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Teacher Education in Finland – Persistent Efforts for High-Quality Teachers

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Teacher education systems in different countries can vary greatly in terms of length, content, and structure.¹ Historical and political roots and contexts are factors that shape the background of these differences. The agency or actor that is responsible for organizing teachers' pre- and in-service training also varies. The amount of professional autonomy that teachers are allowed and the way in which they are prepared for their professional roles depend upon many system-wide factors, such as the aims and value basis of the education, the status of the teaching profession, and the general quality of teaching and learning in school. Many of these factors are consequences of earlier decisions during certain historical situations, including in the Finnish education system and teacher education. In this chapter, we reflect upon how and why the Finnish education structure and teacher education have been revised in the last decades and what processes and decisions have led to its current situation. The Finnish education system has received a great deal of international attention because of its students' high performance in international comparative studies.^{2,3} Worldwide, Finland is also ranked at the top in terms of its adult population's competences in literacy and numeracy, and in problem solving in technology-rich environments.⁴ Many researchers have reported that the quality of teachers seems to be a factor in this success.^{5,6,7} When analyzing how Finnish teachers have achieved such competences and professional quality, one must examine the decisions made in the Finnish education system beginning in the late 1960s, almost 60 years ago.

This chapter provides an overview of how teacher education and teachers' professional roles have developed in the Finnish education system mainly since the 1980s (with some sections beginning in the late 1960s) until the present. The chapter begins with a historical summary of landmarks in Finnish education that have been essential for high-quality teachers and their professional roles. Thereafter, it introduces the main features of recent teacher education programs and concludes with a focus on a new national development project called Teacher Education Forum.

Education as a Basic Right for All Since the Late 1960s

The Finnish education system is an internationally examined example of a high-performing education system that successfully combines high quality with widespread equity and social

cohesion through reasonable public financing.^{8,9} The path to this current state has been a long one. After the Second World War, the baby boom of the 1950s increased the number of pupils in Finland. At the same time, the concept of a welfare society emerged in Nordic countries, particularly in Sweden that is a neighboring country to Finland. In this vision, the state played a key role in protecting and promoting the social and economic well-being of its citizens. It was based on the principles of equality of opportunity, equitable distribution of wealth, and public responsibility for those unable to avail themselves of the minimal provisions for a good life. In Finland, free education was a part of this vision; it was regarded as a basic right and service for all citizens. On a strategic level and also a more practical level, education became a key condition for the Finnish economy's survival, as the country's economy structure was changing from agriculture, farming and forestry to industry.

Equal opportunities in education were not a reality in the Finnish society of the 1950s. There were large disparities among the population despite the common obligation to attend elementary school that was enacted in 1921. In 1950s, of the population older than 20 years, 29% had no education and in rural areas, this percentage reached 35%. Geographical differences were huge: in the southern part of Finland, the uneducated portion of the population (older than 20 years) was only 14%, but in northern rural areas of Finland, it was almost 48%.¹⁰ In those days, Finland had a parallel education system; here, ten-year-old children had to choose their future careers. They had to seek entrance and pass examinations into academically oriented schools or choose a vocational track. If they selected the vocational route, they could not seek entrance to higher education. The education system placed individuals into one of two categories at a very early stage of their lives, thus creating a divided nation. The academic schools very often had tuition fees, which furthered the divide. Poor families and uneducated parents either could not see the value of schooling their children or could not afford to do so.

Moving from this parallel system toward a more comprehensive model was not easy. The Head of the National Board of Education had proposed more equal comprehensive school as early as the 1930s, and educationalists and education administrators were working to change the education system in the 1950s. But, these claims and proposals did not lead to reforms.

Finally, in the 1960s, the ideology of social justice and education as contributing to a more equal society and democracy was gaining momentum in Scandinavian countries. In Finland, this was mainly within leftwing political parties as well as from some centrist groups. There were many political debates surrounding education because rightwing party representatives and the earlier parallel education schoolteachers wanted to keep the old system. Finland's past livelihood was related to forestry and agriculture, and woodcutters and farmers had very low levels of education.

However, all the parties understood that the labor market was in the process of changing. Finland was becoming an industrial country, and peoples' skills were lagging behind its development. Factories began to spring up in urban areas, and often, their workers had little or no education and often came from very poor families; social inequality increased. In 1970s, the concept of life-long learning also emerged, and it gradually overtook the earlier understanding that there were two separate groups of children: gifted academic children and those who were only practically oriented. Finland as a small country would not achieve economic welfare if its overall level of education continued to be as low as it was. There was a wide consensus between politicians that the earlier system did not work. Finally, even though there were many different opinions about how to change the system, a new school model was planned. From 1965–1971, many committees of policy-makers and experts made several plans for a new school system, undertook explorative research and pilot studies in different parts of Finland and made plans for implementations of the school reform. Finally, Parliament passed the Comprehensive School Framework Law on 24 May 1968. The parallel system was abolished, and the comprehensive school model was born. Its main principles were as follows:^{11, 12}

- Basic education comprises nine years
- All citizens have an equal opportunity to receive basic education regardless of age, domicile, financial situation, sex, mother tongue, or residence
- School is free for everyone
- Municipalities are the local providers of education, and earlier state schools are placed under the control of local authorities

Implementation of the new law occurred from 1972–1978. The special strategy used to enact it was remarkable: the northern and eastern areas were the first to undergo these changes because they had the lowest level of education and the highest levels of inequality in education. The capital city area was the last to transform (from 1977–1978). The implementation was organized in such a way that there were coordinated national, regional, and local implementation plans. Concurrently, the Ministry of Education and the National Board of Education organized massive in-service training for all teachers. Teachers needed new competences, as schools now contained entire age cohorts (range: 7-15 years old students), not selected groups based on entrance examinations at a 10 years age. The task of teaching and motivating heterogeneous student groups was new to teachers. The new comprehensive school had two tiers: grades 1–6 as the primary level (7-12 years old students) and grades 7–9 (13-15 old students) as the lower secondary level, and all students had a right and obligation to continue until the end of the 9th grade. Both levels had their own national

curriculums. The new model was very centralized, and the national curriculum included detailed teaching content. In the mid-1980s, all public sector governance began moving toward a more decentralized model, and governance of the education system was part of this change. Municipals (means often cities) became in addition to being providers of education, also responsible for a local curriculum and quality of education. Local education actors and the specific needs of local contexts became key factors for education and its functionality.

Grouping different students based on their skill levels was a polemic topic when moving away from the parallel system based on student selection. In the beginning, the comprehensive schools used a tracking model in which students were sorted into low, intermediate, and high courses in math and languages within the comprehensive school. This was a concession to earlier academic secondary school teachers and business representatives who were afraid that Finland would lose its gifted children if they were placed in the same schools as the other children.¹³ However, this principle was set into a new framework when students' paths to life-long learning were assessed. The criteria for continuing to the next level of the educational system, particularly to upper secondary schools (high schools), demanded that students needed to complete at least the intermediate-level courses in the comprehensive school. The tracking system negated the life-long learning paths, but the labor market and new occupations required students to continue their education after completing their basic education. The tracking system was completely abolished by the 1980s, and instead of segregation, schools were required to provide extra teaching hours and special needs support for weaker learners. Every student needed to have the skills to continue to the next level.

During the 1980s and 1990s, there were many political debates about the relevance of common comprehensive schools for all. Critical voices demanded more attention to gifted children. The comprehensive school had put much resources for helping children who had learning difficulties. These critical voices came from the business sector and rightwing party representatives. They were afraid that the common comprehensive schools did not provide enough inspiration, challenge, and support for gifted children. In spite of these debates, the comprehensive school model maintained its policy and the main national guidelines outlined that schools could have different local profiles and support students' individual qualities without separating them into different ability groups or schools.

Teachers were responsible for teaching an entire age cohort without dividing them into different competence profiles or school systems. The system also began to place a strong emphasis on inclusiveness, special needs education, and the students' holistic well-being; this trend continued and strengthened in the following decades. Understanding of learning had expanded, and

differentiating based on students' personal learning needs and objectives within education had increased. It placed teachers as local actors in very high professional roles. Overall, systemic reform required a new pedagogical concept and an overhaul of teacher education.

Following the development through the decades, Niemi and Isopahkala-Bouret summarized the major features of the Finnish education system that have influenced teachers' work.¹⁴ Their analysis reveals that the Finnish education policy has three main principles that have guided all activities throughout the education system for 40 decades. These principles are *equity*, which means providing equal opportunities to every learner regardless of their social, ethnic, and economic background; *flexible educational structures*, which allows continuing one's education, even in the case of a failure; and a *high level of education* for the entire population.¹⁵ The last principle means that lifelong learning is integrated with all levels of the system from early education to adult education.

Moreover, a fourth characteristic of Finnish education could be added: decentralization. It is related very much with the curriculum system. It has been changed during the comprehensive school's lifetime. At the beginning, comprehensive schools were very centralized, but since 1985, the municipalities' freedom and responsibility were increased as described earlier. Schools and teachers have become responsible for preparing a local curriculum and choosing learning materials and teaching methods.

Since 1994, the framework for basic education curriculum, prepared by the Finnish National Board of Education (since the 2017 National Agency of Education) has provided only very broad aims and content guidelines for teaching different subjects. The municipalities and, ultimately, the schools set up their own curricula based upon the national core curriculum. The national-level framework referred to as a core curriculum concerns all levels of the educational system: early education, pre-primary, primary, lower (middle school), upper secondary (high school), vocational, and adult education. The National Agency of Education is responsible for revision processes, and curricula reforms are usually conducted every 10 years by inviting the teacher union, principals, parents' association, companies, teacher educators, and several experts to contribute to new national core curriculum. The curriculum processes are interactive and participatory.^{16,17}

Enhancement-led quality assurance system for improvements

The Finnish approach to quality assurance in education has been described as an enhancement/improvement-led evaluation.^{18, 19} Evaluation is performed for the sake of improvement, not ranking. This principle has also been implemented systematically in the entire educational system from early childhood until higher education and adult education. It concerns also the development of teacher education nationally and locally in different universities. An enhancement-led evaluation system also means that teachers' work is neither determined by high-stakes testing nor by standardized testing. The evaluation system aims to determine what types of improvements are needed for better learning outcomes. Local education providers (municipalities) are responsible for the quality of educational services and assessment methods. Teachers also implement enhancement-led evaluation in student learning. This means that formative evaluation methods are used to decide how to support various learners. Toom and Husu write:

Added to this, the task of assessment is to help pupils form a realistic image of their learning and development. It is also stated, that pupil assessment forms a whole, in which on-going feedback from the teacher plays an important part. With the help of assessment, the teacher guides the pupils in becoming aware of their thinking and actions and helps them understand what they are learning.²⁰

Recently, In Finland, there is neither an inspection nor probationary time as they were in action in the beginning of the comprehensive school. Nowadays, new teachers are fully licensed when they start their work in schools after they graduate from teacher education programs. This has set high demands for teacher education programs. Teachers have a high degree of professional responsibility as decision makers for all students' learning.

Teacher education and respect for teachers

The big education system reform had a remarkable consequence for teacher education.^{21, 22} In the process, many important decisions had to be made. All teacher education was moved from the earlier colleges or seminars to eight traditional universities between 1971 and 1973. The major reason was that teachers needed new competences in the comprehensive school. Teacher education committee 1973 drafted the outlines of new teacher education:

- Teacher education for basic and secondary schools should be academic, and given in

universities.

- Teacher education should be unified. All colleges, seminars and earlier normal schools should be affiliated with universities.
- Educational studies of teacher education should be rethought
 - Teacher educational expertise should be increased
 - Theory and practice should be integrated
 - Pedagogical studies and academic subject studies should be combined better than earlier
- Studies related to society and educational policy should be added to teacher education programmes.
- Teachers education should be continuous and ensure teachers' development throughout their careers.²³

At the same time, the Finnish higher education was in a changing process. Especially degrees of social sciences were restructured and they all became 4 years programmes that were corresponding the Master degree in those times. Teacher education in universities had practically only one option: to provide MA level programmes. The new law of teacher education degrees enacted in 1979. This was a big change, particularly to primary school teacher education, which was also increased to the master's degree level (5-year programs). Class/primary (grade 1–6) teachers had previously received their pre-service teacher education in teacher training seminars or colleges. The programs had varied from one to three years in length. A new model of studies provided the cultural, psychological, and pedagogical features of teaching and instruction. Almost one-fifth of the program is dedicated to research methodology studies, such as quantitative, qualitative, and mixed methods, in order to create a proper understanding of methodological issues in human sciences. A primary students teacher also carries out also an extensive master's thesis as an authentic research in educational sciences.

The secondary school (grade 7–12) teachers had previously studied their majors in universities to at least a bachelor's level; in many subjects they even had a master's degree, and after their degree they received one year's practicum in a teacher training school. A new teacher education provided all secondary school teachers with a master's degree, and the scope of their pedagogical studies was widened. Secondary teacher education is now organized in eight traditional universities in cooperation with the faculty of a specific subject, like the Faculty of Science, and the Faculty of Education/Department of Teacher Education. Studies are divided into two parts: the subject matter knowledge is studied at the department of the particular subject (e.g., Physics) and the pedagogical

studies at the Faculty of Education. These pedagogical studies gave the student teachers the qualification necessary for teaching positions in all types of schools in their major and minor subjects. Since 1984, the secondary school student teachers have had pedagogical studies as a part of bachelor's- and master's-level studies. However, pedagogical studies could be taken also after the master's-level subject matter studies are completed. This is important in a country which avoid always dead ends in education: Students and in general Finnish citizens have possibility to continue their studies.

The aim was to unify different teacher categories and make all teachers familiar with the latest research in academic subject matter and pedagogy. Universities were seen as the most relevant place for teacher education because they provided the highest quality research environments. The change made teacher education a part of the academic community. Educational sciences became a discipline that provided bachelor's, master's, and doctoral degrees. Teacher education degrees for primary teachers required a major in education with teaching practice and a minor in academic subjects, while secondary school teachers required a major in an academic subject and a minor in educational sciences, which also included teaching practice.

All university degrees were at that time very strictly-defined programs. The centralized system led to a high degree of uniformity throughout the country's teacher education institutions. In the middle of the 1980s, a strong movement towards decentralization was implemented in all of Finland's public administration, which also concerned education and higher education, including teacher education. Teacher education departments now had more freedom to organize their own degrees and connect teacher education to their university's profiles. However, they also had to produce teachers who had the qualification of a master's degree.

The teacher education degrees have been updated in different phases, depending on changes in the educational system. One of the recent teacher education reforms is linked with the European Bologna process. This reform was carried out in 2004–2006 in all Finnish universities.²⁴ Teacher education was structured into three year bachelor's and two year master's degrees, but the teacher qualification still required both degrees. The traditional distinction between class teachers and subject teachers was retained, but the structures of the respective degree programs allowed them to take very flexible routes to include both in the same program or to permit a later qualification in either direction.

In Finland, the Bologna process was implemented in educational sciences and teacher education very interactively, both at a national level and also within the universities through a national teacher education project during years 2004 - 2006.²⁵ Nationally, all teacher education departments and other academic departments that had responsibilities in teacher education were invited to cooperate in making the draft recommendations for TE degrees. During that process, there were also many meetings and discussions with labor market representatives about teacher qualification. The common opinion was that teachers should have a master's degree. However, teacher education departments wanted to create some common guidelines although it was emphasized that Finnish universities are autonomous.²⁶ It was decided that these guidelines could work as recommendations for how to combine degrees and also give a basis for quality assurance. Consequently, the following main recommendations were agreed upon:

The teacher education curriculum should include the following components: (a) the latest scientific knowledge of subject matter and studies and how to transfer this knowledge into pedagogical content knowledge, (b) a research-based knowledge of pedagogy and subject matters, (c) research-informed professional skills and the competences required to guide and support different learners, (d) an understanding of the social and cultural dimension of education, which allows teachers to respond to the needs of individual learners in an inclusive way, and (e) studies that open the student teachers' awareness of teachers' roles as representatives of a moral profession and as public intellectuals in educational issues.²⁷

The teacher qualification requires 300 ECTS (BA is 180 ECTS + MA is 120 ECTS).²⁸ In the European Bologna process, credits were defined as ECTS (European Credit Transfer System) units (a unit consists of 28 hours of all students' studying, including contact hours and independent work with different types of assignments). Portions of various fields of teacher education studies can be summarized in the following way:^{29, 30}

- **Academic disciplines** (approximately 30–40 % of 300). Academic studies include a major or minors depending on the qualification being sought. Class teachers have a major in educational sciences and minors in other disciplines. Secondary school teachers have whatever disciplines are taught in schools or educational institutions.
- **Research studies** (approximately 20% of 300) consist of methodological studies, a bachelor's thesis, and a master's thesis.
- **Pedagogical studies** (minimum 60 ECTS) are obligatory for all teachers, and should also include teaching practice (approximately 33% of 60). The aim of 60 credits in pedagogical

studies means the new teachers are able to:

- integrate subject matter knowledge, knowledge about teaching and learning, and school practice into their own personal pedagogical view;
 - become aware of the different dimensions of the teacher profession: social, philosophical, psychological, sociological, and historical basis of education;
 - to collaborate in different networks and partnerships;
 - to reflect on their own personal pedagogical “theory/view” (reflection for, in, and on action);
 - act as autonomous professionals in planning, implementing, and assessing teaching and learning;
 - develop potentials for lifelong professional development through research orientation.
- Finnish teacher education has aimed toward the integration of practice and theory.^{31, 32}

The leading principle has been that teachers are educated to fill an autonomous professional role. This is the reason why pedagogical studies include also several phases of **teaching practicums**. All teacher education departments have teacher training schools. These schools are parts of universities and are specialized to support the student teachers’ professional development. They also have commitments to develop teaching and learning by creating and applying new methods in learning environments. Practicum is divided into different phases. (a) The pedagogical studies begin with an orientation phase that allows the student teachers to observe and analyze students and schools from a teachers’ perspective, after being a student for most of their lives. (b) The second phase is an intermediate practice during which the student teachers start to plan lessons and take on teachers’ responsibilities in the classroom, and which also allows them to gradually widen their professional work. (c) The last phase is called advanced practicum, where the student teachers deepen and widen their competences. This can happen in local, affiliated schools or in teacher training schools. It is worth noting that teacher training schools play an important role in the Finnish teacher education system.

- **Communication, language, and ICT** studies are obligatory (approximately 10 – 30 ECTS of 300).
- **Optional studies** may cover a variety of different courses through which students seek to profile their studies and qualifications (depending on other choices).

Teacher education programs in Finland are based on the assumption that evidence does not only

grow from systematic research. It can also grow from observations and experiences of experts, policymakers, and practitioners in their own fields.^{33, 34} If teachers are expected to work as professionals who have the freedom and autonomy to make decisions in changing contexts, then they must also be in a position to evaluate what works and what does not. This kind of capability starts already in pre-service teacher education, and the task of research studies is to prepare them to become critical professionals.

Research-informed and research-based teacher education

The research component is an essential part of Finnish teacher education programs.^{35, 36, 37, 38} It makes up approximately 20% of the whole of TE studies for both elementary (major in Education) and secondary school teachers (major in an academic subject). Research-oriented studies include research methodological courses, research seminars, and writing both bachelor's and master's theses.

It can be asked why Finnish teacher education emphasizes research-based orientation. In international literature, there is often tension related to the concept of research-based education and a confusion between several closely related concepts: research-based, research-informed, research-led, evidence-based, and evidence-informed policy and practice.^{39, 40} Many researchers warn that education is one of the most difficult fields for research- and/or evidence-based policy and practice.^{41, 42, 43, 44, 45} The major problem is who has ownership of knowledge and knowledge creation. Is it coming from academic or policy-level communities, outside practitioners' work, or are teachers themselves knowledge creators in their own profession? Berliner and Ozga see that education is a contextual activity.^{46, 47} It is very difficult to provide recommendations based only on experiments or data collected outside the practitioners' own field. Elliot has for a long time proposed action research as a tool for teachers' professional development, and there is a wealth of literature on how action research and design-based research can work in schools.^{48, 49, 50}

In Finnish teacher education, the concepts above are complementary. Research-based means that teacher education is grounded on continuous research-based inquiry in academic disciplines, including educational sciences, and this provides a basis for the improvement of the curriculum in teacher education. Teacher educators in university departments and teacher training schools are seen as teachers and researchers. The basic qualification for a teacher educator is a PhD. Teachers in schools may also work as research-based professionals when they use scientific inquiry and methods in their work or conduct action research projects or small-case studies in classrooms or

school communities. However, research-based, research-informed, or research-led concepts mean that knowledge from the scientific communities or practitioners' own inquiry-based communities is used in teaching and when selecting materials and methods for different learners. Teachers need knowledge about learners' development, recent scientific results in subject matters, and information about why some pupils learn and some don't. Teachers need scientific literacy as well as their practice-based evidence in order to understand on what grounds they can build their work. Teacher education must lead student teachers to this kind of culture. Even though educational research cannot provide direct applications to teachers, there are many ways it can inform or lead teachers' work. Design-based approaches in which practitioners and researchers work together in teachers' in-service training provide many options for practitioners to create a basis for their own work.⁵¹ Prospective teachers must learn how knowledge is constructed and how they can use different sources of evidence in their work.

In-service training is necessary for for keeping teachers' high quality competence. Contrary to pre-service teacher education, the in-service education or professional development of teachers is the responsibility of the municipalities/cities in Finland. Therefore, municipalities should and also have organised short in-service courses and professional development projects (PDPs) for teachers. Moreover, special centres have been established in many municipalities to co-ordinate local development efforts and in-service training. Some projects have substantially benefited from local and national networking. Moreover, teachers' pedagogical associations organise in-service training for teachers. For example, the Finnish Association of Teachers of Mathematics, Physics and Chemistry has annually organised in-service days for science teachers.

The Finnish National Board of Education (FNBE) is responsible for national-level implementation of educational programmes and strategies (e.g., ICT strategies) and for financing ICT tools and long-term in-service training programmes for teachers. For example, in year 2016 FNBE opened a call for projects emphasising the development of innovative learning environments in basic and upper secondary education and training of teachers in these environments. Finnish teachers, in general, have a positive attitude toward in-service training and participate in the training voluntarily.

Different approaches to teacher professionalism and professional autonomy

To understand a Finnish teacher's role and education, we have to see that teacher professionalism is a complex concept, and it has been defined in several ways. Several other terms, such as effective, competent, expert, quality, ideal, or respectful teacher, are used to describe a professional teacher.⁵²

⁵³ The professionalism and effectiveness of a teacher is typically approached through analyzing (a) the knowledge base of a professional teacher (input approach), (b) the process or the interaction that occurs in the classroom between the teacher and students (process approach), or (c) the outcomes of the teaching and learning process, such as students' learning outcomes measured by national tests or graduation rates (output approach).⁵⁴ The Finnish understanding of a professional teacher is close to the input approach. According to this approach, a professional teacher should have a versatile knowledge base, allowing him or her to act as an autonomous professional. The term "knowledge" is interpreted broadly in this context and is close to "competence" or "skill." This knowledge base supports the broad planning, organization, and evaluation of teachers' own instructional practices and students' learning and learning outcomes. Broad planning encompasses the planning of the local curriculum down to the planning of a single lesson.

Teacher professionalism in the context of "input approach" does not refer only to an individual teacher's competence but also to the status or appreciation of teachers.⁵⁵ In Finnish context, nature of leadership, collaboration culture, and structure of networks and school–society–family partnerships are important school-level factors support teacher professionalism in school level. Moreover, cultural and education policy factors, like trusts of teachers without relying on heavy inspection and testing support teacher professionalism in Finnish context.^{56, 57}

From the very beginning of teacher education for the comprehensive school has set as objectives to educate teachers, whose expertise is high-level and, therefore, to ensure they are capable of professional, collaborative and autonomous planning, implementing and assessing of their own work, including the planning of local level curriculum. This kind of professional role has made teaching careers very attractive and desired among applicants who seeks entrance to teacher education programs in universities. In fact, they are among the most popular academic options in universities.

Decentralization made schools more autonomous. It assigned new responsibilities to principals and teachers. The curricula must be drawn up taking into account the schools' operating environments, local value choices, and special resources. Education providers in practice cities may decide about the implementation of a curriculum in cooperation with interest groups. The aim is to ensure a high standard of general education. As it concerns pupil welfare and home-school cooperation, the curriculum must be drafted in collaboration with authorities charged with tasks that are part of the implementation of the local authority's social and health services.^{58, 59} Consequently, teachers are

responsible for much more than simply providing teaching contents. Students must be ready to continue studying at the next level of education and learn new skills, and schools must support their personal growth.⁶⁰ Teachers must make a huge number of pedagogical decisions every day, and they must communicate about students' learning problems with parents, special needs teachers, social workers, and nurses. Finnish teachers must also act as partners in multi-professional groups for students' well-being. The Finnish schools are inclusive, and special need students are in normal classes with several support systems.

Consequently, quality work is distributed to teacher level. Over the past several decades, research studies have indicated that local curriculum processes have inspired and empowered teachers and principals to develop the local curriculum and their own work and, moreover, increase the quality of education.^{61, 62, 63} Education authorities and national-level education policymakers trust professional teachers who, together with principals, headmasters, and parents, know how to provide the best education for children and adolescents in a specific district.⁶⁴

The teaching profession is very demanding everywhere in the world because of the complexity of many new needs of teaching and learning for the future. This is also the case in Finland, which is becoming a more multicultural society as well as a knowledge-based and technology-rich society in which all people need very high competences for work and lifelong learning. The new trends of the national core curriculum emphasize that schools are learning communities in which all partners are members of learning communities. In a recent analysis, Finnish teachers felt that the initial teacher education did not provide enough preparation for collaboration between home and school, multi-professional cooperation, or managing challenging students' needs.^{65, 66} The Finnish educational system requires much from teachers because of mixed-ability groups in teaching, high inclusiveness of education, and teachers' responsibility to modify the national core curriculum to local needs. Even though teachers have many high pressures in developing teaching and learning environments, most teachers felt that they were able to influence factors that promote students' learning.

At a classroom and student level, most challenges have focused on a trend of students' decreasing engagement in learning, especially in mathematics and science. Another discussion related to 21st century competences are the challenges linked to the impact and use of new technologies in and out of school situations.^{67, 68} For responding to the urgent need to improve all students' learning outcomes and their engagement in learning, and also for supporting teachers' professional development, several national projects have been launched by the Ministry of Education and

Culture in Finland since 2012, such as the “Future primary and secondary education” and a national project aiming to renew upper secondary education and teacher education.⁶⁹ They all aim to provide both teachers and students with 21st century competences. Preparation of national core curricula for pre-primary, basic, and upper secondary education belong to these endeavors.

New national-level core curricula for basic and upper secondary education were prepared in close collaboration with teachers, teacher educators, and providers of education (municipalities) during 2012-2015, and schools started with their own local curricula in 2016.^{70, 71} Both curricula emphasize the 21st century competencies and support teachers to analyze key education questions, such as: what will education mean in the future, how can education prepare all young people for the future, what types of competences will be needed in everyday and working-life situations, and what kind of learning environments and practices or teaching methods would best produce the desired education and learning.⁷² Therefore, the new curricula outline the need for broadly scoped competencies that aligns with 21st century competences, including the competencies such as critical and creative thinking and an ability to use a wide range of tools, such as socio-cultural (language) and digital (technological) tools. The curricula processes have continued during 2015–2016 at the local level. The Finnish National Agency for Education established Majakka-network (in English it means Lighthouse) for supporting the local curriculum work at the municipality level. This network has meetings and a web-platform. This second cycle has engaged teachers in analyzing the 21st century competences needed by all students. The national- and local-level curriculum processes will crystallize the vision of education for the future and the necessary know-how needed in the Finnish society. The importance of these processes is not limited to the description of what should happen in Finnish classrooms, schools, and municipalities, but it will also highlight the values and efforts to be taken this time.⁷³

As a part of education-related key projects in the current Finnish government program, a *Finnish Teacher Education Forum* was established by the Ministry of Education in February 2016 aiming to foster the renewal of teacher education as part of a national reform program. The aims of the *Teacher Education Forum* are to prepare a development program for teachers’ pre- and in-service education (lifelong professional development), to support the implementation of the program, and, moreover, to create the conditions for the renewal of Finnish teacher education through development projects. The *Forum* consists of almost 100 teacher educators, teachers, and other stakeholders, including experts from municipalities and from the teacher and student unions. The *Forum* has organized several meetings, both of the whole *Forum* and of the smaller thematic

groups. The *Forum* has analyzed the research outcomes related to teacher education, benchmarked strategies and policy documents in other countries and organizations, and organized a national web-based brainstorming platform related to the renewal of teacher education. The forum published the reform program, *Development Program for Teachers Pre- and In-service Education* (lifelong professional development), in the beginning of October 2016. This reform program describes what kind of teacher education and continuous professional development of teachers are necessary to ensure that teachers are able to support students in the classroom to learn the competencies (knowledge, skill and attitude) needed today, tomorrow, and in future.

According to the *Forum* program, Finnish future teachers are future-oriented and broad-based experts who create new pedagogical innovations and diversely utilize new learning environments. They are constantly developing their own competence and their working community. Second, teachers have in-depth knowledge of their field, pedagogical aptitude, and knowledge of values. Teachers have the courage to develop and experiment with things. They have the ability to apply new teaching innovations and skill to change their own actions. Third, teachers use the latest research and evaluations in developing themselves, their working community, and their educational institution.

The teacher education development program also introduces six main actions for the development of teacher education. Finnish universities are conducting development projects under these actions during 2017–2019. The key actions are:

1. Holistic view of teacher education

To identify what is common in teachers' pedagogical competence throughout the educational system from kindergarten to vocational training, more closely connect pre- and in-service education, and develop a well-functioning induction phase.

2. Selection and anticipation

To forecast demands of teachers and balance the number of teachers needed and educated in all areas and levels of the educational system.

3. Supporting the development of competences needed in generating novel ideas and innovations

To renew teacher education programs and their teaching and learning culture towards 21st century

competences and strengthen leadership, networks, and development operations for and together with local school sites.

4. Collaboration culture and networks

To promote and strengthen cooperation between all teacher education actors in universities: subject departments, department of teacher education, and teacher training schools; and further, to ensure cooperation between different teacher education programs: kindergarten, primary, secondary, and vocational teacher education.

5. Supportive leadership

To promote schools as learning communities with high-quality pedagogical leadership: goal orientation and interaction, strategic planning, and quality culture.

6. Research-based teacher education

To enhance teacher education programs and teaching practices and to ensure that they are based on research and that student teachers learn to (a) research skills and research orientation, (b) assess their practices, and (c) reflect on professional tasks and development independently and collaboratively.

These aims are very much in line with the earlier teacher education objectives of several decades ago. In changing contexts, the TE programs must be updated from a perspective of future needs and ensure that teachers have competences needed in schools and society today and in the next coming years.

In addition to teacher education pre-service revisions, teachers' in-service training is also under a cultural change towards more collaborative whole school programmes.⁷⁴ In earlier years, Finnish in-service training was based on training days and short courses. These types of courses are still being offered to teachers, but the trend is towards a more holistic and integrated approach. The new trend is to see teachers as developers in the whole school community. Teachers have research-based orientation in pre-service teacher education, and this should be used as a resource. It makes teachers capable of designing school-based projects and also teachers' own professional development as it relates to the school development. Collaboration within the school community as well as with external partners, especially parents, is part of teachers' professional development, and they need support for that, especially in the beginning of their careers. Teachers' work is becoming more and

more complicated, and working in multi-professional cooperation is important, especially when students need special education.

Conclusions

The Finnish education context is challenging for teachers because they are required to perform a variety of duties, such as planning the local curriculum and organizing assessments, engaging in networks at the school and city levels, partnering with families and participating in quality assurance processes. Thus, primary and secondary school teachers are educated in master's programs at eight Finnish universities. According to national- and university-level strategies, teacher education is based on scientific research and professional practices in the field. Being a teacher in Finland, the teacher education decree and the law of teacher qualifications require 5 years university studies (both BA and MA degrees) as a mandatory condition.⁷⁵ The program of study provides student teachers with the knowledge and skills they need to operate independently as academic professionals and to develop their fields.^{76, 77, 78} Becoming a teacher is one of the most wanted academic field in Finland. Revisions in the educational system, a systematic development towards a high profession status of teachers, trust on teachers and high professional autonomy has made the profession very popular. An emphasis on research is an essential characteristic of the programs that educate primary and secondary school teachers in Finland.⁷⁹ Pedagogical studies are a core element of the educational programs for both primary and secondary school teachers. During their pedagogical studies, students learn to combine educational theories, subject knowledge, and their personal histories and to integrate subject matter knowledge, as well as knowledge about teaching and learning and school practice, into their own personal pedagogical view.⁸⁰

The Finnish teacher education has grown in the political and historical context in which equity and lifelong learning have been leading educational principles, and teachers' high-standard professional roles have been seen as the main factors in achieving these goals. These have been continuously upheld in a national educational agenda. It has not meant a status quo, it has been more or less a continuous process in which enhancement-led quality assurance, decentralization of the educational system, and teacher education programs are in mutual interaction. Decentralization is implemented in the Finnish education system in several ways: local providers of education (municipalities) and local teachers prepare the local curriculum and, consequently, localize the aims and content of the curriculum. The educational ecosystem requires that educational provisions also be in close cooperation with other sectors of society, especially with social and health care.

The Finnish educational ideology has put a strong emphasis on inclusiveness and promotion of all students' learning.^{81, 82} Teachers are key players for taking care of different learners and promoting their holistic well-being. In addition to student-related competence, teachers are also responsible for the whole school development. They are decision makers and need to work in cooperation with several partners in education and society. This kind of teacher leadership requires high-quality teacher education and continuous, persistent work for developing Finnish teacher education.

Pre-conditions for the Finnish decentralized education system, which aims to provide high-quality education and equal opportunities for all learners, to be successful, are that (a) common, national-level, long-term strategic aims must be established, and local level plans, such as a curriculum and an equity plan, must be prepared and implemented; (b) quality work, student assessment, and continuous improvement of learning environments and practices must be implemented at the local level; and (c) professional teachers must be educated to collaborate, engage in broad planning, and assess their own teaching abilities and their students' learning outcomes.

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