



*International Task Force on Teachers for Education 2030*

## **Teacher autonomy and agency in Finland: The role of research-based education, collaboration and supportive policies**

Background paper prepared for the 2024 Global Report on Teachers

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## Abstract

This paper analyses teacher professionalism and the education ecosystem in Finland. Autonomy, agency and professionalism are recognized as essential characteristics of Finnish teachers: for example, having a knowledge base that is both broad and deep supports educators in their use of digital and physical learning environments to teach various content. This breadth of knowledge also allows teachers to assess students' learning outcomes and their own teaching, essential characteristics of teacher professionalism. Professionalism involves having the knowledge, skills and agency for professional learning, quality work and collaboration with colleagues, parents and the community. Teachers develop these skills during the five-year master's-level initial teacher education. Importantly, teacher autonomy, agency, and professionalism are not only characteristics of individual teachers but are also supported by education policy, school-level leadership and the education ecosystem. The history of Finnish education and its role in society, explored in this paper, make teaching attractive to young people in Finland. Teacher education programmes, together with teachers' autonomous role in the education ecosystem, have also made the teaching profession an attractive option, ensuring that there is no teacher shortage in Finland.

## Abbreviations

ECTS	European Credit Transfer System
FNBE	Finnish National Board of Education
GPK	General pedagogical knowledge
ICT	Information and communications technologies
ISC	Innovative School Community
OAJ	Opetusalan Ammattijärjestö (Finnish Trade Union of Education)
OECD	Organisation for Economic Co-operation and Development
PCK	Pedagogical content knowledge
PISA	Programme for International Student Assessment
PLC	Professional learning community
MEC	Ministry of Education and Culture, Finland
SMK	Subject matter (content) knowledge
STEM	Science, technology, engineering and math
SVT	Suomen Virallinen Tilasto (Official Statistics of Finland)
TALIS	Teaching and Learning International Survey

## 1. Introduction

In education policy around the world, the quality of education, and the quality of the teachers or teacher competencies that support high-quality education, are important topics. Teacher quality is often cited in discussions about education policy, teaching standards, student learning outcomes and the intended outcomes of teacher education (Toom et al., 2021), and many countries are trying to train ‘quality teachers’ and then to support or control their work through quality assurance processes, professional development programmes and professional learning. However, there are different interpretations of teacher quality. The terms used to describe a ‘quality teacher’ vary: labels range from ‘professional’, ‘effective’, ‘competent’ and ‘expert’ to ‘ideal’ and ‘respected’ (Goe et al., 2008; Stronge and Hindman, 2003). In line with this variation, different systems take different approaches to quality assurance in education. Most countries aim to recognize ‘effective’ teachers through the use of control-type approaches in quality assurance (that is, quality control), such as inspecting schools and teachers, evaluating teachers through external appraisal procedures and assessing students’ learning through standardized tests (Hattie, 2009). But this type of external control in education can make teachers’ lives competitive and stressful, and can contribute to making the teaching profession unattractive. This paper will show that Finland, by contrast, has adopted internal processes to support education and teacher quality that enhance teacher autonomy and agency and improve the attractiveness of the profession (Niemi and Lavonen, 2012).

In Finland, the term ‘professional teacher’ is used in discussions about educational quality. The definition of a ‘professional teacher’ depends on the education environment or ecosystem, including the degree to which the education ecosystem, education policy and its implementation allow teachers to act professionally. The education ecosystem refers to the connections and collaboration between different stakeholders, education leaders, teachers and parents involved in supporting various learners in their learning and well-being (Low, 2023).

A professional teacher should have a versatile knowledge base, allowing the teacher to act as an autonomous professional, playing an active role in planning, implementing and assessing their own teaching and their students’ learning (Freeman and Johnson, 1998; Hargreaves and Goodson, 1996). These teacher-led processes constitute a key element of internal quality assurance in the Finnish education system. As well as possessing a professional knowledge base, a professional teacher also exhibits professional agency and ideology. Professional teacher agency refers to teachers’ competences and willingness to find solutions, as well as their ability to take ownership of their teaching and professional learning and contribute to quality processes and the development of schools (Toom et al., 2021). Professional ideology means a shared understanding of professional values and ethics, and the institutionalization of an occupational group (Evans, 2008; Evetts, 2012).

The knowledge base of a professional teacher is described in national or state-level documents, often called teacher education standards or strategies. These documents describe, at the state level, the competencies and values of a professional teacher – what a teacher should know and be able to do in a specific education ecosystem (Révai, 2018; Torrance and Forde, 2017), or the expected outcomes of teacher education in that ecosystem (Tellez, 2003). The outcome view also relates to the assessment of a graduating student’s competencies or of teachers’ teaching. In the Finnish education ecosystem, teacher standards are not used, and so teachers are not assessed against them. However, the country has a teacher education strategy that outlines teacher competencies across various domains of the profession (Lavonen et al., 2020). School-level processes for teacher assessment in Finland are covered in section 2 of this paper, and teacher qualification criteria are discussed in section 4.

The aim of this paper is to introduce, first, the history of Finnish education and the ecosystem within which teachers work; second, national-level planning of teacher education; and third, teacher education approaches and programmes at universities. The paper highlights the importance of internal quality processes in Finland, including local-level leadership and teachers' roles in preparing local curricula and assessing their own teaching and learning. Overall, this paper shows how these internal quality processes make the teaching profession more attractive. The preconditions for the organization of these internal quality processes are: teacher education in master's-level programmes at research universities; a common understanding of core educational aims; and a culture of collaboration.

There are also cultural and historical reasons for the attractiveness of the teaching profession: Finnish teachers have long been regarded as autonomous professionals, who possess agency, can influence their own teaching and school operations, have flexibility in how these operations are conducted, and, moreover, are viewed as professionals capable of acting according to their own aims. The characteristics of the Finnish education ecosystem contribute to the profession's attractiveness in the country, as evidenced in responses to a survey of general upper secondary school students ( $n = 6310$ ) (Heikkinen et al., 2020). Students' perceptions of teacher education were positive, because it was perceived as being of high quality and providing good competencies. Another important reason for the attractiveness of teacher education is the significance of education and of teachers' work for society.

## 2. The Finnish education ecosystem and teachers' work within this ecosystem

During the seventeenth and eighteenth centuries, the church was responsible for education in Finland. Literacy has always been a key part of Lutheranism, the most widespread religion in the country, since the religion holds that citizens should be able to read the Bible in their native language. Bishop Mikael Agricola translated the New Testament to Finnish in 1548, and the church started to build literacy among the population. Literacy rates were already over 50 per cent in the late eighteenth century. Official statistics are available beginning in 1880, when literacy was 97.6 per cent. The law regulating elementary school was enacted in 1866, and the state took over the education system, including teachers' education. Attendance at primary schooling reached 50 per cent in 1911 and became mandatory in 1921, when all municipalities were obliged to provide schooling. Free school lunches became mandatory in 1948. The common comprehensive school (grades 1 – 9) was established in 1972. Compulsory education was expanded in 2020 to cover grades 1 through 12, instead of grades 1 through 9 (Aho et al., 2006; Antikainen, 2006).

The Finnish education context is characterized by the decentralization and autonomy of municipalities, schools and teachers (Niemi, 2015). Autonomous teachers play an important role in the Finnish educational system. They are active participants in the design of local curricula as well as of physical and digital learning environments and lessons. Additionally, they assess both their own teaching and students' learning outcomes and are active in local-level quality work. Darlington-Hammond (2017) has analysed Finnish teachers' autonomous role in planning, assessment, quality assurance and professional learning. She states that this role is possible because teachers are well educated at traditional universities through five-year master's-level programmes, and share common aims and a common understanding of educational purposes. Moreover, their professional identity includes the competence and willingness to take on this role.

Decentralization and autonomy at the municipality level mean that local providers of education, typically municipalities, collect community charges and allocate resources for the education sector, including teachers' salaries, learning materials and school infrastructure maintenance budgets. In addition to the community charge, the State supports the education sector in line with each municipality's financial

situation, while ensuring that inequalities in municipal revenues – and thus in education financing – are effectively addressed. Education providers are responsible for recruiting teachers and supporting them in their work and professional learning activities. Recruiting and selection procedures are similar in different municipalities. An open teacher vacancy is advertised in the newspapers, and applicants must prepare a CV and portfolio. Typically, the principal selects the top applicants for an interview, which is conducted by the principal and a school teacher. The principal proposes to the school board or to the municipality-level education committee one candidate for the position, based on their competence, qualifications and interviews, and the committee makes the final decision. Consequently, decentralization offers flexibility in decision-making and makes it possible to consider the local education context, networks and collaboration. This decentralization, together with teachers' autonomous role in curriculum design and assessment, is an important factor in the attractiveness of the profession in Finland (Heikkinen et al., 2020).

Educational equality and equity have been important values and aims at all levels of Finnish education since the 1970s. There are only a few private schools; children and adolescents typically attend a nearby publicly funded school. The private schools that do exist follow the national curricula and do not charge tuition – they are financed by the municipalities or by the government. The Association of Independent (private) Schools<sup>1</sup> in Finland has 56 member schools, including Christian schools, language schools, special pedagogic schools and upper secondary schools for adults. Altogether, 22,000 pupils attend private schools: 2 per cent of Finnish pupils in basic education and 10 per cent of students in upper secondary education.

Special needs education in Finland seeks to integrate and support the learning of all learners in the same inclusive classrooms. Primary and secondary teachers are responsible for monitoring learners' individual needs and preparing a pedagogical plan when enhanced or intensified support is needed. Decisions on the type and level of support needed, such as whether a student should be integrated into an ordinary class or should participate part-time in a small group of students, are based on pedagogical documents (Finland, Finnish National Board of Education [FNBE], 2016). As equality is a core value in Finnish education, special needs education, inclusive education and multicultural education have always been a focus in local and state-level professional learning activities (Niemi et al., 2018a).

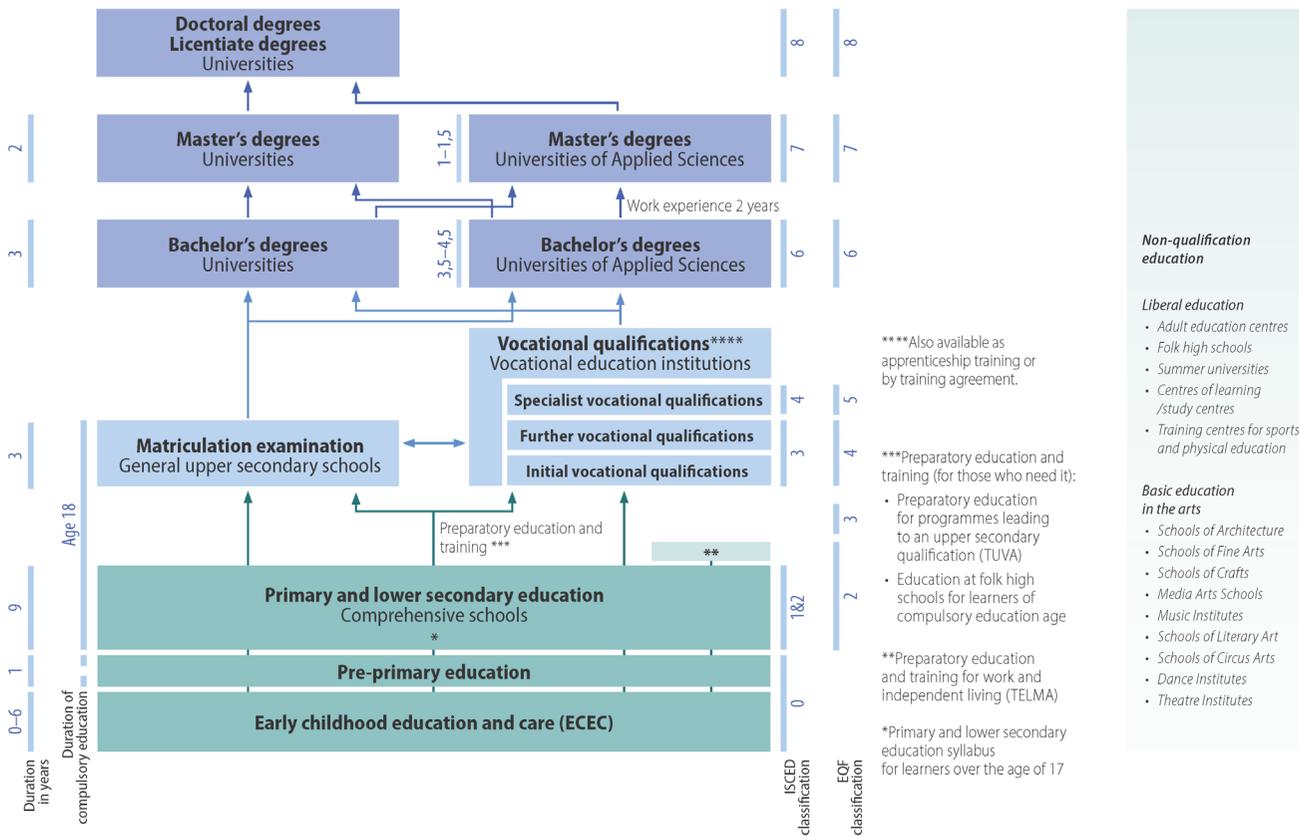
Finnish 12-year compulsory education is organized in primary and lower secondary schools. After that, students can continue either in academically oriented upper secondary or in vocational school, as shown in figure 1. In 2019, there were 2,189 primary schools, with a total of 545,300 students; 63 special primary schools, with 3,600 pupils; 335 upper secondary schools, with 111,300 students; and 84 vocational schools, with 194,500 students (Finland, Suomen Virallinen Tilasto [SVT], 2020). According to Saari and Attila (2020), in the same year, there were 26,700 primary teachers (grades 1–6), 22,300 secondary teachers (grades 7–12), 13,200 vocational teachers and 8,000 special needs teachers. The latest data on teachers and principals in Finland show that, in 2016, on average, 98 per cent of principals and primary and upper secondary teachers were fully qualified (Haaga-Helia, 2026; Kumpulainen, 2017).

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<sup>1</sup> More information available on the Association of Independent Schools in Finland's website (in Finnish): <https://www.yksityiskoulut.fi/>.

Figure 1. The education system in Finland

## EDUCATION SYSTEM IN FINLAND



Source: Finland, MEC (n.d.)

The Finnish Trade Union of Education (Opetusalan Ammattijärjestö, OAJ) represents all early childhood, primary, secondary and vocational teachers, and according to their data, about 90 per cent of teachers are members of the union.<sup>2</sup> The OAJ conducts negotiations at the national level with each employer group on employment conditions for all teachers, including salaries and working hours, and formulates universally binding, separate employment contracts. Separate employment contracts refer to collective agreements negotiated by OAJ with different employer groups, such as municipalities, private schools or the state. Each agreement is ‘separate’ because it applies specifically to one employer group, but once signed, it is universally binding for all teachers working under that employer group. On average, the annual salary of a Finnish teacher was €45,969 in 2023 (Economic Research Institute, 2023). However, teachers’ salaries vary depending on the level of education they teach, their qualifications and their years of experience (OECD, 2025).

### Role of education leadership in Finnish schools

School principals in Finland are qualified teachers. In addition to their teacher qualification, they need to pass an examination in legislation and obtain experience working as a deputy principal. Educational leadership in Finnish schools has been described as collaborative, distributed, pedagogical and systemic (Hopkins et al., 2008; Korhonen et al., 2014; Lahtero et al., 2017). Pedagogical leadership focuses on developing social and academic capital for students, along with intellectual and professional capital for teachers. The Finnish National Agency for Education, the Finnish Education Employers and the Association of Finnish Local and Regional Authorities (2020) collected principals’ views on educational leadership at schools. Principals emphasized that in their day-to-day work, they promote activities in line with the school strategy, the development of school operations, curriculum and learning environments and the learning and well-being of teachers and students. In practice, the school principal and teachers prepare the school-level curriculum and the annual working plan collaboratively, and then analyse the progress and operations of the school through student and parent feedback. Typically, teachers’ meetings are pre-scheduled per semester, approximately every second week, with 100 hours per year dedicated to teachers’ co-planning. In-person parent meetings take place every semester, and an online platform, Wilma,<sup>3</sup> has been created to facilitate school–family collaboration. Consequently, the school principal’s pedagogical leadership supports teachers in collaboration, classroom operations, curriculum development, learning environments, assessment and quality assurance. However, this pedagogical leadership does not work if teachers are not actively participating in school-level operations or are not given the ability and resources to influence their own work and to intentionally collaborate with other teachers. Education leadership in Finland plays a key role in establishing a school’s operations and professional culture.

Hargreaves et al. (2007) describe systemic leadership as one approach used in Finland for systemic school reforms and improvements, and the preparation of the local-level curriculum is one example of this systemic leadership. Systemic leadership is a characteristic of a decentralized education ecosystem, in which Finnish municipalities are responsible for allocating resources to the education sector, including setting the number and size of the schools in the municipality, and for improving the sector. Systemic leadership aims to improve schooling for local children and adolescents while emphasizing that principals are not only responsible for their own schools, but also for their districts, ensuring shared leadership, supervision, quality, evaluation and development of education planning and practices for

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<sup>2</sup> More information available on the OAJ’s website (in Finnish): <https://www.oaj.fi/jasenyyt/>.

<sup>3</sup> Available in Finnish at: <https://www.visma.fi/inschool/wilma/>.

quality assurance processes.

Finland has never based its quality assurance on standardized testing, unlike countries following an outcome-based education model, nor has Finland used school inspectors since the early 1990s. The quality of education has been advanced through a decentralized approach. However, national-level quality processes do exist. They include the preparation of national-level guideline-type strategic documents, such as framework curricula, in broad-based collaboration with stakeholders from across the education system and society, including unions and employee organizations. Other national-level quality processes are ‘monitoring’ and ‘audits’, conducted by the Finnish Education Evaluation Centre, which is responsible for nationwide enhancement-led evaluations. In a monitoring process, students’ learning outcomes are measured based on representative samples. Monitoring outcomes are communicated to education policymakers and teachers. An audit aims to evaluate quality practices – rather than ‘quality’ as such – in a specific education sector, for example, through a national evaluation of lower secondary school quality practices. Although these national-level quality assurance processes are important, the most important quality work is done at the local level (Niemi and Lavonen, 2012).

Education quality at the local level is ensured through collaborative preparation of local curricula and the assessment of teaching and students’ learning outcomes. The school principal is responsible for leading school-level quality processes. The preparation of local curricula has inspired and empowered teachers and principals to improve their own work processes and enhance the quality of education (Holappa, 2007). Preparing the curriculum locally enables teachers to internalize the aims of the curriculum and orient their teaching planning towards achieving these aims. Teachers are also responsible for the assessment of teaching and students’ learning outcomes. However, school principals support teachers in their assessment of teaching through annual performance discussions. The Finnish National Agency for Education provides guidelines<sup>4</sup> for these performance discussions, but the details are typically agreed upon at the local level. Therefore, control through testing or inspecting is not needed in the Finnish education ecosystem (Hudson et al., 2020).

The fact that teachers play an autonomous role has the potential to make educational leadership challenging. Therefore, trust has been recognized as an important characteristic of Finnish education leadership, supporting teacher autonomy (Aho et al., 2006). In this culture of trust, teachers themselves are seen as playing an important leadership role, which is enabled by teachers’ master’s-level education (Niemi et al., 2012).

### **Teachers as co-designers of the local curriculum**

In the Finnish framework type of national-level curricula, there are no traditional syllabuses, and detailed description of learning outcomes are not provided; instead, the core elements are values, aims and objectives. The lower secondary level framework curriculum includes rubrics that help teachers grade students at the end of lower secondary school. The Finnish National Agency for Education is responsible for preparing the national core curricula. The municipalities, as the local education providers, are responsible for preparing local curricula, together with principals and teachers at the local level. Systemic leadership is needed locally to consider local-level needs and constraints. Parents’ voices are taken into account, for example, in decisions about school language programmes. The latest curricula reforms strengthened aims for learning transversal competences (Finland, FNBE, 2016).

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<sup>4</sup> More information available on the Finnish National Agency for Education’s website (in Finnish): <http://www02.oph.fi/asiakkaat/itsearviointi/suomi/opetus/keskuste.html>.

Local curriculum processes have inspired and empowered teachers and principals to develop the local curriculum, to improve their own work processes, and in so doing, to increase the overall quality of education (Holappa, 2007). According to the Programme for International Student Assessment (PISA) 2012 School Questionnaire (OECD, 2013), 62 per cent of participating schools in Finland reported that teachers were the main actors in local curriculum policy – which entails much more than merely planning one’s own teaching. Corresponding percentages among peer systems were 48 per cent in Singapore, 47 per cent in Canada, 44 per cent in the United States and 28 per cent in Shanghai. This local-level curriculum plays a central role in school development and in supporting teachers’ agency through this development. However, negative issues related to local-level curricula include the variation in emphasis on different national-level curriculum aims, as well as a variation among students’ grades, indicating inconsistent performance across schools. This variation is evident when students from different lower secondary schools begin upper secondary education (Puukko et al., 2020).

### **Teachers are responsible for student assessments**

Finland has had a long-standing policy of teacher-conducted student assessment, which supports teachers’ agency in modifying their classroom practices. The focus on internal assessment is seen in the PISA 2012 School Questionnaire (OECD, 2013): 70 per cent of Finnish teachers felt that they were key actors in student assessment, as compared to 58 per cent in Canada, 49 per cent in Singapore, 40 per cent in the United States and 33 per cent in Shanghai. Teachers’ autonomous role influences how assessment is integrated into teaching and learning in Finnish classrooms. Teacher-conducted assessments serve to improve teaching and learning inside the classroom, rather than producing school rankings or ensuring adherence to a standardized syllabus. Teachers also use formative assessment methods to support learners in the classroom. Through assessment, the teacher guides students in becoming aware of their thinking and actions and helps them understand what they are learning.

Negative issues related to classroom-based assessment include the challenge of assessing validity and grading, and therefore the impact on student selection for upper secondary school. In August 2021, rubrics were introduced into the framework curriculum with the aim of increasing validity, but no evidence is yet available on how they are guiding teachers in their assessment and grading.

### **Teachers’ role in out-of-school learning, networks and partnerships**

Teachers’ work is not limited to classrooms and schools; they also work in networks and with many societal partners. According to the National Core Curriculum (Finland, FNBE, 2016), learning environments should reflect that children are living in a complex and globalized world filled with and modified by different digital tools (information and communications technologies or ICTs), media services and games. The National Core Curriculum emphasizes the competencies that enable students to grow as active members of society. It also stresses that students should be guided and encouraged towards the independent and critical search for and use of information. Teacher networks are important for teachers’ professional development towards helping students achieve these aims, as this paper demonstrates (see section 4).

The teaching profession in Finland has always enjoyed great public trust, respect and appreciation (Simola, 2005), as evidenced in data from the PISA 2012 School Questionnaire (OECD, 2013). According to these data, only 4 per cent of Finnish teachers reported constant pressure from parents, as compared to 60 per cent in Singapore, 35 per cent in the United States, 32 per cent in Canada and 20 per cent in Shanghai. This means that Finnish teachers are trusted, and this trust supports them in building and maintaining their network and partnerships.

### 3. Design of national-level aims for teacher education

In Finland, the development of teacher education at the national level follows the same kinds of participatory practices as the development of curricula at other levels of the education system. The main difference is that universities organizing initial teacher education have great autonomy. There are no national teacher education curricula or standards, nor is there standardized accreditation. However, the Ministry of Education and Culture (MEC) and Finnish universities work together in preparing national teacher education strategies.

#### Recognizing the challenges within and the aims for teacher education

To identify challenges and advances in teacher education, in February 2016, the MEC appointed a Finnish Teacher Education Forum (Finland, MEC, 2016) involving 70 experts from universities, national-level administrative offices and partner organizations for teacher education, such as the Association of Finnish Local and Regional Authorities and the OAJ. The forum was asked to collaboratively design a Development Programme or a Strategy for Teachers' Pre-, Introductory and In-Service Education. A collaborative approach was selected to influence the design and implementation of the Development Programme, as Maier and Schmidt (2015) and Burns and Köster (2016) have suggested. Collaboration, it was assumed, would increase ownership of the strategy and support agency in the implementation of the strategy, as Madalińska-Michalak et al. (2018) have emphasized.

The forum studied research outcomes related to teacher education (Lavonen et al., 2020). Challenges in the Finnish education ecosystem relevant to teacher education were discussed at both national and regional meetings of the teacher education forum. A preliminary identification of challenges was based on the OECD PISA and Teaching and Learning International Survey (TALIS) surveys (OECD, 2019; OECD, 2020), as well as national-level monitoring reports produced by the Finnish Education Evaluation Centre, Karvi (e.g., Blömeke et al., 2018). The challenges in Finnish education with regard to teacher education were summarized in the meetings of the executive committee at different levels:

- Challenges influencing teacher education that stem from the school environment:
  - Student-level challenges, such as a decrease in students' learning outcomes; an increase in the variation of learning outcomes; and differing needs among individual learners
  - Classroom-level challenges, such as those related to guiding students in active and collaborative learning processes in heterogeneous and multicultural classrooms and supporting students in learning twenty-first century competencies according to new curricula
  - School- and city-level challenges, such as a lack of collaboration among teachers; lack of quality work at the local level; inadequate pedagogical leadership support for teachers' professional learning; an increase in administrative tasks assigned by principals; lack of commitment from school leadership to supporting teachers' professional learning; and low coherence between school development plans and teachers' personal development plans
  - Challenges in teachers' agency and pedagogical competence, such as teachers' job satisfaction; stress experienced by teachers and principals; lack of transformative agency and innovative orientation; and lack of willingness and competence for professional learning

- Challenges in teacher education, including lack of mentoring and fragmentation between professional development and learning
- Society-level challenges, such as the number of young people dropping out of education or the labour market; an increase in inequality; and the influence of digitalization, including artificial intelligence and automation, on the education sector (Lavonen et al., 2020).

A review of the literature on teachers and teacher education (Husu and Toom, 2016) highlighted several issues that were discussed at the forum meetings and considered during the design of the Development Programme. These issues included research outcomes related to the role of education in society; the challenges of teaching learners with different needs; the design and use of educational innovations, such as educational technology in teaching and learning; and, finally, the impact of research on teachers and teacher education on the design of the Development Programme. The review shed light on several models for categorizing teacher knowledge and competencies. For instance, it revealed that in addition to the various domains of teacher knowledge, student teachers should be willing and able to learn new competencies. Moreover, teachers may not have learned inclusive education and co-teaching competencies in pre-service education, and therefore these competencies should be included in in-service professional development (Beijaard et al., 2007; Korthagen, 2016, 2017).

### **National brainstorming**

In order to gather views from a broad range of teacher educators and stakeholders, the forum organized a national web-based brainstorming process. The aim was to capture the perspectives of teacher educators, teachers and stakeholders on what they considered important in teacher education. A call to participate in the brainstorming process was sent to teacher educators in all Finnish universities as well as to all teachers and administrative employees working in the field of education, at national and local levels, in order to decentralize the process and enable all stakeholders to participate in the reform process (Cochran-Smith et al., 2018).

Participants were guided in generating ideas for developing teacher education and were asked to evaluate or rank the ideas contributed by others. The results showed that the most important student priorities for teacher education are learning-to-learn skills, along with interaction and collaboration skills. Moreover, teachers need agency to generate ideas, engage in change- and research-based action and collaborate in the development of classroom practices and culture.

### **National aims for teacher education**

Between autumn 2016 and spring 2019, the Finnish Teacher Education Forum organized 12 nationwide meetings, 7 local meetings and several thematic group meetings. During 2016, these meetings facilitated the drafting of the Development Programme for Teachers' Pre-, Introductory and In-Service Education, while supporting collaborative efforts to meet the challenges and aims of teacher education (Lavonen et al., 2020; Finland, MEC, 2016).

The forum specified three strategic competences for teachers' pre- and in-service education and their continuous professional learning. Although these aims do not cover everything, they do guide the development of teacher education. According to the Development Programme, a professional teacher should have:

- A broad and solid knowledge base about the relevant subject matter and pedagogy, including knowledge on collaboration, interaction, digital and research skills, schools' societal and business connections and ethical codes, as well as on how to engage learners with different needs
- The willingness and competencies required for professional learning; for developing the schools' operations and environments, especially the school culture and versatile learning environments; and for using the digital tools needed for maintaining and creating different networks and partnerships with students, parents and other stakeholders
- Transformative agency competences to generate novel ideas and educational innovations for the local curriculum; to use these ideas to plan inclusive education; and to implement these pedagogical innovations.

The competencies outlined as key to a teacher's knowledge base include those needed to address the diverse needs of individual learners, as well as those required to guide students in active, collaborative learning processes within heterogeneous, multicultural classrooms. The aims related to the development of the professional community imply that teachers need better collaboration and pedagogical leadership competencies. Finally, the aim of generating novel ideas and educational innovations is to solve problems or overcome challenges at the local level. Creativity is key, for example, in designing versatile, inclusive digital and physical learning environments. The research orientation in teacher education has allowed Finnish teachers to develop the competencies needed for professional learning, planning the local curriculum and assessing activities.

A comparison of the Finnish Teacher Education Development Programme with teacher standards from other countries, such as Australia and the United Kingdom, reveals that they are similar in emphasizing quality teaching and learning (Australia, Australian Institute for Teaching and School Leadership, 2014; United Kingdom, Department for Education, 2011). In line with other countries' standards, the Finnish Development Programme prioritizes academic orientation and research competence as important for teachers, influencing their professional learning and engagement with teacher education stakeholders. The Development Programme also focuses on teachers' transformative role in generating novel solutions for classroom teaching, aligning with the day-to-day activities of Finnish teachers.

In addition to the three strategic competence aims, the Development Programme included six concrete strategic recommendations that guided the development of teacher education at universities as well as 45 research-oriented pilot projects implemented in two phases between 2017–2019 and 2019–2021 (Lavonen et al., 2021). The strategic recommendations focused on the development of admissions to teacher education; teacher education pedagogy (especially in the development of teacher agency); leadership education; collaboration in teacher education; and research orientation in teacher education.

### **Implementing national teacher education aims through the development projects**

The national Development Programme for Teachers' Pre-, Introductory and In-Service Education (Finland, MEC, 2016) was implemented through research-oriented pilot projects, national seminars and workshops and local and regional meetings. The approach was very similar to the implementation of the National Core Curriculum (Finland, FNBE, 2016). In all, 31 collaborative and networking pilot projects were financed during 2017–2019 and 14 during 2019–2021. The call for proposals for pilot projects emphasized the aims and recommendations introduced in the Development Programme. It also highlighted the collaboration between pre- and in-service teacher education, collaboration with universities and schools and the research-based orientation of the projects (Lavonen et al., 2021).

All universities participated in several pilot projects, and each coordinated at least one. The pilot projects involved networking with municipalities, and 129 municipalities participated as partners. Municipalities' participation was important because they are responsible for teachers' professional learning. In total, 26 pilot projects developed new models for teacher education, while 24 projects developed teaching and supervision in teacher education. Other focus areas included digital learning and new learning environments (19 projects); developing supervised teaching practice (15); multi-professional collaboration (14); developing leadership and school networks (12); multilingual learning and multicultural classrooms (10); equality and gender-sensitive education (8); and developing special needs education (6) (Lavonen et al., 2021).

To monitor the progress of the pilot projects, a self-evaluation questionnaire was distributed to the project directors. They were asked to identify the focus areas for their pilot projects and evaluate their activities. Directors highlighted the importance of collaboration among teacher educators and the implementation of new ideas in the Development Programme and activities (Lavonen et al., 2021).

The Finnish Education Evaluation Centre evaluated the implementation of the Development Programme for Teachers' Pre-, Introductory and In-Service Education by analysing the pilot project documents, surveying the projects and interviewing stakeholders and project experts. The centre found that the teacher education reform model developed by the Teacher Education Forum had several strengths, including networking and bringing together diverse experts and stakeholders. Networking was vital to implementing all strategic competencies, including the twenty-first-century competencies highlighted as needing attention. Most pilot projects were recognized to have a strong emphasis on community-building and collaboration. The evaluation report noted challenges and future implementation targets, including the need to create a clear plan to support the achievement of the strategic competencies. It also called for monitoring the effectiveness of the pilot projects during and after their completion in 2023–2024 (Niemi et al., 2018b).

### **Developing teacher education at the university level**

Universities in Finland have autonomy, but they use national recommendations and strategies to enhance quality. Teacher education at Finnish universities is developed as a part of quality work at the faculty and programme levels. The participatory approach is important at the institutional level as well as at the national level. Collaboration among different actors, including student teachers and staff members from various departments who supervise teaching practice, is an important feature of the programme's continuous development. For example, the actors responsible for the development of pedagogical studies in the mathematics, physics and chemistry teacher education programme are representatives from the three subject departments; the Department of Teacher Education; University Teacher Training Schools and Municipality Schools; and representatives of student teachers. Typically, 40 partners hold 2 meetings during the academic year. The collaboration focuses on ensuring a shared vision for the study programme, evaluating the programme based on student feedback, maintaining continuous development and conducting research on secondary teacher education. The development of the programme is guided by national- and university-level strategies, by research findings on teacher education and by students' and stakeholders' evaluations of the programme (Niemi and Lavonen, 2012).

## **4. Teacher education in Finland**

Teachers in Finnish primary, lower and upper secondary schools are required to have a master's degree. Kindergarten teachers and teachers in vocational secondary-level education must have at least a bachelor's degree and, when teaching in universities of applied sciences, a master's degree. The

requirement that primary teachers (grades 1–6) be educated in master’s-level programmes in 8 traditional universities has been in place for more than 45 years, while secondary teachers (grades 7–12) have been trained in master’s-level programmes for more than 100 years (Niemi et al., 2012). Teacher education is a popular university degree programme. For example, at the University of Helsinki, only 5 to 10 per cent of applicants are accepted into the primary teacher education programme (Lavonen, 2018).

### Pre-service teacher education

Finnish teacher education programmes follow three important principles, in line with the ideas of Verloop et al. (2001). The first relates to the values behind the programme and the attitudes that student teachers should learn from it. The second concerns the domains of knowledge, skills and competencies that student teachers should learn (Niemi and Lavonen, 2020). The third involves an emphasis on engagement in professional learning and collaborative development of the school context.

In more detail, the knowledge base of a Finnish teacher can be outlined in the context of Shulman’s (1987) model of teacher knowledge. The author provides a classical framework for analysing the domains of knowledge, skills and competencies a teacher needs to teach. However, a teacher’s work is complex, and in certain situations several types of knowledge may be required. Shulman’s model divides teacher knowledge into:

- Subject matter (content) knowledge (SMK)
- Pedagogical content knowledge (PCK)
- General pedagogical knowledge (GPK).

In addition to these three main areas of knowledge, a teacher needs knowledge in several other domains, such as contextual knowledge (about their students and about the learning environments available) and curriculum knowledge.

SMK includes conceptual, factual and procedural knowledge in a specific discipline, such as mathematics. PCK is the synthesis of the knowledge needed to teach a certain topic. It includes, for example: 1) instructional strategies or teaching methods, assessment strategies and collaboration strategies; 2) student motivation to learn conceptual and procedural knowledge and skills; and 3) learners’ (mis)conceptions, experiences and thinking skills, as well as the cognitive and affective demands of tasks. GPK includes, for example: 1) classroom management and organization; 2) instructional models and strategies; and 3) classroom communication and discourse (Lavonen, 2021; Niemi et al., 2012).

All these types of knowledge are included in Finnish teacher education programmes, and are integrated and implemented in the programmes’ learning situations and environments. However, in their initial teacher education, Finnish teachers are instructed in several other important areas of teacher knowledge, which are not emphasized in Shulman’s model. These include knowledge and skills needed in networking, research, partnerships and professional learning, and agency in the design of local solutions to education challenges, such as co-creating and implementing local curricula and ensuring inclusive education (Niemi and Lavonen, 2020).

Another view of teacher knowledge relates to the origins of knowledge – that is, the learning and interaction situations and sources in which student teachers encounter and use information, knowledge, skills and competencies. In line with Beijaard et al. (2007), Finnish student teachers acquire their knowledge in various situations, including through participation in teaching practice, lectures and

workshops, reading academic literature and school textbooks, and conducting an independent research project. Throughout the period of teaching practice, students learn through planning, teaching, reflection and discussion sessions with peers and mentors to develop the agency needed in various planning situations (Lavonen et al., 2023).

Moreover, the pedagogy used in teacher education courses supports student teachers to develop their professional agency. For example, Matikainen et al. (2018) studied how well teacher education practices in Finland are able to respond to the changing needs of the contemporary world and support student teachers in learning to view the teaching profession through a transformational agency lens. The results showed that applying critical social pedagogy models supports students in developing critical self-reflection, strengthening their sense of agency and gaining insight into how groups function and influence learning. Various social pedagogy models are widely used in Finnish teacher education. In another study, conducted in three universities, Toom et al. (2017) recognized that student teachers' professional agency consists of motivation to learn, efficacy beliefs of learning and intentional strategies for promoting school development and student learning. The characteristics of the learning environment, social support and the equality climate support the development of professional agency.

## Teacher qualification

Figure 2 presents the minimum qualifications required for Finnish teachers in pre-primary, basic and upper secondary education (Paronen and Lappi, 2018).

Figure 2. Teachers’ minimum qualification requirements in pre-primary, basic and upper secondary education

Pre-primary education 6 years old	Primary education Grades 1–6	Lower secondary education Grades 7–9	Upper secondary education Grades 10–12
Kindergarten Teacher Bachelor’s degree in educational sciences	Primary Teacher Master’s degree in educational sciences  - <b>Pedagogical studies</b> - Major in educational sciences - Subsidiary subject studies - Minor subject studies	Secondary Teacher Master’s degree in a subject  - <b>Pedagogical studies</b> - Major in a subject	Secondary Teacher Master’s degree in a subject  - <b>Pedagogical studies</b> - Major in a subject - Minor subject studies

Source: Adapted from Paronen and Lappi (2018).

Teacher qualification is based on appropriate subject matter studies and one year (60 credits in the European Credit Transfer System, ECTS) of pedagogical studies. Educational sciences can be considered as advanced-level subject matter studies in primary teacher education. During their pedagogical studies, the student teachers learn to:

- Integrate SMK, PCK, GPK, contextual and curriculum knowledge to build up their own personal pedagogical theory (how to teach and support learning)
- Become aware of research orientation in teaching and learning, as well as the different dimensions of the teacher profession, such as the psychological, sociological and philosophical bases of education
- Collaborate in different networks and partnerships
- Reflect on their own personal pedagogical theory (reflection for, in and on action)
- Act as an autonomous professional in planning, implementing and assessing teaching and learning
- Develop their potential for professional learning (Lavonen, 2021; Niemi et al., 2012).

An additional qualification criterion for a primary teacher is one year (60 ECTS) of multidisciplinary studies, including subject matter and PCK studies of primary school subjects. Additional qualification

criteria for a secondary teacher are two years (120–140 ECTS) of advanced studies in the first teaching subject and one year (60 ECTS) of studies in the second teaching subject.

### **Research orientation and supervised teaching practice**

Teacher education in Finland has a strong emphasis on research (Eklund, 2018; Tirri, 2014). This orientation supports teachers in local planning and assessment processes while also emphasizing the organization of inclusive classrooms. Moreover, this research orientation helps student teachers to develop their professional teacher identity and agency in their work (Niemi, 2015; Toom et al., 2017). As a part of this identity, they are also competent and willing to engage in professional learning and participate in various school-level development projects. As a result, the occupation of teaching presents a significant paradigm shift, deemed a ‘profession’ because of the autonomy, decision-making power and long academic education associated with the career.

Through the research orientation, student teachers learn how to both consume and produce educational and other appropriate knowledge. Students consume knowledge based on educational research when they combine theory and experience or interpret situations during their teaching. Students acquire the capacity to produce educational knowledge during their courses in research methodology and through conducting their educational research projects, bachelor’s and/or master’s dissertations. The knowledge and skills they acquire through these thesis projects support professional learning in their teaching positions (Eklund, 2018; Tirri, 2014).

Another important characteristic of teacher education is supervised teaching practice (practicum or field experience). Altogether, 20–30 ECTS are allocated to teaching practice, depending on the university. All universities active in teacher education have teacher training schools, and at least half of the teaching practice is organized in these schools. Teacher training schools are specialized to support student teachers’ learning through practice. Teaching practice is divided into different phases, as follows:

- The orientation phase allows student teachers to observe and analyse students in the school setting from a teacher’s perspective, after having been a student for most of their lives
- The second phase is an intermediate practice in which student teachers start to plan lessons and take on teachers’ responsibilities in the classroom, which allows them to gradually widen their professional work
- The last phase, called advanced practice, is when student teachers deepen and widen their competencies (Niemi and Lavonen, 2020).

An important characteristic of all phases is that the practice is supervised by a trained mentor teacher (Niemi and Lavonen, 2020). Throughout the teaching practice, mentor teachers support student teachers to transform practitioner (practical) knowledge into professional knowledge through reflective activities and guided discussions in small groups. Reflection refers to the process in which an experience is recalled, considered and evaluated in the effort to learn from practical experience. Consequently, mentor teachers support student teachers in actively learning from practice, rather than merely completing it. They support student teachers’ meaning-making process by facilitating goal setting, self-observation, description and analysis of observations and experiences to improve teaching practice. Such reflective skills are essential to professional learning.

Mentor supervision is critical, since trained mentors help students reflect on all aspects of their work as teachers, guiding and supporting them in planning, teaching, reflecting on and working with the knowledge learned during their teacher education courses. During the advanced stages of practice,

student teachers become more independent, and discussions with supervisors are expected to become more in-depth (Lavonen et al., 2023; Loukomies et al., 2022).

One important aim in teaching practice is to emphasize a theory–practice relationship that makes teacher education coherent. Teaching practice and theoretical studies connected to practice serve to prepare student teachers for the classroom, in addition to planning, evaluating and reflecting on teaching. These types of competencies are important in a decentralized education system (Loukomies et al., 2022).

## Primary teacher education programme

The structure of the master's degree (300 ECTS) for primary teachers is quite similar across all Finnish universities. Studies are divided into 180 ECTS bachelor-level studies and 120 ECTS master-level studies. However, the division is quite technical, so the studies are analysed as one block in the following discussion (Niemi et al., 2012; Niemi and Lavonen, 2020).

### Educational sciences – as a major of the degree

- About 70–120 ECTS is allocated for educational sciences, supporting learning on the scientific knowledge base, including understanding the historical, cultural, psychological, sociological, ethical and pedagogical issues behind education, teaching, instruction, learning and assessment.
- Quantitative, qualitative and mixed research methodology studies are included as part of educational science studies. Conducting their own research process improves students' understanding of the relationship between theoretical knowledge and practice and enables them to develop a reflective practitioner–researcher orientation to the everyday work of teaching.

### Multidisciplinary subject studies

- Besides the major in education, multidisciplinary subject studies (60 ECTS) as a first minor subject address the PCK and SMK of all primary school subjects, along with cross-curricular themes to be implemented in various subjects at the primary level (Niemi et al., 2012).
- Multidisciplinary subject studies help student teachers to understand curriculum theory and its relevance to the planning, instruction and evaluation of educational practice.

### Minor subject or specialization studies

- Students select another minor subject (60 ECTS) or a combination of two small minor subjects. If the student takes a minor subject (60 ECTS) in a school subject, these studies qualify the student to teach the particular subject at the lower secondary level (grades 7–9).

### Pedagogical studies and teaching practice

- Pedagogical studies (60 ECTS) are mandatory for teacher qualification.
- These studies foster a shared understanding of professional values and ethics; develop social and individual elements, such as the strong institutionalization of the occupational group, helping to instil the skills needed for collaboration and networking; and teach skills needed in self-regulation and continuous professional learning.

Kindergarten teacher education has characteristics similar to those of primary teacher education. However, the programme is a three-year bachelor-level programme (180 ECTS). Its studies are focused on early childhood and pre-primary teacher education.

## Secondary teacher education

In the universities responsible for teacher education, secondary teacher education is organized in cooperation between specific subject departments and education faculties (Lavonen, 2018). Consequently, studies are divided into two parts: specific subjects are studied within their own departments (e.g. physics), while pedagogical studies take place within the faculty of education and teacher training schools.

Students enrol in two subjects for their teacher qualification: one major (140–160 ECTS) and one minor (60 ECTS) subject. The faculty of education is responsible for organizing the studies for the required 60 ECTS of pedagogical studies, including teaching practice.

As part of subject-specific courses, student teachers study in undergraduate courses at the subject departments. These courses help develop a deeper understanding of content/subject matter knowledge and concepts within the subject's conceptual framework.

In many subject matter departments, students also study PCK within their master's-level courses. For example, in the physics and chemistry departments at the University of Helsinki, students become familiar with how to introduce a certain concept through a demonstration or through lab activities. The student decides pedagogically on a subject-oriented topic for their master's thesis (30–40 ECTS) and prepares the thesis under the guidance of a professor or within a research group (Lavonen et al., 2007).

## Vocational teacher education

Vocational teacher qualification requires a master's degree (or in some cases a bachelor's degree) completed in a university or in a university of applied sciences, as well as teachers' pedagogical studies (60 ECTS) and a minimum of three or five years of work experience in a field corresponding to the degree (Haaga-Helia, 2026). Vocationally oriented pedagogical studies are organized in five teacher education colleges in Finland, and the aims are similar to the pedagogical studies in primary and secondary teacher education programmes.

In Finland, vocational education has been competence-based and learner-oriented since 2018, when the role of vocational teachers was reshaped (Korpi et al., 2018). Vocational teachers' responsibilities are not confined to classrooms but extend into workplaces where students engage in on-the-job learning. This fragmentation means teachers must balance institutional teaching with workplace collaboration, requiring them to act as both educators and workplace mentors. Tapani and Salonen (2019) argue that vocational teachers should therefore cultivate authentic learning approaches – methods that integrate real work tasks, reflective practice and inquiry into their teaching. Authentic learning ensures that teachers themselves experience development in ways similar to their students, bridging the gap between theory and practice.

## Teachers' professional development and learning

As noted above, education providers, typically municipalities, are responsible for teachers' induction phase, professional development and learning. Each municipality and education provider has its own model to support teachers in their professional learning. Municipalities have, for example, organized short in-service courses for teachers. Teachers must participate in three days per year of formal professional learning. In addition to this mandatory training, 120 hours are allocated during the academic year for co-design, consultations and home-school cooperation (Niemi, 2015).

Each municipality and education provider has its own model for supporting teachers in their induction or early career phase. The national government has also supported the Finnish Network for Teacher Induction, Osaava Verme,<sup>5</sup> for many years (Heikkinen et al., 2018). Osaava Verme is a collaborative network of Finnish teacher education institutions, including the vocational teacher education institutions and teacher education departments of universities. Almost 1,000 mentors have been educated during the past decade.

Teachers' associations organize professional learning for teachers. The Finnish National Agency for Education is responsible for the national-level implementation of educational programmes and strategies (e.g. ICT strategies) and for financing policy-driven professional learning courses for teachers. State funding of €15 million annually is made available to providers of education and organizations that create courses for teachers. According to Kumpulainen (2017) and the Finnish National Agency for Education (2019), Finnish teachers and principals are actively involved in voluntary professional learning; typically, 80 per cent to 91 per cent of various teacher groups engage in voluntary learning every year. The most active were teachers in general upper secondary education, of whom nearly 91 per cent participated. This was given by the increase in state-funded strategic professional learning courses and the competences needed for preparing students for the digitalized matriculation examination test. Progress has also been made on teachers' personal study plans. In 2016, 44 per cent of teachers reported having undertaken individual professional learning and created a development plan to support it (OECD, 2019; OECD, 2020).

In addition to formal courses, teachers' professional learning is supported through various school-, district- and national-level projects and activities. At the school level, teachers in Finland are seen as developers of the school community and school culture (Finland, FNBE, 2016; Finland, MEC, 2018a; Niemi, 2015). The idea of teachers as developers could be interpreted as an activity of a professional learning community (PLC) of teachers. Webb et al. (2009) evaluated Finnish teachers' PLCs through analysing qualitative semi-structured interviews with primary teachers. They found that the following themes affected teachers' work, well-being and professional learning: the school community, collaborative working, long-term professional learning and trust and accountability. In this context, accountability does not mean control, but rather a responsibility to the teachers' own community. Some of the most important school-level projects that support teachers' professional learning include preparing the local curriculum, shaping learning environments and advancing inclusive education. Over the past 30 years, research (Atjonen, 1993; Holappa, 2007) has indicated that local curriculum processes have inspired and empowered teachers and principals to develop the school community and culture, while also supporting teachers' professional learning. Examples of school-level projects that have enhanced teachers' learning are supporting the school community to cross boundaries towards multi-professional cooperation; designing an innovative school community; connecting pre-service and in-service research-based teacher education in science, technology, engineering and math (STEM) teaching; and promoting induction phase learning for new teachers (Niemi, 2015). The concept of the Innovative School Community (ISC) was implemented in several schools in the capital city of Helsinki in 2012–2014 (Korhonen et al., 2014). The ISC is a holistic model of a school environment that supports learning and teaching of skills for the twenty-first century.

In addition to development projects, several teacher networks support teachers' professional learning. These networks are financed either by the Finnish National Agency for Education or by the MEC, and they

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<sup>5</sup> More information available on the Osaava Verme website: <https://osaavaverme.wixsite.com/verme>.

offer professional learning for teachers free of charge. For example, the Innokas Network<sup>6</sup> is a teacher network that encourages schools to organize their own activities to support the learning of twenty-first-century competencies, including digital competencies. Innokas supports schools by organizing training, consulting and events across different parts of Finland. Today, the network comprises over 600 schools across Finland.

Another example of a university-driven project is the nationwide LUMA Centre Finland,<sup>7</sup> which aims to inspire and motivate children and youth to engage in STEM learning through the latest methods and activities in STEM education. All Finnish universities are members of LUMA and organize professional learning for teachers and courses for school students. The LUMA Centre has organized several large projects emphasizing the use of digital tools in education. For example, the six-year LUMA-SUOMI programme (2013–2019) was responsible for increasing the level of mathematics and natural sciences learning outcomes, including creativity, as well as improving student engagement in learning. Both networks were financed by the MEC.

To increase reading levels and the use of diverse sources, such as web pages and digital books, a National Literacy Forum (Finland, MEC, 2018b) was established in 2017. The forum published guidelines for developing children's and young people's literacy and reading skills in the autumn of 2018. Although the forum developed and introduced several activities to support the development of reading skills in classrooms, it did not continue its activities after its seed finance was used up, unlike the LUMA Centre Finland. The LUMA network was established through a bottom-up approach, whereas the National Literacy Forum was created using a top-down approach. The LUMA organizers have actively sought funding from various funding agencies, but the National Literacy Forum used only the seed finance. Some years after LUMA's establishment, the universities took responsibility for the network, which they considered a societal responsibility – but this did not happen with the National Literacy Forum. This shows that a national network may either continue or cease to exist after its initial funding runs out, and its future depends on the organizers' commitment and agency.

### Horizontal and vertical career paths

Horizontal career paths in the Finnish education system enable teachers to move from secondary to primary education and vice versa. Secondary education teachers can include multidisciplinary studies in their master's-level degree or can choose to pursue these studies after the master's-level degree, free of charge, to become a qualified primary teacher. Primary teachers can include one-year (60 ECTS) studies in a teaching subject in their master's-level degree or take these studies afterwards to teach that subject at the lower secondary level. Both primary and secondary teachers can take 60 ECTS courses in special needs education to work as special education teachers.

In addition, a teacher can complete short courses in legislation to attain a qualification as a principal. However, courses in legislation are no longer considered sufficient for effective school leadership, so several national-level initiatives are underway to develop leadership studies (Lavonen et al., 2020). Principals in Finland have always been required to obtain their teaching qualification, which means they are very familiar with classroom-level activities.

There are no other clear vertical career paths. However, teachers can take 60 ECTS courses specializing in more than one field, such as digital teaching and learning environments or education export studies.

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<sup>6</sup> More information available on the Innokas Network website: <https://www.innokas.fi/en/>.

<sup>7</sup> More information available on the LUMA Centre website: <https://www.luma.fi/en/>.

Moreover, there are 20 ECTS courses for mentor teachers mentoring early career teachers. Vocational secondary-level educational institutions are typically large and offer more diverse leadership and developmental roles, thereby providing teachers with more career possibilities.

## **5. Conclusion**

Finnish teachers have long been considered autonomous professionals who have developed the agency to influence both their own teaching and the operations of schools, including school-level quality work, and have the capacity and time to make an impact on those operations. Young people in Finland see teacher education and the teaching profession as attractive. As this paper has discussed, these positive sentiments are influenced by the history and current practices of the Finnish education ecosystem and teachers' work within it, the national-level planning of teacher education, and the teacher education approaches and programmes carried out in universities.

The Finnish education ecosystem is decentralized, meaning teachers, schools, municipalities and universities have a high level of autonomy. For example, teachers are responsible for organizing the assessment of their teaching and students' learning. However, there is a tradition of collaboration, for example, in preparing a local curriculum and agreeing on basic values and strategic aims for school education. The culture of collaboration and decentralization is supported through an emphasis on teachers' professionalism and a culture of collaboration in initial teacher education as well as by school-level education leadership. In this decentralized and collaborative ecosystem, professional teachers should have a versatile professional knowledge base of competencies, including transformative agency, collaboration and finding solutions to school- and classroom-level challenges such as inclusive education (Westbury et al., 2005). Teacher agency, in this context, refers to teachers actively assuming responsibility for the design and enactment of their teaching, the continuous advancement of their own professional learning and the collective development of schools as learning communities (Toom et al., 2012). The characteristics of the Finnish education ecosystem make the teaching profession in Finland attractive, as shown in the survey responses of general upper secondary school students (n = 6310) (Heikkinen et al., 2020). Students' perceptions of teachers' work and its significance for society are another important factor in the attractiveness of teacher education and the teaching profession in Finland.

The most important characteristic making teacher education and the teaching profession attractive for upper secondary students was the high-quality master's-level teacher education (Heikkinen et al., 2020). This master's-level teacher education programme is designed to help Finnish teachers build a comprehensive knowledge base, a foundation that later aids them in planning, organizing and evaluating school operations, building their own teaching practices and shaping the learning processes and outcomes of their students. Consequently, teacher education programmes align with education policy, including curriculum and assessment policies. The way in which research orientation and teaching practice are organized prepares teachers to work as professionals and take responsibility for broad planning and assessment processes. Their studies support student teachers' willingness and readiness for professional learning. Broad planning, quality assurance and assessment practices are also supported by the education leadership in the school context.

To summarize, the teaching profession in Finland is attractive to young people – and as a result, there is no lack of teachers. This is mainly because teachers have been educated in 5-year master's-level programmes at traditional universities over the last 45 years. For this reason, teachers are considered academic professionals, as are other university degree holders. Teachers' role as autonomous professionals and teacher collaboration are supported by school site operations, state-level education

policy and school-level pedagogical leadership. Additionally, teachers can influence national-level education policy and its implementation in schools. Finland has no burdensome teacher evaluation practices, such as school inspectors or the use of standardized test outcomes in teacher evaluation. Teacher performance is evaluated as a part of quality assurance procedures at the municipality and school levels. The evaluation is mainly based on teachers' self-evaluations and on development discussions with the principal. However, there is no official career progression for teachers in Finland.

Preparing and implementing national standards or strategies for teacher education are also tools for improving teacher education in Finland (Torrance and Forde, 2017). To improve teacher education through a national-level strategy, research outcomes related to teacher education strategy in 2010 (Burns and Köster, 2016; Koenraad and van der Hoeft, 2013) were followed in Finland when national aims for teacher education (Lavonen et al., 2020) were designed in 2016. Two government periods were allocated to planning and implementing the standards, providing sufficient time to engage representatives from unions, the ministry and educational institutions in strategy design. During planning, designers sought consensus on the strategy's structure and used sustainable resources for its implementation through funded pilot projects (Lavonen et al., 2020; Lavonen et al., 2021). During preparation, challenges related to teachers and teacher education were recognized at the society, teacher education, school and student levels. The needs of the Finnish society and education ecosystem are changing. Therefore, it is important to continuously analyse the system's weaknesses and advance progress in collaboration with teacher educators and key stakeholders in teacher education, including school leaders, municipality-level stakeholders and teachers themselves.

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