmitted from the teacher to the students. The Finnish National Curriculum promotes a socio-constructivist view of learning and knowledge which is in line with the ideas of research-based teacher education. Because inquiry-oriented teachers observe or study their own teaching, they also serve as an example and guide their students towards inquiring learning.

One factor in Finland's more outward orientation is that several schools are participating in a variety of projects within the EU whose focus is on school development. Some include research on school development.

Because teachers' education is not context-bound, teachers may also be employed in other fields and positions in society. This movement of labour must be viewed not just as the attrition of teachers, but also as an advantage for society in general.

Another aspect of teacher education is continuing professional development (CPD), which must be organised differently from what is often expected of such curricula. Along with updating pedagogical knowledge and skills, CPD studies must take the teachers' professionalism to even higher levels. In Finland, one form of CPD is the licentiate or doctoral studies. This option is open to any teacher with a Master's degree. However, as the *Common European Principles* state, teachers cannot act alone. They need policies to support them, both during initial teacher education and continuing professional development.

Niemi (2008, p. 200) makes a strong argument for promoting evidence-based practice in education and training. She states that the main components are the following: '1) research competence and research capacity-building starting at the pre-service level of teacher education; 2) working conditions which promote evidence-based practice; 3) the quality of evidence and research; 4) the effective delivery of and easy access to evidence; 5) an evaluation culture which gives space to contextual factors and practitioners' knowledge; and 6) collaborative professional networking.' Niemi (2008, p. 203) also stresses the important role of principals in promoting research- and evidence-based practice in schools. In the Greek context, Papasotiriou and Hannan (2006, p. 373) found that teachers with no research experience made no use of research findings, unlike teachers who had taken part in research. This confirms our ideas about the importance of producing and consuming research.

Teacher education is under constant debate (McMaugh, Saltmarsh & Sumsion, 2008). It should be able to foresee a society's educational needs. One thing that is clear is that a teacher is required to act in a constantly changing educational context.

As mentioned at the beginning of this article, there is no ideal way to organise teacher education. Different programmes serve different purposes. Different kinds of teacher education should be investigated on the grounds of their objectives and settings. One such setting is the academic context in which teacher education leads

to a university degree. This context has been discussed in this article. However, being academic does not necessarily mean that teacher education is research-based, which, in our view, ensures high quality higher education. A key aspect is that there should be a well-defined body of studies with a main subject and minor subjects leading to a Master's degree for which a thesis is written. This kind of academic teacher education comprised of a conceptual level in addition to the basic level enables a research-based approach in which pedagogical thinking is emphasised.

Recently, evidence-based education has been widely discussed, especially in the English-speaking world. The term 'evidence-based' seems to have various interpretations. The roots can be traced to medicine, in which two types of evidence-based activities have been suggested: evidence-based guidelines and evidence-based individual decision-making (Eddy, 2005). Similarly, we can discuss two types of research-based teacher education. Through research on teacher education we obtain results, or evidence, that can be used as guidelines for its further development. Another type concerns the daily practice of the individual teacher, the teacher's pedagogical thinking. The research endeavours presented in this article may serve as empirical evidence to contemplate the education of future teachers.

According to Niemi (2008, p. 203) there is a strong effort in Europe to raise the competence and status of teachers. She argues that the European Commission implies that 'teacher education should be based on research and teachers' work requires abilities to reflect the evidence on which they base their practice'. However, Niemi (2008, p. 193) also states that, for example, in Austria, the 'upgrading' of previous teaching training centres into universities is considered as the first step towards familiarising teachers with research. She mentions Spain and Germany as examples of education in which research is related to subject teaching, and not to educational training.

With higher academic education and a strong sense of professionalism and expertise may come greater appreciation. As a general trend in many countries worldwide, teachers are not very highly respected and the teaching profession is not among the most sought after. Yet in Finland, roughly three times more students apply for teacher education than can be accepted in study programmes. Although teachers' salaries in Finland, as elsewhere, are below average among academic professions, there is continuing interest in this profession. Perhaps the status of high quality education plays a role in this phenomenon.

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