

Education Policy Report of the Finnish Government

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Education Policy Report of the Finnish Government

Publications of the Finnish Government 2021:64**Publisher** Finnish Government**Authors****Editor****Group Author****Language** Finnish**Pages** 98**Abstract**

In its Education Policy Report, the Finnish Government defines guidelines for the advancement of education, training and research to make them match the needs of the country, the people and the international community, while securing sustainable development. The Report presents the target state for education, training and research, which extends to the 2040s. It describes the changes in resources, structures and steering that are now required to respond to and impact on the drivers of change in the operating environment, and also to create the conditions for a meaningful life for everyone. The target state and the measures needed to achieve it are based on an analysis of the current state of education, training and research and the key changes in the operating environment.

The target state encompasses a strong educational foundation, the well-being and educational equality of learners, a high level of education and competence, the organisation of education and research in a socially, economically and ecologically sustainable manner, capitalisation on cooperation and digitalisation, and the internationalisation of education and research.

To achieve this, the Report proposes measures that span from early childhood education and care all the way to higher education and research-based knowledge, liberal adult education, continuous learning, arts and cultural education, basic education in the arts, and student financial aid. The current situation regarding the statutory Swedish-speaking education, the learning of immigrants and that of persons with disabilities, and education in the Saami language is outlined separately, together with the proposed measures for their enhancement.

Keywords early childhood education and care, education and training, research and development, learning**ISBN PDF** 978-952-383-927-4**ISSN PDF** 2490-0966**ISBN printed****ISSN printed****Reference number****Project number** OKM011:00/2020**URN address** <http://urn.fi/URN:ISBN:978-952-383-927-4>

Valtioneuvoston koulutuspoliittinen selonteko

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Koulutuspoliittisessa selonteossa valtioneuvosto antaa linjaukset koulutuksen ja tutkimuksen kehittämiseksi niin, että ne palvelevat Suomea, suomalaisia ja kansainvälistä yhteisöä kestäväen kehityksen turvaten. Selonteossa esitetään kohti 2040-lukua ulottuva koulutuksen ja tutkimuksen tavoitetilä sekä tarvittavat voimavarojen, rakenteiden ja ohjauksen muutokset, joilla vastataan ja vaikutetaan toimintaympäristön muutostekijöihin ja luodaan merkityksellisen elämän edellytykset kaikille. Tavoitetilan ja sen saavuttamiseksi tarvittavien toimenpiteiden perustana on koulutuksen ja tutkimuksen nykytilan sekä keskeisten toimintaympäristön muutosten analyysi.

Tavoitetilana on vahva sivistysperusta, oppijoiden hyvinvointi ja koulutuksellinen tasa-arvo, korkea koulutus- ja osaamistaso, koulutuksen ja tutkimuksen järjestäminen sosiaalisesti, taloudellisesti ja ekologisesti kestäväällä tavalla, yhteistyön ja digitalisaation hyödyntäminen sekä koulutuksen ja tutkimuksen kansainvälisyys.

Tavoitetilan saavuttamiseksi esitetään toimenpiteet varhaiskasvatuksesta korkeakoulutukseen ja tutkittuun tietoon, vapaaseen sivistystyöhön, jatkuvaan oppimiseen, taide- ja kulttuurikasvatukseen ja taiteen perusopetukseen sekä opintotukeen. Eriksien esitetään ruotsinkielisen koulutuksen, maahanmuuttajien oppimisen, vammaisten ihmisten oppimisen sekä saamenkielisen koulutuksen tilannekuva sekä näiden tilannetta edistävät toimenpiteet.

Asiasanat varhaiskasvatus, koulutus, tutkimus- ja kehittämistoiminta, oppiminen

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I den utbildningspolitiska redogörelsen ger statsrådet riktlinjer för utvecklingen av utbildningen och forskningen så att de betjänar Finland, finländarna och det internationella samfundet på ett sätt som tryggar hållbar utveckling. I redogörelsen presenteras en vision för utbildningen och forskningen som sträcker sig fram till 2040-talet och fastställs de ändringar som behövs i resurserna, strukturerna och styrningen för att svara mot och påverka förändringsfaktorerna i verksamhetsmiljön och för att skapa förutsättningar för ett meningsfullt liv för alla. Visionen och de åtgärder som behövs för att uppnå den grundar sig på en analys av nuläget för utbildningen och forskningen samt av de centrala förändringarna i omvärlden.

Målet är en stark bildningsgrund, välbefinnande hos alla som lär sig och jämlikhet i utbildningen, en hög utbildnings- och kompetensnivå, utbildning och forskning som ordnas på ett socialt, ekonomiskt och ekologiskt hållbart sätt, utnyttjande av samarbete och digitalisering samt internationalisering inom utbildningen och forskningen.

För att uppnå detta föreslås åtgärder som gäller allt från småbarnspedagogik till högskoleutbildning och evidensbaserad kunskap, fritt bildningsarbete, kontinuerligt lärande samt konst- och kulturförstran och grundläggande konstundervisning kontinuerligt lärande, konst- och kulturförstran och grundläggande konstundervisning samt studiestöd. För den svenskspråkiga utbildningen, lärandet hos invandrare, lärandet hos personer med funktionsnedsättning och den samiskspråkiga utbildningen presenteras separata lägesbilder och åtgärder som främjar situationen.

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1 Education Policy Report's purpose, basic premises and preparation process

The importance of education as well as research, development and innovation as promoters of economic and social well-being is recognised globally. High expectations are placed on the possibilities of education to solve societal problems, promote sustainable development and improve people's lives. Science and research are similarly expected to solve not only problems related to people's everyday lives and well-being but also major global challenges.

In Finland, too, there is a broad consensus on the fact that high-quality education, science and RDI have enabled the welfare and success of Finland and Finnish people by international comparisons. Among other things, Finland is the most stable, free, safe and happy country in the world with the highest volume of human capital. Education, culture and science have created a foundation that strengthens and renews society, and they will also continue to do so in the future. Education and culture comprise the dimensions of knowledge, ethics and democracy alike. Education and culture create preconditions for welfare, civil society, social inclusion and trust. Learning and exploring are an essential part of being human and have an intrinsic value as building blocks of a meaningful life. Education and science also create economic welfare and growth.

However, positive development cannot go on without work, significant financial investments and the renewal of practices and structures. We must look after the performance and competitiveness of our education and RDI system in an international operating environment to safeguard the educational and cultural rights and well-being of children, young people and the entire population. To maintain high quality and impact also in the future, political will, sufficient resources, and competence in all activities from decision-making on education policy to practical education, teaching and RDI work will be required.

In this Education Policy Report, the Finnish Government defines the guidelines for advancing education and research and ensuring that they will address the needs of the country, the people and humankind with a high quality and impact. The Report sets out the target state of education and science into the 2040s. It describes the changes in resources, structures and steering that are now required to respond to and influence the drivers of change in the national and international operating environment and to create the preconditions for a meaningful life for everyone.

The Ministerial Working Group on Competence, Education, Culture and Innovation and, at the Ministry of Education and Culture, both the Minister of Education and Culture and the Minister of Science and Culture with the support of senior public officials all took part in formulating the report. A parliamentary monitoring group was appointed on 19 March 2020 to support the work on the Education Policy Report. As permanent expert members of the group were appointed the Permanent Secretaries of the Ministry of Education and Culture, the Ministry of Economic Affairs and Employment and the Ministry of Social Affairs and Health, the Directors General of the Academy of Finland and the Finnish National Board of Education, and the Director of the Finnish Education Evaluation Centre. The group met five times. A seminar was organised for around one hundred participants in January 2020, the introductions and workshops of which focused on seeking solutions for responding to changes in the operating environment and supporting the preparation of the Report. In early 2020, virtual brainstorming was organised to collect ideas for building a good future through education, training and competence. More than four thousand responses were received. A meeting of scientists discussed research related to equality in education in February. Additionally, more than 30 NGOs were consulted in different ways during the Report's preparation process. Discussions were held with individual organisations, online discussion events were organised for different actors, and the subject was deliberated at seminars arranged by various parties. On 10 December 2020, a request for an opinion on the draft Report was sent to municipalities, upper secondary education providers, universities and universities of applied sciences as well as a broad range of other actors and key stakeholders in the field of education and research. The draft was also published on the web service [Lausuntopalvelu.fi](https://lausuntopalvelu.fi) for open commenting. The deadline for submitting comments was 22 January 2021, by which date some 330 statements were received.

While the Education Policy Report was being prepared, significant education and RDI policy reforms were being drafted, whose contents, objectives and impacts are addressed in this Report. The National Roadmap for Research, Development and Innovation was completed in April 2020, and its implementation is under way. On 30 December 2020, the President of the Republic approved the Compulsory Education Act, under which compulsory education is extended until a young person turns 18. The new Act will apply for the first time to young people at compulsory education age whose compulsory education under the current Act will terminate in 2021. A parliamentary reform of continuous learning will respond to people's lifelong need for upskilling and reskilling. The relevant policies were completed in late 2020. The Government report on the need for a reform in integration promotion services also has interfaces with the Education Policy Report. The Report will be submitted to Parliament in spring 2021.

The target state set out in the Report and the measures needed to achieve it are based on a situational picture of education and science as well as key factors in the operating environment: demographic change, increasing inequalities, technological development,

transformation of work and business, the state of the environment and climate change, democracy and human rights as well as internationality and global problems. These themes are examined in Chapter 4.

Significant processes driving the change in the structural operating environment include at least the health and social services reform, the reform of services for families with children, and a review of the relationship between the local and central government in the management of employment. An employment experiment has been launched in municipalities with the aim of solving the questions of ownership and division of labour between the state and municipalities in the service structure of employment by the end of the government term.

Prime Minister Marin's Government has launched a number of preparation processes that will have an impact on regional government structures and the financial carrying capacity of the regions. The objective of the Parliamentary report on regional administration and multiprofessional counties is to determine the role and position of the county in public administration as a whole as well as the tasks that can be transferred from municipalities, joint municipal authorities and the central government to the autonomous regions. The underlying aim is not only ensuring the availability and economic carrying capacity of essential functions of society but also finding appropriate administrative solutions at both the regional level and in each sector. The health and social services reform will significantly change the tasks of municipalities, in which early childhood education and care as well as pre-primary and basic education will be emphasised after the reform. Early childhood education and care as well as pre-primary and basic education are covered by the system of central government transfers to local government for basic public services, and these functions will account for the greatest part of the central government transfers system in the future. In addition to education services, the other tasks in the field of education and culture – culture, physical activity and youth services – and cooperation between them will also be emphasised following the health and social services reform.

Education system and its steering, legislation and funding

The task of the public administration is to safeguard citizens' fundamental rights and services openly and without discrimination. The key policy instruments of the Ministry of Education and Culture are legislation, financing and information-based steering. The actors have traditionally been trusted with an autonomous status in Finland. The organisation of teaching and education and higher education institutions' engagement with their background communities vary and are the result of historical development. Early childhood education and care, pre-primary education and basic education are statutory duties of the municipalities, and municipalities are the principal providers of these forms of education. General upper secondary education is often organised in shared facilities with basic education, and their teaching and support measures for studies have many structures in common. Clearly more diversity is

seen in the provision of vocational education and training (VET). While the municipalities also play a large role in vocational education and training, the most common provider model is a joint municipal authority, and only the largest municipalities organise VET as sole providers. However, a significant part of VET is organised by actors governed by private law. All universities of applied sciences today operate as limited liability companies defined in the University of Applied Sciences Act; of the universities, two are foundations governed by the Foundations Act, while the others are bodies governed by public law. Providers of liberal adult education and basic arts education include municipalities and private actors.

Finnish education system

The legislation on early childhood education and care, education and training, science institutions and research is quite broad and somewhat fragmented and contained in dozens of acts and decrees. In addition to legislation on the forms of education, there are separate statutes on financing, administration, eligibility and social benefits for students.

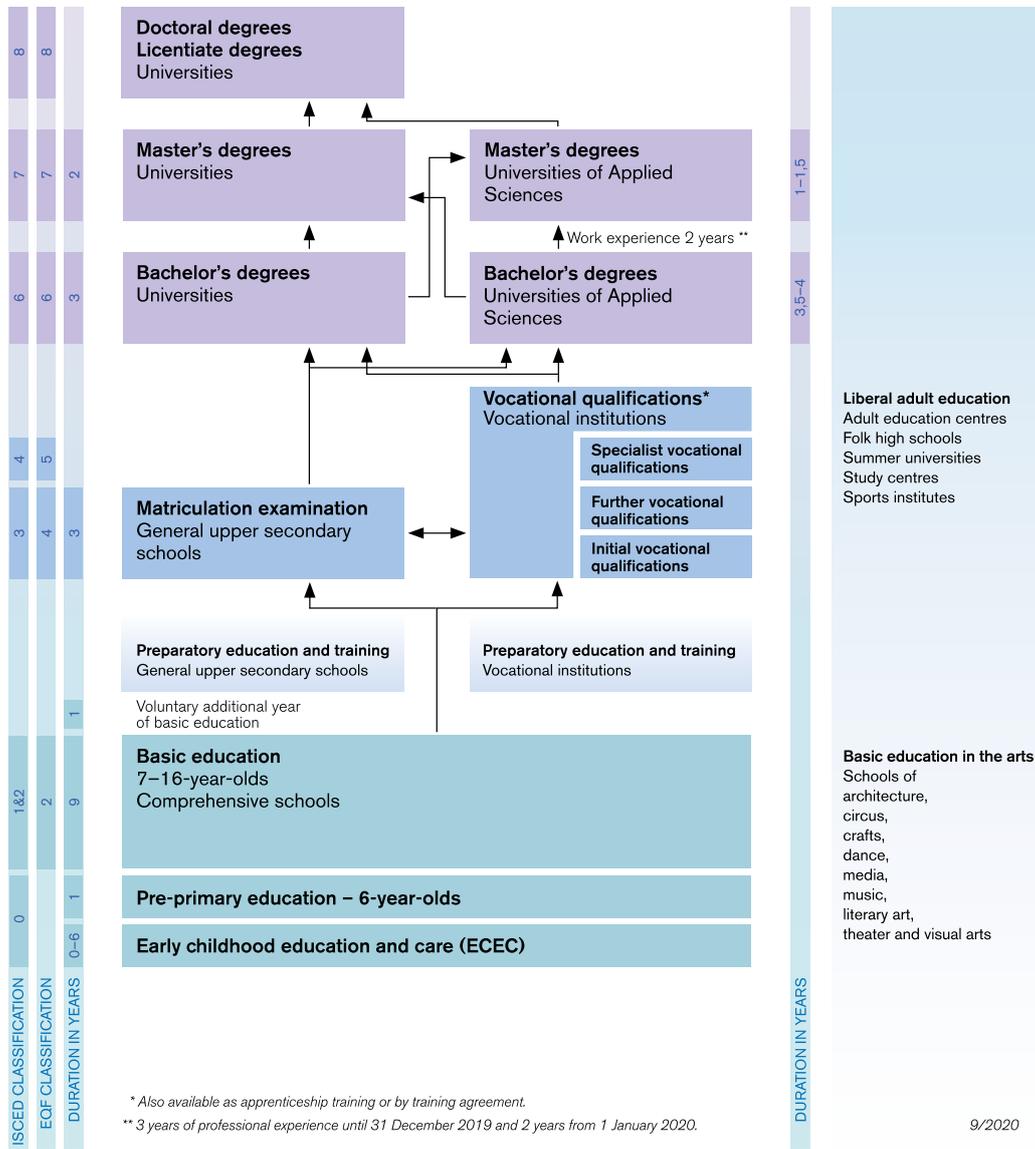
The level of appropriations for the administrative branch of the Ministry of Education and Culture in the central government budget for 2020 is approx. EUR 7 billion, of which the share of education and science is around EUR 6.3 billion. When examining the appropriations, it should be noted that the financing of upper secondary vocational education and training and general upper secondary education, which is administered by the ministry, includes not only the appropriations included in the state budget but also the municipalities' funding shares per resident, which account for a total of EUR 1.4 billion.

Financing for early childhood education and care and pre-primary, primary and lower secondary education covered by the system of central government transfers for basic public services administered by the Ministry of Finance is also part of the overall funding for education within the purview of the Ministry of Education and Culture. Its share in the organisation of municipal service provision is approx. EUR 8 billion. Consequently, the total amount of public financing for education and science is around EUR 16 billion.

In 2017, education expenditure accounted for 5.2% of Finland's GDP. This proportion exceeded the OECD and EU averages but was lower than in the other Nordic countries. Since 2012, the GDP ratio of Finland's education expenditure has declined somewhat more than in the OECD and Nordic countries.

The cost per student corrected for purchasing power differences in basic and upper secondary education was also on par with the OECD and EU averages in 2017 but clearly lower than in the other Nordic countries. Measured as constant prices, the cost per student in Finland decreased by about one per cent annually from 2012 to 2017, compared with an average increase of 1.4 per cent in OECD countries. (OECD 2020a.)

EDUCATION SYSTEM IN FINLAND



From the perspective of the future of education and cultural services, it will be essential to come up with structures that will enable the availability of high-quality education and training in all parts of Finland. The solutions must also appropriately address the basic missions of each level and sector of education, science and research and the needs of learners.

2 Target state – education and research into the 2040s

Finland will be a nation with a strong cultural and educational foundation built on effective and high-quality education, research and culture. Diverse education and culture that move with the times lay the foundation for equity, well-being, human development and a good life as well as society's renewal and ability to anticipate and respond to sudden changes. Education and research and the competence they bring about will reform Finnish society and the world of work. Finland is a frontrunner in the production, introduction and application of new knowledge and competence. New solutions and practices will be created by combining multidisciplinary and multisectoral competence.

Everyone has the right to learn and grow and to receive the support and guidance they need. The underlying values of education set down in the legislation will be put into practice equitably across Finland. Every child has the right to attend high-standard early childhood education and care. The path of increasing educational inequalities will have been reversed. Progress on the study path and learning outcomes will not depend on the learner's gender, restrictions to physical functional capacity, place of residence, or family or cultural background. Early childhood education and care services and educational services of a high standard will be available in both national languages, and the special needs of language minorities will be addressed. All learners can feel safe during their day in early childhood education and care and school, and they will be heard and taken into consideration as members of their communities. Sufficient numbers of competent and committed teaching, guidance and other staff will be available across Finland, and the staff will regularly improve their competence.

Finnish people's levels of education and competence will be among the highest in the world. The proportion of children participating in early childhood education and care will be at a high Nordic level. Basic education pupils will achieve world-class learning outcomes. The entire cohort of young people will complete an upper secondary qualification that opens the doors to further studies and the world of work. At minimum 50% of young adults will complete a higher education degree. Everyone will have opportunities

to develop and update their competence at different stages of their careers, regardless of their background, workplace, place of residence, life situation or disability. Finnish research will be of a high international standard, seamlessly linked to education, and drawn on in versatile ways. Education and research organisations will create new practices, renew competence, and rejuvenate national and regional economic structures in close cooperation with the world of work.

Early childhood education and care, high-quality education and competence development will be organised in both national languages in a manner that promotes educational equity and is socially, economically and ecologically sustainable. Legislation, financing systems and the structures and practices of the education system will have been updated to promote both international and national cooperation, respond to societal changes and secure sufficient resources. Organisation of high-quality education and good learning outcomes will be ensured throughout the country. Education and qualifications will form a seamless system, and low boundaries within this system will enable flexible personal choices. There will be no closed doors in the education system, and students at every level can apply for a place in further studies. New technologies will be used extensively and innovatively to support learning. The digital learning environment will be advanced, and the information reserves of learning will be available to both people and society for promoting learning and pedagogical development. The offer of digital education and digital learning platforms and solutions will enable studying regardless of time and place.

Education and culture will be manifested as internationalisation, understanding of diversity, well-being and promotion of sustainable development. The education system enables migrants and international experts to find their place in Finnish society and the world of work. Finnish education and research draw talented people from all over the world to Finland. In global contexts, Finland will work to promote the free flow of information, build trust in scientific knowledge and forge cooperation. Finns will be active in international education and research networks and take on leading roles in them.

3 Objectives of education and research and policy actions

Finnish early childhood education and care and education are based on and promote the principle of continuous learning. Continuous learning refers to developing competence throughout the individual's life span. Changes in the operating environment will have extensive impacts on the entire chain and process of continuous learning. To ensure that our education system will promote continuous learning, it must offer all learners seamless transitions within the system and effective connections and interaction with the rest of society.

The realisation of continuous learning to a high standard and without discrimination in the future will be hampered by many factors, including demographic change. In the decades to come, there will be significant differences between the operating conditions and prospects of the Finnish regions. The shrinking cohort sizes, retirement of local government personnel, problems created by a lack of skilled labour and poor outlook of local government finances will make it difficult to organise high-quality, accessible and equitable early childhood education and care and education in the next few years.

Ensuring the accessibility, quality and equity of early childhood education and care as well as pre-primary, primary and lower secondary education services will face the central government and municipalities with new problems. The current administrative, financing and legislative solutions do not take into account the diverging circumstances of municipalities in terms of demographic development, quality of services, non-discrimination and accessibility, support needs, the needs of foreign-language speakers, and the availability of school transport and qualified teachers to mention a few.

Upper secondary education allows students to build a strong foundation of knowledge and skills and develop into active citizens and full members of society. It secures a strong foundation of general knowledge and ability and vocational competence needed for further studies and the transition to working life for the entire cohort of young people as well as contributes to the competence development of the working-age population. In the future, upper secondary education must be able to change along with society and the labour market. The transformation of working life will require changes to the teaching contents, and the demographic structure will influence the preconditions for organising education.

Universities and universities of applied sciences should produce enough highly educated experts for the needs of society and the world of work. The current operating structures and models of higher education institutions do not fully support the organisation of equitable, high-quality, student-centred and cost-effective higher education in a situation where digitalisation, internationalisation and demographic trends are changing higher education and its organisation. The operation of the RDI system and the number and impact of its outcomes have not reached the desired level.

The changing world of work and everyday life will also require people at working age and beyond to maintain and develop their competence. However, learning and training during workers' careers are not realised equally. The increasingly technological daily life also creates new learning needs for older people. While increasing immigration is necessary, it will require new solutions of the education system.

The current system has poor prerequisites for supporting cooperation between the different levels of education. The funding base leads to fragmentation of steering, which is provided by several actors. Additionally, the data collection and monitoring systems do not currently fully enable monitoring service quality and equity, making knowledge-based decisions or anticipation. Reforms are needed to clarify and strengthen the monitoring and management of quality, accessibility and realisation of fundamental rights. These reforms will also make it possible to guide, support, enable and monitor structural and subregional development work in the organisation of educational services. Every child and young person across Finland should continue to have equitable opportunities to grow, develop and learn in the future. Administrative structures should also support and safeguard the realisation of educational and cultural rights in Finland in the years to come. Well-being is a prerequisite without which children, pupils and students cannot learn and progress on their learning paths. This is why cross-administrative cooperation will also be essential.

The goal of the central government and the steering it provides is to take care of the citizens and their well-being. Key policy instruments used by the government are regulative, resource-based and information-based steering. Regulative steering refers to steering through acts, decrees and lower-level regulations. Resource-based steering means controlling the allocation and use of resources, in which the budget is a key policy instrument. The basic premise of information-based steering is using information provision as a policy instrument. The different forms of information-based steering include sharing research and register data, producing indicators and standards for measuring activities, disseminating peer information and evaluation data, preparing guides, recommendations and other publications, providing information on the application of legislation, formulating various development policies and operational policy programmes, providing training and consultation services as well as interaction and exchanges of information in various working groups, networks, negotiation systems, and RDI activities.

These three forms of steering are complemented by project management, ex ante and ex post supervision as well as evaluation. Evaluation as part of information-based steering may, for example, mean investigating if the delivered services comply with the quality recommendations. Attempts to differentiate between these forms of steering are partly artificial, as all management is associated with information in one way or another¹.

The actions proposed in this Education Policy Report aim to ensure that the target state described above can be achieved. The exact form of the actions and their division into regulative, resource-based or information-based steering, or their various combinations, will only take shape during the actual preparation processes undertaken on the basis of this report.

Safeguarding equitable education that is free of charge, of high quality and accessible will demand significant investment of public funds into education and research also in the future. A higher level of education and competence can only be achieved with adequate resources for education and research and better allocation of existing resources. Finland undertakes to invest in education as a society. Predictable long-term financing is a prerequisite for achieving the objectives set for education and research.

Not investing in education and research and lagging behind our key reference and competitor countries in development is something Finland cannot afford. Education, research and innovation play an important role in the renewal of society, which is why significant inputs have been made in them in recent years and why continued investment in them will be vital. The long-term prerequisites for developing education and research will be improved by implementing the reforms required to ensure sustainable general government finances. The long-term objective is to promote sustainable growth by strengthening the resources of education and research and, on this basis, improving the quality of education and well-being services further.

An exceptionally high level of uncertainty is currently associated with economic forecasts, which is also reflected in assessments of the outlook for general government finances. Ageing of the population will automatically increase public spending and weaken the growth potential of the economy, thus slowing down growth in tax revenue. This underlines the importance of raising the level of competence and creating as many high-skilled and high-productivity jobs as possible.

The coronavirus crisis has hit children and young people across a broad front, and closing up the well-being and learning gap will require political intent spanning several government terms in order to secure resources for addressing the increased need for

1 Tukia & Wilskman 2011; Stenvall & Syväjärvi 2006

services, especially in regions and levels of education which have seen long and repeated distance learning periods.

As the cohort sizes shrink in the 2020s, savings made in central government transfers to local government for basic public services will be used to cover some of the financing needs of education. The appropriations thus saved will be allocated to implementing an overhaul of the legislation on and financing for early childhood education and care as well as pre-primary and basic education in line with the objectives set in this report, taking into account the state of general government finances. This will strengthen the quality and equity of early childhood education and care and basic education. Sufficient resources will also be made available to secure quality, equity and contact teaching in upper secondary education.

Increasing the proportion of highly educated people to at least 50% of those aged between 25 and 34 will be made possible while maintaining the quality of education. To achieve this objective, additional financial resources will be allocated to higher education and student financial aid as required by the increased student numbers. At the time of a powerful structural change, resources for continuous learning should also be allocated appropriately. Regarding Finland's research, development and innovation expenditure, continuing to aim for the ratio of 4% of GDP set as the target for 2030 through the measures of the approved RDI roadmap will be important.

An implementation plan will be drawn up for the Education Policy Report. As plan implementation is monitored, sufficient financing needs will also be assessed in the context of preparing the General Government Fiscal Plan.

Matters related to financing needs will be discussed and the relevant decisions will be made within the central government spending limits and the Government Fiscal Plan, coordinating them with other expenditure needs of the public economy.

3.1 Early childhood education and care, pre-primary education, and primary and lower secondary education

High-quality early childhood education and care as well as pre-primary, primary and lower secondary education build the competence and well-being of every child and young person without discrimination. Some of the challenges currently facing education providers include the demographic change, shrinking cohort sizes, erosion of equality and equity in education, a shortfall in qualified teachers and special needs teachers especially in early childhood education and care, a low participation rate in early childhood education and care, deteriorating learning outcomes in primary

and lower secondary education, and poorer attitudes related to learning. These changes put legislation and financing under such severe pressure that the current administration model and structure do not support the objective of providing education services equitably across the country. The overhaul of legislation and financing proposed in this report will safeguard the realisation of educational and cultural rights as well as the rights of the child without discrimination, while also ensuring equity, accessibility and high quality in early childhood education and care as well as pre-primary, primary and lower secondary education services in all parts of the country. These actions will improve learning outcomes as well as promote well-being and children's and young people's holistic development.

The prerequisites for learning fall in place in high-quality early childhood education and care as well as pre-primary, primary and lower secondary education. In early childhood education and care (ECEC), the child's holistic learning, development and well-being are promoted methodically and with a goal-oriented approach. The Basic Education Act guarantees everyone the right to grow, learn and develop in a safe environment regardless of their socioeconomic background. Well-being is a prerequisite for competence development. Children's and young people's well-being in early childhood education and care and in pre-primary and basic education is affected by physical, psychological and social factors, and safety. Finland's success is based on the entire population's extensive and high-standard basic knowledge and skills and citizens' ability, willingness and opportunities to improve their competence.

The Finnish Act on Early Childhood Education and Care provides for the right of under school-age children to early childhood education and care, while the Basic Education Act guarantees children the right to pre-primary education. Attending pre-primary education is mandatory, and almost the entire cohort participate in it. The participation rate in early childhood education and care has in recent years been increased by different measures, including reduced client fees. However, the participation rate remains lower compared to the other Nordic countries or when looking at average participation rates in EU and OECD countries. Studies have found that while early childhood education and care has a positive impact on the learning, development and well-being of all children, it has a particularly high impact on children whose circumstances are difficult. ECEC participation helps children learn basic skills and consequently supports their later academic success. Studies indicate that the main reasons for non-participation in ECEC are child home care allowance and the municipal supplement practices associated with it, ECEC client fees, and factors related to the quality of ECEC activities.

The learning outcomes of Finnish students at basic education age have deteriorated, and attitudes towards learning have become less positive. The downward trend in learning outcomes is indicated by both international and national learning studies, including PISA,

PIRLS, TIMSS, evaluations of the Finnish Education Evaluation Centre (FINEEC) and national Learning to learn studies. Studies have found that the decline is particularly visible in literacy and numeracy skills, which lay the foundation for children's and young people's advancing knowledge and skills. According to the PISA study, Finnish young people's competence in literacy, mathematics and science has shown the greatest decline of all participating countries in the 2010s. While competence has deteriorated at all levels, there has been a particular increase in the proportion of students with a poor performance. In the first PISA study in 2000, only seven per cent of Finnish students performed poorly in literacy. This proportion was also seven per cent in mathematics but only four per cent in science. In the latest PISA 2018 study, these figures were 14% in literacy, 15% in mathematics and 13% in science. Consequently, the proportion of those with a poor level of skills has doubled in literacy and mathematics, whereas in science, the share of those with a poor level of skills has as much as tripled. In the meantime, the proportion of the highest-scoring students has dropped, especially in mathematics and science.

Differences between students have increased, and the student's background has a greater impact on learning outcomes. As recently as the beginning of the millennium, the differences between Finnish students were considerably smaller than the OECD average, whereas in the most recent study, the differences were on par with or above the average. The differences in students' performance reflect variation in their socio-economic backgrounds. The association between the socio-economic background and student's competence in Finland has been one of the weakest in the OECD countries, but in the latest study, it was at an average level. This means that comprehensive school is no longer able to even out the initial differences between students' competence. In particular, educational equality has eroded in large cities, where schools are more likely to select the students they admit to the school and its classes than elsewhere in Finland.

The PISA study found that the difference in literacy between Finnish girls and boys is the largest in the OECD countries. Girls also outperform boys in mathematics and science. In 2018, the difference between Finnish girls and boys was the largest in the OECD countries also in science, with the girls doing better than boys. Gender differences in competence emerge during primary and lower secondary education. This observation is supported by an evaluation study conducted by FINEEC (2020), according to which the differences in skills between girls and boys were very small in the first year of basic education, whereas at the final stage girls outperformed boys by one grade. FINEEC has found in its evaluations that the student's attitudes towards a subject and studying it had a clear association with competence. Girls' attitudes towards studying were more positive than boys' across the board. Up to 42% of the students' overall performance in Finnish language and literature was explained by their attitudes, interest in reading, doing their homework and using digital media.

The poorer performance in mathematics in the PISA test of students with a migrant background compared to other students indicate that their poorer academic success corresponds to two years' studies. This gap is one of the largest in the OECD countries. The differences between the native population and students with a migrant background have persisted from one round of PISA tests to the next, and the average results in literacy, mathematics and science have deteriorated since 2009.

Through cooperation between early childhood education and care, the home and the school, parents can be helped with supporting their children's learning, growth and well-being. Service counselling provided by the child health clinic services can help increase the participation rate in early childhood education and care. Student welfare work is guided by the child's best interests as the primary consideration and efforts to improve the child's well-being. Student welfare promotes children's and young people's learning, psychological and physical health, social well-being and sense of belonging to the community in which they grow up. Student welfare services are jointly implemented in systematic multidisciplinary cooperation between education services, healthcare and social welfare services together with the students, their custodians and other partners if necessary. Children's and young people's well-being is promoted by a sense of belonging to the community and having possibilities to exert influence on the way it operates. All children's and young people's equitable opportunities for participating can be strengthened by supporting their emotional and interaction skills as well as friendships in early childhood education and care, school and educational institutions and by consulting children and young people in decision-making. Children's and young people's well-being is supported proactively by means of multiprofessional low-threshold services provided at the right time. The right to high-quality education should also be realised for children and young people who are clients of child welfare services. A prerequisite for creating a child and family-friendly society is cooperation between educational services, social welfare and health care services, municipalities and regions.

Children and young people with difficult backgrounds are at a greater risk of social exclusion. The problems of increasing inequalities are reflected on children and young people in many ways. Studies have found that such behaviours as excluding children from friendships can already be observed among children aged between three and six. Bullying was relevant to children with a need for special support significantly more often than for others. More children have experiences of loneliness and bullying when they move on to basic education, and the WHO's Health Behaviour in School-aged Children survey (2018) found that loneliness becomes more common in lower secondary school as young people grow older. At the end of the lower secondary school, 20% of young people often feel lonely. The preconditions for looking after the well-being and safety of children and young people include integration of various social and health care services with schools, early childhood education and care and youth services. A key role is played by preventive

actions, which require a cross-administrative network of professionals working for the best interests of children and young people by sharing information and expertise.

In spring 2020, the coronavirus epidemic brought about a sudden transition to distance learning and the use of digital technology in teaching and learning. Surveys and studies have found that pupils and students experienced distance learning in different ways; for some it was more stressful than contact teaching, whereas others found that it improved their well-being. Initial observations indicate that the exceptional situation has had a negative impact on educational equality.

Objective

The realisation of educational and cultural rights and the rights of the child as well as the availability and quality of equitable early childhood education and care, pre-primary education and basic education services will be safeguarded throughout the country.

Actions

- The legislation on early childhood education and care, pre-primary education and primary and lower secondary education will be overhauled as a whole. The aim of this legislative reform is to support children's holistic learning paths and to facilitate flexible transitions from early childhood education and care to pre-primary and basic education by building an administrative system that is coherent in terms of legislation, financing and operating practices as well as at the conceptual level. The reform will ensure that the equitable and high-quality realisation of children's rights and delivery of services can be monitored, guided and coordinated more clearly. As a rule, early childhood education and care and pre-primary education will continue to be public services throughout the country. The reform will draw on the findings of the experiments relating to two-year pre-primary education and free early childhood education and care.
- The legislation on financing for early childhood education and care and pre-primary, primary and lower secondary education will be overhauled to bolster strategic guidance, monitoring and coordination. The objective is creating a financing system that would address more effectively the divergent circumstances of municipalities in terms of the impacts of demographic development, quality of services, equity and accessibility, support needs, the needs of Swedish and foreign-language speakers, and the availability of school transport and qualified teachers, among other things. This would facilitate local and regional cooperation in service organisation.

The overhaul of the legislation and financing system will make it possible to review and update the cooperation and division of tasks between the Ministry of Education and Culture and the Ministry of Finance. The focus of financing will shift from grant applications to basic financing and support for long-term development.

- Financing for positive discrimination will be put on a permanent footing to improve the capabilities of the education system to even out the impacts of social inequalities, including segregation within municipalities.
- Legislation on reforming the financing for positive discrimination will be drafted as part of the efforts of the working groups responsible for The right to learn programmes for quality and equality in early childhood education and care, pre-primary education and basic education. The right to learn working groups will prepare the broader outlines of the reform of financing legislation by the end of 2022.
- The impact and steering of early childhood education and care, pre-primary and basic education as well as liberal adult education will be improved by drawing up and implementing an information management framework based on national strategies and statutes. These activities will ensure the creation of interoperable data repositories and models as well as information systems that pay attention to coherence of the knowledge base, information security and data protection.
- On the basis of The right to learn development programme, measures will be prepared to safeguard the preconditions for learning and support for educational transitions of children and young people with a migrant background, especially at the transition points of education. Attention will be paid to safeguarding the learning prerequisites of children and young people with a migrant background, especially regarding the linguistic and other learning capabilities of students who have newly arrived in Finland. The adequacy of the measures will be assessed, and detail will be added to the allocation of resources if necessary.
- A development programme for the teaching of the Finnish/Swedish as a second language syllabus (S2) will be launched for 2021–2023. On the basis of this programme, a high-quality Finnish/Swedish as a second language study path will be established for all stages of the education system. As part of the programme, preparatory education for basic education will be developed, ensuring that the targeted proficiency level in the language of instruction corresponds to the level required in basic education. Children's equitable right to preparatory education will be strengthened.
- To improve the quality and equity of services, clear and binding quality targets and indicators describing their attainment will be set for the organisation of early childhood education and care and pre-primary, primary

and lower secondary education. The quality targets will determine the target level of the services equitably across Finland. A knowledge base and information systems based on open data will be developed concerning demographic change, service needs and the standard of services in relation to the national quality standard, thus making shared, reliable and up-to-date data available to support the decision-making in municipalities and the central government. In the preparation of the quality criteria, the disparities between municipalities will be addressed, and researchers, education providers and stakeholders will be widely engaged.

Objective

Participation in early childhood education and care will be increased, children's and young people's well-being will be improved, the trend of deteriorating learning outcomes will be reversed, and learning gaps will be reduced.

Actions

- Participation in early childhood education and care will be increased by drawing more attention to the significance of ECEC for the child's learning and development and by tackling the reasons for non-participation; ECEC client fees will be reduced and, over the long term, abolished (at least 4 hours of free ECEC per day). The impact of home care allowance and the municipal supplement practices on ECEC participation will be assessed based on research evidence.
- The objective is that every Finnish child and young person will receive the best ECEC and education in the world in their neighbourhood school or day-care centre. In connection with the overhaul of the legislation on early childhood education and care, pre-primary, primary and lower secondary education, equitable preconditions for learning and educational opportunities will be secured in ECEC as well as in pre-primary, primary and lower secondary education. To prevent the divergence and segregation of ECEC services and schools, the delivery of neighbourhood services will be supported.
- Timely support and equitable low-threshold services sufficient for safeguarding children's and young people's development, learning and well-being will be ensured by legislation across Finland. The need for assessing the student-teacher ratio in primary and lower secondary education will be examined. Children's and young people's participation in drafting legislation on ECEC as well as pre-primary, primary and lower secondary education and

finding local solutions will be promoted and developed. The realisation of children's rights in decisions on the organisation of ECEC and basic education will be ensured both at the national and local level. An encouraging school culture in which diversity is accepted will be supported.

- Well-being and inclusion in ECEC and school communities will be promoted, and bullying will be prevented by establishing a preventive cross-administrative network of professionals as a permanent part of the ECEC and school culture. An amendment to the Basic Education Act will be prepared to create a national model of engaging school community work with the aim of preventing dropping out and absences from school and promoting a positive school culture that supports school attachment. In this work, special attention will be paid to developing cooperation between the home and the school.
- The delivery of student welfare services and the adequacy of their dimensioning will be monitored and assessed, and the resources will be increased if necessary. Integration into the school community is at the core of student welfare work. Student welfare is primarily organised as preventive and communal services that support the entire school community. In addition, children and young people have a statutory right to individual student welfare. Multidisciplinary cooperation plays a key role in student welfare. Children and young people should be able to access services without delay, allowing the student welfare work at school to focus on its basic task, or promoting learning, health and well-being through communal work. The Student Welfare Act coordinates the activities and cooperation of different administrative branches as well as multidisciplinary work.
- Literacy and numeracy lay the foundation for all learning. Measures that improve these basic skills will be strengthened in early childhood education and care and pre-primary, primary and lower secondary education. Sufficient basic skills needed for active citizenship will be secured for every student.
- Age-appropriate opportunities to improve their critical literacy will be ensured for all children and young people, using different sources. Taking their age levels into account, children's and young people's ability to use digital tools safely and responsibly for participating in social and civic activities will be promoted. Access to appropriate devices and user support services that enable digital learning will be secured for each child and young person.
- These measures will be promoted in both national languages and, of the minority languages, in Saami, Roma and sign languages.

Through the actions described above, by 2040

- Early childhood education and care, pre-primary education and primary and lower secondary education will be organised in an economically and ecologically sustainable manner that promotes equity and equality in education across Finland.
- Legislation, financing systems and the structures and operating methods of the education system will respond to changes in society and secure sufficient resources.
- The funding system will address better the disparities between municipalities, ensuring the quality, equitability and accessibility of services and supporting learning and well-being.
- The participation rate in early childhood education and care will be at least on par with the other Nordic countries.
- The learning outcomes of basic education will reach a high international level and differences in skills between students will be minor.
- Support and well-being services for children and young people will operate preventively and respond rapidly to emerging needs.
- Capabilities for learning new things, active citizenship, further studies and success in a changing world of work will be guaranteed for each learner.

3.2 Upper secondary education

To achieve the objectives related to general knowledge and ability as well as to vocational skills and needs for continuous learning, the practices and structures of upper secondary education will be overhauled. Equality and equity in education will also be strengthened. Technology will be used widely to support learning and competence development, which will also contribute to safeguarding the accessibility of education. Well-being and forms of communality will also be strengthened. Digital learning environments and solutions will be developed to meet the needs of different learners. Education providers will be encouraged to form larger entities and to step up cooperation with the world of work.

Bolstering equality, equity and communality in upper secondary education

Upper secondary education is responsible for achieving the educational and vocational learning outcomes of the cohort that has completed basic education and, for its part, improving the competence of the adult population. Extending compulsory education until the student turns 18 will improve young adults' level of education and competence. High-quality vocational education and training and general upper secondary education provide all young people with a strong foundation for operating both in society and the

world of work as well as for continuing their studies. Education should be accessible to all and support the development of everyone's competence. Adequate teaching and support based on the student's personal needs will be prerequisites for achieving the educational objectives set for this cohort.

Teaching tools made possible by new technologies have been deployed in teaching and guidance, and their pedagogically appropriate use has renewed modes of learning. Personalisation of studies highlights the importance of learning paths that meet the needs of all students and basing studies on the student's personal capabilities and goals.

Excessive emphasis on self-direction in studies has caused problems for some young students. Additionally, not all education providers have succeeded in ensuring effective and supported personalisation and studies, which has resulted in fragmented school days and weeks for some students. This can be expected to have negative impacts on learning outcomes, which may lead to increasing polarisation of students' knowledge and skills. Some young people also need more community support and opportunities for learning together. Young people who are still finding themselves need support for their choices and progress in their studies. The presence of an adult and a safe study community are important prerequisites for the well-being and learning of the cohort finishing basic education. In upper secondary education, it must be ensured that everyone has the prerequisites for receiving adequate support and being successful in their studies.

In 2020, nearly 98% of those who completed their basic education moved on to general upper secondary school, vocational education and training or transition-point education. Of this cohort, 58% applied for a place in a general upper secondary school and 42% in vocational education and training as their first choice. While almost the entire cohort is admitted to upper secondary studies, many students drop out before completing a qualification. Around 15% of each cohort enters the labour market without an upper secondary qualification.

The decision to extend compulsory education will increase the proportion of young people who complete an upper secondary qualification and reduce the number of those who drop out. The aim of the reform is to ensure that as many young people as possible will complete an upper secondary qualification and thus have better possibilities of having a good life and doing well in the world of work. The entire cohort will have better prerequisites for further studies and upskilling at a later stage. The new statutes on compulsory education will enter into force on 1 August 2021. Guidance provision and supervision responsibilities will be imposed on education and training providers and the home municipality of a person at compulsory education age, which will strengthen the guidance and support received by young people under the age of 18, especially when they are applying for a place in education and potentially dropping out. The provisions

on the obligation to apply already entered into force on 1 January 2021. A student at compulsory education age is now obliged to apply for a place in upper secondary education after finishing basic education. However, the need to reform upper secondary education does not stop with the overhaul of the compulsory education legislation. The delivery of compulsory education will be supported extensively and over the long term to ensure its realisation as planned. In addition to implementing the extension of compulsory education, the measures of the Education Policy Report will help develop upper secondary education as a whole as well as vocational education and training and general upper secondary education separately, each based on their specific characteristics and objectives.

Transition to further studies will continue to be based on admissions, however. Around one out of four students aged 15 to 19 admitted to universities of applied sciences and less than one per cent of those admitted to universities have already completed a vocational upper secondary qualification. Despite efforts made, transition to further studies to a great extent still depends on whether a young person has completed the matriculation examination or a vocational qualification.

This selection process already begins with decisions concerning further studies made following basic education, which are influenced by the young person's background. If we look at the mothers of students starting in vocational education and training, for example, a clearly larger proportion of them had completed at most a vocational qualification than the mothers of students starting in general upper secondary education, and this difference has not grown smaller in the 2000s.

There are also significant regional disparities between the young people's selections, in addition to differences within municipalities. The differences are partly explained by the provision of study opportunities and ideas of different occupations and tasks in the world of work but also by different perceptions related to vocational and general upper secondary education, stereotypes associated with various fields and occupations, and the de facto possibilities of pursuing further studies and career progress after upper secondary education. Studies can be developed to enable more flexible combinations of vocational content and general knowledge and skills. For example, strengthening contents that build general knowledge and ability in vocational education and training contributes to giving students factual capabilities for further studies and balances transitions from secondary to higher education. Another precondition for this is that the different missions of vocational education and training and general upper secondary education are taken into account in higher education institutions' student admissions.

The lack of Saami-speaking teachers and learning materials hampers the organisation of upper secondary education in Saami. Closer cooperation between education providers will also support the organisation of Saami-language education.

Students with a migrant background will additionally need different support measures during their studies, for example to help them improve their language proficiency.

Objective

Equity and equality will be promoted in upper secondary education.

Actions

- New technologies and operating methods will be used in teaching and learning, making it possible to build for each student a study path that matches their goals, skills and capabilities while reducing inequalities between students.
- To ensure adequate teaching and guidance and to secure support during the studies, personalisation will be developed further in vocational education and training, enabling the introduction of positive discrimination compatible with the nature of vocational education and training. Experiences described in reports on the three levels of support will be taken into account in the preparations.
- The delivery of education will be monitored more effectively in general upper secondary education and vocational education and training, ensuring that the students' needs for teaching and guidance and other support can be addressed more effectively and that the teaching and guidance received by the students can be monitored better. The operating models and monitoring of study guidance will be improved to ensure that education providers have adequate capabilities for providing teaching and guidance that meet the students' needs.
- Student welfare services that meet their needs will be secured for all upper secondary level students, as well as equitable possibilities for activities that support their mental and physical well-being in the community of the educational institution in all parts of the country by developing practices and, if necessary, also legislation and financing systems. Students' well-being will be improved by promoting participation and educational institution democracy as well as by piloting low-threshold practices. In particular, communal student welfare in educational institutions will be reinforced.
- The boundaries between general and vocational upper secondary education will be lowered while mitigating the impact of perceived differences between the two forms of education on young people's choices between them. General upper secondary education and vocational education and training will also be developed as specific forms of education with their designated missions.

- Vocational qualification requirements and general upper secondary school curricula will be developed, making it possible to combine vocational qualification units or parts of common units and upper secondary school courses more flexibly as indicated by the competence needs of students, further studies and the world of work. The de facto possibilities of choosing such combinations in all parts of Finland will be ensured, and financing systems will be developed to support this objective.
- The proportion of common units in vocational upper secondary qualifications will be increased, or possibilities to complete competence modules that build general knowledge and ability and basic skills more flexibly and extensively in vocational education and training will be offered by other means. At the same time, it will be ensured that vocational qualification holders have the competence required in the world of work and sufficient workplace skills.
- The educational needs of people and society will be addressed when developing the structures and contents of general upper secondary education. Education evaluation results will be used in this work. Student assessment during general upper secondary school studies will be updated and diversified with the aim of promoting the student's learning. Data will be used efficiently and comprehensively to support learning and guidance, making it possible to monitor the progress of studies and learning outcomes better and to identify and intervene in learning difficulties without delay.
- Cooperation between general upper secondary education, vocational education and training and higher education will be developed to create flexible study paths. If necessary, legislation will be updated, making it possible to use data on students' learning and competence in the organisation of education and provision of support for learning without compromising their information security and data protection.
- Over the longer term, the possibilities of taking some of the matriculation examination tests in Saami will be assessed.
- More support will be provided for improving the basic skills and developing the language proficiency of students with a migrant background in vocational education and training by promoting the use of studies that support study skills through information management and, if necessary, by developing incentives in the financing system.

Resolving the mismatch through partnership with the world of work and by reforming education

As the transformation of work progresses, all workers will need solid basic skills and an ability to develop their vocational competence throughout their careers. As compulsory education is extended, an upper secondary qualification will be the basic level of

competence and education. Competence will play an even bigger role in companies' competitiveness, and upskilling will help renew production and service processes. On the other hand, intensified cooperation with the world of work at all stages of studies will be needed to enable young people's flexible labour market attachment. The internationalisation of companies and international markets will require a stronger international perspective in studies.

Upper secondary education will also be an important part of continuous learning. General upper secondary education will offer different competence modules and the opportunity to build up their general knowledge and ability also to the adult population. Roughly one half of learners are at least 25 years old when they start in vocational education and training. Upper secondary education will also be developed to meet the needs of the adult population, ensuring that it addresses their needs and that flexible opportunities for competence development that can be tailored to individual needs are available for those in the world and work and others who wish to complement the competence they acquired when young.

The new competence needs in society and the labour market will often emerge on the interfaces between different fields. In addition, they may require combining competence obtained in several different forms of education into a package that serves the student or the world of work. The link between the current provision of study opportunities and the qualification or degree structures of each level of education is at times too rigid. In particular, this applies to upskilling opportunities for those already in the labour market.

Objective

The education system will respond to changes taking place in the world of work.

Actions

- The partnership of general upper secondary education and vocational education and training with the world of work will be intensified to improve the relevance and quality of education and training. In addition, possibilities for workplace learning will be created, and the matching of education and training to labour market needs will be ensured.
- Internationalisation in upper secondary education will be promoted by increasing equitable opportunities for physical or virtual mobility for students as well as teaching and guidance staff.

- Offer of services extending across the boundaries between different levels and fields of education as well as common competence modules will be created to meet the skills needs of learners and the labour market.
- Specialist vocational qualifications will be updated to create flexible competence modules that can be tailored to individual needs and that can also be combined with content from other vocational qualifications, general upper secondary education and higher education.

Enhancing impact and quality in upper secondary education by upgrading practices and competence services

Many digital applications and environments that promote learning are used in upper secondary education. While digital platforms have already renewed the delivery of upper secondary education, their potential for improving the quality and accessibility of education are still underused. By making more extensive and pedagogically appropriate use of digitalisation, asynchronous teaching and studying can be made possible, and more personalised support for learning can be provided. New technologies, pedagogical solutions and closer cooperation between education providers will also improve the possibilities for studying in Saami. Rather than replacing them, digital learning environments and solutions will support and complement the current ways of learning and studying.

The problems arising in the operating environment are so large that in addition to operational reforms, developing the structure of upper secondary education actors will be necessary. The structures for organising upper secondary education should be reformed to ensure a good level of access to education in all parts of the country. For education providers, better preconditions for implementing operational and organisational solutions based on regional or sectoral needs should be created, also taking the principles of sustainable development into account. Efforts to respond to the problems brought about by demographic change should be launched as soon as possible, enabling the provider structure to prepare for the change in advance. Cooperation between upper secondary education, basic education and higher education institutions will be stepped up.

To make high-quality provision of education and the investments required by the operational reform possible, all education providers should have sufficiently financial capabilities for managing their educational mission. From the perspective of cost-effective organisation of the activities, the number of students per provider should be sufficient. Regional special issues must be taken into account, however, when assessing operating capacity and financing solutions.

Objective

The impact of upper secondary education will be enhanced and its accessibility promoted.

Actions

- A national strategy for the digitalisation of learning environments and digital learning solutions together with an action plan for implementing it will be produced. The strategy will include a section on operating culture and pedagogical development. In cooperation with higher education institutions, basic education and key stakeholders, a digital service ecosystem of education will be built and deployed. Its purpose will be supporting learning, lowering the threshold and expanding opportunities for participating in education, and improving the accessibility of education. Digital services will be developed in Finnish and Swedish.
- Shared use of the educational services, facilities, equipment and staff of vocational education and training, general upper secondary education and higher education institutions will be supported to meet the educational and competence needs of citizens and the labour market, to improve the operating conditions of education, and to promote the quality and accessibility of education. Operational collaboration between the different levels of education will be facilitated by means of incentives and, if necessary, by reforming legislation as well as the qualification and degree requirements and core curricula.
- With focus on the providers, the structure of actors will be reformed by supporting their ability to respond to sector-specific and national competence needs and the providers' and regions' specific objectives. Mergers between VET and general upper secondary education providers as well as the creation of education provider collectives that cover upper secondary education as a whole will be supported. Legislative and financial barriers to mergers between providers of general upper secondary education and VET will be removed, especially in areas where mergers are necessary to secure the quality of the activities and the accessibility of education and training. When drafting the legislation, the different objectives, missions and operating models of general upper secondary school and VET will be taken into account.
- To safeguard the operating conditions of upper secondary education and to secure accessibility across the country, a comprehensive, long-term reform programme will be launched. While the programme will have national objectives, special regional features will be addressed in its implementation. The solutions to be implemented may vary from one region to another,

and they may not all be implemented at the same pace. A roadmap will be drawn up for the reform, which will specify key measures needed to achieve the objectives, their schedules and the resource allocations. At minimum, issues that need to be addressed include the diversity and different pace of demographic change in different regions, regional population's level of education, the national languages, and the economic structure of the region. In connection with the reform, the ways in which the challenging cost structure in regions with a declining population should be taken into account in the criteria for determining central government transfers to municipalities for basic public services will be assessed.

Through the actions described above, by 2040

- The ways and forms of organising upper secondary education will be clearly different from what they are today. New technologies, pedagogical operating models and diverse learning environments will be used with a learner-centric approach and in ways that promote effective learning, and they will be continuously developed.
- Education providers may have a lightweight organisation in terms of physical facilities and equipment. Asynchronous implementations will promote customer-centric and flexible operation and good accessibility. This will also improve the quality of teaching and guidance.
- The number of both VET and general upper secondary education providers will go down significantly.
- Especially in areas affected by depopulation, both general upper secondary education and VET will mostly be provided by the same organisations.
- Financing and legislation will create a framework for the organisation of general upper secondary education and VET in all parts of the country and support appropriately the formation of upper secondary education entities and cooperation between them. Cooperation with higher education institutions will also be supported through financing.
- The region's population and accessibility of education will be taken into consideration in the allocation of financing.

3.3 Higher education institutions

One half of the cohort will complete a higher education degree in 2030. Transitions from upper secondary to higher education will be smoother. Equality in education will have improved. Higher education institutions will recruit experts to Finland. The goal

is to triple the number of foreign degree students at higher education institutions by 2030. Most of the foreign students will find a job and stay in Finland after graduation.

Finland will be the world's leading user of digitalisation in higher education and continuous learning based on it. Teaching contents will be opened up for as wide a use as possible. New practices and network-based cooperation will enable high-quality and accessible higher education and research. Stronger links will be forged between higher education and research.

Finland will raise its level of education and competence by providing more higher education

A higher level of competence and, in particular, top expertise are required to develop Finnish society and well-being. Globalisation of the economy, scientific advancement, new technologies and the transformation of work will lead to tougher international competition, emphasising the importance of competence. The work on the vision for higher education and research 2030 identified a need for more experts, high-quality higher education, and research and innovation in Finland, as well as for forging strong links with new knowledge produced in other countries.

One of the objectives is that by 2030, at least one half of all young adults in Finland will complete a higher education degree. To achieve this goal, an additional 100,000 new higher education degrees in total must be completed by 2030 compared to what can be achieved with the current intake numbers. Over the longer term, we can expect an increasing need for highly educated workers, while the cohort sizes shrink. The Government has already decided to increase the intake of higher education institutions by more than 10,000 places between 2020 and 2022. Achieving this goal will require new decisions on expanding education. Additionally, much faster transitions from upper secondary to higher education will be needed, as well as ensuring that a larger proportion of those who start in higher education also complete their degrees. This ambition will be supported by the fact that in the new financing model, higher education institutions will gain more benefits from degrees completed within the target period.

Every year, the number of applicants exceeds the intake by many times, which slows down the starting of higher education studies. Access to higher education can be speeded up by increasing the intake. Studies have found that providing for a larger intake is likely to be the most effective way of reducing inequalities passed on from one generation to the next.

Higher education institutions' student admission practices were renewed at the beginning of 2020. The effects of the reform will be monitored on a regular basis. Even after the reform, higher education institutions should keep developing certificate-based admission,

entrance examinations and other admissions procedures based on research evidence and in dialogue with upper secondary education actors. Regardless of the admissions procedure, higher education institutions should also describe the competence required of new students in their admission criteria.

Deciding on the student admission criteria, or the competence required of students in different fields, is part of the higher education institutions' autonomy. Universities emphasise competence produced by general upper secondary school studies in their admissions criteria. This is why the young person's choice between general upper secondary school and vocational education and training will affect their possibilities of applying for and being admitted to education in different fields. To enable smoother transitions and provide students who have completed a vocational upper secondary level qualification with better opportunities for further studies, it will be essential to increase their possibilities to complete general upper secondary school studies, especially in order to improve their linguistic and numeracy skills. Higher education institutions should also provide more transparent descriptions of what competence new students will be expected to have and why it is necessary.

Approximately four per cent of degree students are admitted to higher education institutions through the open university route. This route is of little significance, especially in fields with high numbers of applicants. However, the open university route could be developed into a more equitable and important way of demonstrating the competence needed in higher education.

The quality of higher education and learning have a significant impact on the competence level. A study which assessed higher education students' generic skills found that almost 60% of higher education students have no more than a satisfactory level of generic skills. Rapid changes in technology and the world of work stress the importance of generic skills further. To support improvement in the quality of teaching and learning, better use should be made of research evidence.

As the number of working-age people declines and Finland's dependency ratio deteriorates, migration and its ability to attract international experts will be increasingly important for the country's welfare and economic growth. The Government has launched a wide-reaching Talent Boost programme with the aim of recruiting experts. Higher education institutions are committed to supporting its objectives through their actions and service promises. The aim is at more systematic and frequent recruitment of the experts that Finnish society and working life need through higher education and research, in particular. International higher education of a high quality attracts new foreign students to Finnish higher education institutions. Another precondition for success in the competition for talent is streamlining students' and researchers' entry in Finland and

measures that make it easier for them to stay. The implementation of these objectives will be set out in a roadmap for education-based and work-based migration until 2035.

The benefits of education-based migration will not be achieved if foreign students' integration into Finnish society fails. The goal is that higher education institutions together with business life and the public sector will integrate foreign-language students into Finnish society and working life already before they graduate.

Education services export is business based on education, the education system or knowledge transfer. In educational institutions, higher education institutions and research institutes, education services export activities are also associated with other international activities and cooperation. Exporting the competence of higher education institutions and research institutes and other international activities can also strengthen Finland's role in solving sustainable development challenges and the global learning crisis. The fragmented nature of the activities and lack of cooperation remain an obstacle for growing education services exports. Joint development and cooperation aim for reliable practices and increased impact. The roadmap for education services exports will be updated to boost the volume and effectiveness of competence export as well as to increase cross-administrative cooperation and ensure its efficient organisation.

Objective

The level of education and competence in Finland will be increased.

Actions

- In 2030, at least 50% of all young adults in Finland complete a higher education degree. To achieve this goal, higher education intake will be increased until 2030. The emphasis in creating the additional places will be on fields and regions with a high level of education demand and employment, however taking into account flexibility in terms of demand fluctuations and labour market changes.
- To speed up the transition to higher education and improve its accessibility, the entire admissions procedure will be developed. Underpinned by research evidence, the higher education institutions will develop certificate-based admission, admissions based on entrance examinations and other procedures.
- The role and task of open higher education in higher education renewal will be clarified by drawing up an extensive long-term vision for its development.

- The higher education institutions will invest in continuous development of learning quality, and all students will be supported in learning generic skills with a goal-oriented approach. Efforts to improve the quality of education and learning will be supported by means of evaluations and through improved data collection. The Ministry of Education and Culture will periodically produce an overview of the state of higher education.
- Through broad-based cooperation, more foreign students and researchers will be recruited to Finnish higher education institutions. To meet the needs for experts, the annual number of new foreign degree students will be tripled from the current figures and reach 15,000 by 2030.
- International experts will be integrated into higher education institutions, Finnish society and the world of work in cooperation between the institutions, business life and public sector employers. Of foreign graduates, 75% will find a job in the Finnish labour market.
- To facilitate students' entry into the country, a national D visa will be introduced for students, and the possibility of amending the aliens legislation to support the permanent stay of graduates in Finland will be investigated.

Improved equality and equity in higher education

The student's gender and their parents' educational background, occupation and income level continue to affect young people's educational paths and, ultimately, determine who will apply for and be admitted to higher education. This selection is particularly prominent in certain fields of university education, including medicine and law.

Migrants, students with a migrant background as well as students with disabilities and functional capacity restrictions are underrepresented in higher education. It is more difficult for higher education graduates who speak a foreign language as their mother tongue to find employment in Finland than for those students who speak Finnish or Swedish as their mother tongue. From the perspective of integration into the world of work and society, the offer of advanced level courses in Finnish and Swedish in higher education institutions is inadequate. The rigid gender segregation in education and the labour market is also visible in higher education.

Common objectives and special measures for supporting the participation of underrepresented groups in higher education are currently lacking. Measures directed at everyone have not rectified the identified problems. Higher education institutions can influence underrepresented groups' opportunities to access higher education and success in their studies through their operating methods and practices.

The Ministry of Education and Culture has launched the preparation of an accessibility plan for higher education referred to in the Government Programme. As part of the work on this plan, accessibility of higher education is examined from the perspectives of socio-economic status, regions, gender, migrant background, ethnic groups, language groups and people with disabilities. The plan will address the differences between fields of education.

Students' well-being in higher education institutions will be promoted by supporting their ability to study. The ability to study affects the progress of studies, learning, and the well-being of the student and the community. Improving the provision of support and guidance for students, supporting study skills and improving the sense of togetherness in higher education communities are closely associated with improving the ability to study.

Objective

Accessibility and equality in higher education will be improved.

Actions

- The Government will decide on the objectives and guidelines for actions aiming to improve equality in an accessibility plan for higher education institutions by the end of 2021. The plan will examine the accessibility of higher education in general and, in particular, in fields which currently have an especially large proportion of students with an advantaged socio-economic background.
- In 2022, the higher education institutions will draw up their accessibility plans based on the common guidelines to support underrepresented groups' access to higher education and ability to complete their studies. The implementation of the accessibility plans will be monitored and evaluated as part of the guidance process between higher education institutions and the Ministry of Education and Culture.
- The package of measures includes defining the way in which services for identifying migrants' competence and providing guidance for them can be integrated into the higher education system.
- The Government will draft provisions on preparatory education for migrants to be added to the Universities Act.
- To improve students' well-being, the higher education institutions will invest in measures that promote students' ability to study and adequate direction to services.

New operating models will enhance the impact and quality of higher education

In the years to come, changes in the operating environment will make it necessary to review and develop the operating models and structures of higher education institutions. By international comparison, a significant amount of public money is invested in higher education and research in Finland. The aim is to guarantee efficient and cost-effective operating structures and models that promote equality for higher education institutions in a situation where digitalisation, internationalisation, demographic trends, transformation of work and the advancement of science and research are bringing about dramatical changes in higher education institutions' operating environment and society's expectations. This will require a systemic change in higher education institutions' operating practices, and legislation and other government guidance should enable efficient and cost-effective ways optimised for each region to organise the activities.

Digitalisation will make it possible for higher education institutions to operate nationally and internationally as an open networking community in which individual higher education institutions work together while each one is profiled in its areas of strength. This will offer new opportunities for improving quality. Effective cooperation and division of duties can significantly increase flexible study opportunities. With the new platform-like approach, a wide range of education will be offered not only to degree students but also to upper secondary students and all those supplementing their competence. When developing new solutions, the provision of opportunities to study in Swedish should also be ensured. The shared digital vision of the higher education institutions, which is supported by the Government, lays the foundation for this operating model.

Degree-awarding higher education will be offered extensively across Finland. Synergy benefits between support services, education and RDI have in many localities been sought through universities and universities of applied sciences operating as corporations. The growing needs of upskilling mean that continuous learning will be increasingly emphasised in the higher education institutions' educational mission. In particular, the current higher education system should be reviewed from the perspective of the drivers of change affecting structures and operating methods due to demographic trends, digitalisation, learner-centricity and internationalisation. Higher education structures should support the creation of diverse competence with different profiles for the needs of society and the labour market. Finnish higher education institutions' preconditions for international operation should also be promoted.

Through educational responsibilities, the Ministry of Education and Culture regulates the degrees and degree levels that can be completed in each higher education institution and the degree programmes the institution is obligated to organise. The aim of this regulation has been to secure the provision of study opportunities adjusted to the needs of society and the labour market and to create a national division of labour between the

higher education institutions. However, this system is too rigid to react to rapid changes in the labour market or the requirements of multidisciplinary. The system has also not supported sufficiently higher education institutions' profiling in their areas of strength. The goal is to develop regulation to lend better support for higher education institutions' ability to serve the competence and labour needs of society and help the institutions meet the requirements of diversifying science. An overview of the regulation on educational responsibilities is also essential in a situation where higher education structures are being reformed.

In some fields, such as the cultural field and the social and health care sector, the education paths are particularly long. Among other things, this is due to the degree structure and the limited possibilities of finding a job or upskilling without repeatedly pursuing degree education. When there is a shortage of highly educated experts, structures leading to inappropriately lengthy educational paths and overlapping education should be dismantled, and flexible provision of continuous learning opportunities should be developed.

Objective

The operating models and structures of higher education institutions will be reformed.

Actions

- By 2030, the higher education institutions will have implemented a uniform digital service environment in line with their shared vision. Higher education institutions will have a shared and accessible offering of digital learning opportunities which learners can use in both national languages and regardless of their educational background, labour market status or level of education. This entity will be based on information sharing, and it will open up the national information resources of learning to people and society. Relying on management by information, pedagogical solutions will be developed continuously, and the operating methods and models of higher education institutions will be updated.
- The Ministry of Education and Culture will reform the guidance and financing systems, ensuring that they will encourage universities of applied sciences, universities and the Academy of Finland to develop their operating methods and structures so that they lend better support for network-based cooperation, diverse and high-quality production of competence, and the transfer of new knowledge to society and the world of work.

- Regulation of the higher education institutions' educational responsibilities will be reviewed, the effectiveness of their degree structures will be improved, and overlaps and unnecessarily long educational paths will be eliminated.

Through the actions described above, by 2040

- The level of competence and education will have increased. Students who have completed an upper secondary qualification and who are interested in higher education will be able to access higher education without unnecessary gap years. International students and researchers will significantly bolster competence in Finnish society and world of work.
- Finland will have an open ecosystem of learning that benefits learners, research and innovation, and the world of work. Learners can use the higher education institutions' provision of open digital study opportunities flexibly as needed and have access to all information.
- The higher education institutions' updated structures and operating methods will enable network-based cooperation, which will ensure high-quality, versatile and accessible higher education and research in both national languages. The higher education institutions' profiles and the degrees they offer will vary based on the institutions' strengths.

3.4 Science and research-based knowledge

Finland will increasingly be known as an inspiring place to conduct research with world-class research environments. Top talent will move to Finland and enhance Finland's skills level. Education contents in Finland will draw on knowledge based on research.

Public research funding will also encourage private sector investment in expertise and RDI. In 2030, R&D investments will have increased to four per cent of the GDP, and their impact on Finnish people's well-being will have been proven by research.

Research and research evidence will influence society

The impact of new knowledge is the sum of many parts. Scientific research and other information produced by studies (including monitoring data, statistics and surveys) have a multidimensional impact on the routine activities of the Finnish welfare society. Scientific knowledge has been proven to play a role as a building block of education and worldviews, produce wealth and welfare, and serve decision-making and development of

practices. This is why cooperation of science and professional researchers with companies and other stakeholders in society has an impact on the creation of new products, services and practices. A recent example of this is the opening up of public and private research findings related to on the COVID-19 pandemic in digital format across Europe for both decision-making and scientific research. Scientists' ability to react quickly to the pandemic, for example in the area of vaccine development, is underpinned by prior long-term research of a high quality.

Independent Finland's success story underpinned by education enables a complex interlinkage between the creation and use of new knowledge and the entire education path on the one hand, and is a precondition for it on the other. Equitable and inclusive life in Finland contains the possibility of participating in both producing and using new knowledge. Science education and doing citizen science together, which have not lost their significance in today's world, are building blocks of worldviews and education and support life skills.

New knowledge generated by scientific research is the foundation of higher education in Finland. New knowledge is also transferred to the learning contents of other levels of education relatively quickly. Without undue emphasis on science as such, an operating model based on scientific thinking and action could be more actively integrated into the entire education path, starting with early childhood education and care.

Balanced investment in science across the education and research system will improve its productivity. A precondition for building an exploring Finland of the next generation is that a larger proportion of citizens, even those with no researcher training, have the skills needed for scientific research. The only way to make up for the shortfall caused by demographic changes is introducing more flexible practices for education-based and work-based migration and for staying on in Finland. We should also make more open-minded use of creative scientific, artistic and cultural activities.

Successful research depends on enthusiastic people and groups. To channel enthusiasm into successful research, up-to-date research environments and infrastructures, some of which are world class, will be needed to do well in international competition, or even to qualify for participating. This means balanced future investments in scientific research, in addition to private sector investments. Public research must be supported with public funding, and inducements and incentives for private sector investments should be created. Internationality is an important part of RDI and should be taken into account in its many different manifestations.

Efforts to increase RDI intensity and raise the bar in research have been launched

It is a well-known fact that Finland's competitiveness and the ensuing welfare are built on skills, research and innovations. National visions (Vision and road map of the Research and Innovation Council; Vision for Higher Education and Research 2030) have set the goal of increasing Finland's RDI intensity and raising the bar in RDI impact. The target is to permanently increase research and development expenditure to four per cent of the GDP by 2030. In order to achieve this target, a major part of the growth must come from the private sector. The level of challenge is increased by the fact that so far, public research actors (higher education institutions and research institutes) are only joined by a small group of leading companies making major investments in research, development and innovation (RDI).

The National Roadmap for RDI (2020) presents a plan for the actions needed to increase RDI intensity. What emerges as a crucial factor is safeguarding the availability of human resources, not only for producing new knowledge and expertise but also for capitalising on knowledge and competence produced elsewhere. This is also associated with having the necessary ability to tackle global problems through RDI, including climate change and pandemics. The principles and goals of sustainable development must also be taken into account in RDI. Other goals promoted by the updated RDI roadmap include a long time span and predictability of research funding. Cross-administrative coordination of RDI funding should be promoted, including funding organisations' financing instruments and other cooperation.

Promoting education and communication related to science is also part of RDI activities and society's educational development. Systematic science education creates preconditions for a higher level of education and competence-based growth. The objective of science education is to advance and expand citizens' problem-solving ability and understanding of the operating methods, structures and development of science.

Investments will be made in science, producing knowledge based on research, and enhancing the impact of research evidence

- by implementing the National road map for RDI. The planned actions contained in the road map comprise strengthening science and knowledge produced by research. This will require permanent additional inputs in the main titles of the Ministry of Education and Culture and the Ministry of Economic Affairs and Employment as well as the other ministries responsible for RDI in their sectors. The public inputs will create an operating environment that encourages both Finnish and foreign companies to invest in RDI in Finland.

Through the actions described above, by 2040

- The updated structures and operating methods of higher education institutions will enable network-based cooperation which, among other things, will ensure a high impact of science in society as well as versatile research and higher education.
- Research-based knowledge will be valued and used efficiently in different sectors of society. Creating innovations will be valued as part of this.
- Finland will be able to capitalise on knowledge produced in other parts of the world and global megatrends, including the potential created by digitalisation and artificial intelligence.
- Finland's public and private sector investments in scientific activities will have significantly improved the country's welfare.
- The possibilities of supporting the achievement of 2030 Agenda goals through RDI will have been improved.

3.5 Liberal adult education

Liberal adult education improves citizens' competence and well-being and supports equality, active citizenship and the integrity of Finnish society. Liberal adult education institutions are also important providers of education for migrants. Predictable financing is a precondition for high-quality development of liberal adult education. The national network of liberal adult education institutions will be used more effectively to promote the equality and accessibility of education, and the competence acquired through education will be identified and recognised.

Under the Act on Liberal Adult Education (632/1998, section 1), following the principle of lifelong learning, the purpose of liberal adult education is to provide education that supports the integrity of society, equality and active citizenship. Its objective is to promote people's versatile development and well-being as well as the realisation of democracy, pluralism, sustainable development, multiculturalism and internationalism. Adult education emphasises independent learning, communality and inclusion. Liberal adult education institutions include adult education centres, folk high schools, summer universities, sports institutes and study centres.

In 2020, there were 177 adult education centres, 76 folk high schools, 20 summer universities, 12 study centres, and 11 national and 3 regional sports institutes in Finland. According to Statistics Finland data, some 900,000 students participated in liberal adult education in 2019. The same student may have participated in several courses, and the total figure for participation in education was approx. 1.6 million. The sizes and provider

structures of these educational institutions vary. Some of them are very small. In terms of developing liberal adult education, sufficient financial stability of the providers to guarantee high-quality education in every situation is important.

The Ministry of Education and Culture confirms annually the number of completed courses used as the basis for calculating central government transfers within the limits of the budget. To enable the delivery and development of high-quality education, the providers must be able to anticipate the level of financing. When new educational missions are assigned to liberal adult education, the principle of predictable financing will make sustained development work possible.

Liberal adult education institutions have an important role in educating migrants. In 2018, instruction of literacy and writing skills and other integration training approved in migrants' integration plans was imposed on liberal adult education as a new mission. In its study published in August 2020, FINEEC found that liberal adult education institutions have successfully taken over the mission of teaching reading and writing skills. However, the financing for the new mission was based on a situation where the number of students was approx. 20% of the current figure. This hampers long-term development and influences the providers' possibilities of delivering education.

Studies have found that participants benefit from liberal adult education in many ways. It imparts skills needed in work and studies, improves well-being, promotes agency and supports an active role as a municipal resident, thus building competence, health, identity and social capital. Liberal adult education creates common good, for example by imparting general knowledge and ability, maintaining heritage activities, offering cultural experiences, providing internationality and multiculturalism education, promoting integration, activating pensioners, preventing loneliness and providing another opportunity to complement education. Liberal adult education has also been found to have positive economic impacts.²

Liberal adult education is organised in all Finnish municipalities. Liberal adult education as a platform of lifelong learning is available to all citizens. The mission of liberal adult education in offering non-degree studies is very broad and includes education delivered at different competence levels, from instruction in reading and writing skills to continuing education for higher education graduates. Liberal adult education can help respond to the needs of society and the labour market alike through tailored education. Liberal adult education also reaches a large number of people with partial work ability, older population and persons with a migrant background. The threshold for participating in

2 Manninen et al. 2019.

liberal adult education is low. Among other things, liberal adult education delivers literacy training for migrants and improves citizens' basic competence, including digital skills.

A memorandum of a working group appointed by the Ministry of Education and Culture (2019) contained a proposal for a competence-based description model for liberal adult education. The basic premise is that non-degree studies impart a wide range of skills to the participants that should be better and more easily identified. As a further step towards this reform, the working group proposed that the legislation on the Koski data repository be amended, making it possible to store data on the skills and knowledge gained in liberal adult education in it.

Actions

- Predictable financing will be ensured for liberal adult education.
- The adequacy and availability in both national languages of literacy training for migrants provided by liberal adult education will be ensured.
- The prerequisites of liberal adult education institutions for promoting, developing and delivering education for underrepresented groups will be improved.
- Identification and recognition of learning acquired through liberal adult education will be promoted. The legislation on KOSKI data repository will be amended, making it possible to register completed courses in it.
- The possibilities of including liberal adult education courses in the National Framework for Qualifications and Other Competence Modules will be examined.
- The national network of liberal adult education will be used more effectively to promote equality and accessibility in education. Among other things, educational institutions will also organise open higher education studies diversely in different subjects in areas where no higher education studies would otherwise be available.

Through the actions described above, by 2040

- Thanks to its accessibility, liberal adult education will channel and enable the population's learning, regardless of demographic trends and economic development. Through liberal adult education, people of different ages, different language groups and underrepresented target groups can become attached to society. Liberal adult education has an important role in building older people's skills, especially digital skills, and making meaningful pastimes available for them.

- Daily life and the world of work will merge on the learning platform of liberal adult education, which will operate in line with the sustainable development goals of 2030 Agenda.
- Liberal adult education will have an important role in fostering the entire nation's unity and competence levels.
- Cooperation among liberal adult education institutions as well as between them and other types of educational institutions and forms of education will be intensified.

3.6 Continuous learning – learning in working life

The competence level of working-age people will be raised and competence will be renewed to support the economic and social integration of citizens and to maintain the competitiveness of companies and the entire country.

The world of work and its skills requirements are changing rapidly, with globalisation, technological transformation and demographic structure as key drivers of change. A growing number of people will end up moving from one occupation to another.

Technological advances are destroying old tasks and occupations. The OECD has put the share of jobs that will no longer exist, or that will change significantly, in Finland due to automation in the next few decades at 33.6%. Jobs in which shorter training is required are the most likely to change and disappear. At the same time, new jobs will be created which, according to anticipation data, will mainly require a high level of skills. Meta and digital skills will grow in importance. If this change cannot be supported by developing upskilling, society may face a deteriorating employment situation for workers with a low level of education and, simultaneously, a shortage of skilled labour which will hamper economic renewal. And it also works the other way around: correctly targeted and dimensioned inputs in skills can significantly promote and support the digitalisation of society and the world of work, a transition to a green economy and other structural changes in the labour market.

In its report³, the Organisation for Economic Cooperation and Development (OECD) found that Finland has an advanced education system which offers versatile opportunities for competence development for people of working age at different levels of education. The levels of participation and competence are high. However, the system of continuous learning faces significant challenges related to the alignment of education and

3 OECD 2020b

training provision with labour market needs, which is seen in concrete terms as strong accumulation of education and the total exclusion of certain groups from competence development as well as a problem of labour force mismatch.

The parliamentary reform of continuous learning launched by the Government responds to the challenges described above, in particular. As the reform focuses on learning in the world of work and by working-age people, it is a phenomenon that extends to different sectors of society and administrative branches across a broad front. Learning takes place everywhere; alongside work and in association with it, through various organised training opportunities and in daily life – with an increasing overlap between all these forms of learning.

There are great needs for upskilling during careers, and responding to all continuous learning needs with public financing is not possible. This is why it is particularly important that the limited public resources for continuous learning are allocated in a manner that is appropriate for society and the labour market.

The vision of the parliamentary reform of continuous learning is that all citizens have the knowledge, skills and competence they need for a meaningful life, that everyone has the opportunity to proactively renew their competence, and that competence and working life will renew each other. The precondition for achieving these objectives will be long-term and comprehensive development work which will improve the targeting of existing continuous learning resources in a manner that supports societal change and the transformation of working life on the one hand and, on the other, develop new kinds of services and tools that promote continuous learning.

Actions

- Permanent structures and procedures will be created for the overall examination, long-term development and targeting of continuous learning as well as its evaluation.
- Upskilling in the workplace and by working-age people will be supported, among other things by developing tools and procedures for identifying and recognising skills acquired at work and in daily life, and by supporting SMEs' and micro enterprises' competence development networks.
- Possibilities for studying while working and looking after a family will be improved by opening up the current provision of study opportunities and creating new, flexibly targeted provision.

- A digital service package of continuous learning that includes applying for places, guidance, and identification and recognition of competence will be introduced by 2024.
- Guidance services for adults will be made accessible to everyone, and lifelong guidance will be developed comprehensively.
- The unemployment security system will be developed, providing the unemployed with better opportunities to study without losing their benefits.
- To promote equality in education and training, more low-threshold training and support measures, outreach activities and multiprofessional guidance and services will be provided.

The objective of the policies formulated by the parliamentary group on continuous training is that by 2040, through the actions described above

All citizens will have the knowledge, competence and skills required for the world of work and a meaningful life.

- The competence level of the population will rise.
- The employment rate will be higher.
- The number and proportion of citizens aged 25 to 64 with a higher education degree will increase, and the number and proportion of citizens aged 25 to 64 who do not have a degree or a qualification after basic education will decrease.

Everyone develops their skills and competence in the world of work.

- Everyone has opportunities to upskill and reskill proactively, so that they can develop in their work, find a new job and advance in their careers.
- Equity in participation will have increased.

Competence renews the world of work and the world of work renews competence.

- A skilled labour force supports sustainable growth, innovation and competitiveness, and consequently well-being.
- Employers will have skilled workforce.
- Work organisations will support learning.

3.7 Teaching, guidance and other staff

Teachers who are qualified and who update their competence (including early childhood education and care teachers) and other ECEC and education sector staff are the guarantee for equitable and high-quality education. The availability of teachers and other staff will be ensured by improving the knowledge base and anticipation and by scaling education to needs.

Education and teaching sector education and competence development during teachers' careers will be developed collaboratively, systematically and based on research evidence. Competence in special pedagogy, guidance and leadership will be strengthened. In addition, competence related to such areas as sustainable development, equality, linguistically and culturally responsive education, digitalisation, digital learning environments and well-being will be promoted.

Availability and competence of teachers and other education and teaching sector staff will be secured

Competent staff will be needed for increasing the level of education and upskilling the population, ensuring equitable opportunities for education, developing the quality of education and securing an effective education system. The leading principle of education policy is that qualified and skilled staff are the guarantee for good education and learning. The right of children, young people and adults to instruction and guidance provided by a competent teacher and other staff who meet the qualification requirements and renew their competence must also be safeguarded in changing operating environments.

The education of teachers and other education and teaching staff will be developed, their high quality will be secured and the education will be targeted as needed, taking into account both national languages and language minorities, especially Saami speakers. This will ensure and ascertain that access to high-quality education and teaching as well as support for learning and well-being throughout the education path in all parts of Finland will be equal and promote equality, also in the future. Changes in demographic development and education structures will guide the intake in education programmes for teachers and other staff, the definition of eligibility, and the allocation of financial resources. Due to these changes, the priorities of teacher education and the education of other staff in Finland must be reidentified with care. The importance of systematically anticipating the needs for teachers and other staff as well as for new anticipation tools will increase further. For example, new competence needs in the world of work and teachers' age structure will have a major impact on the sector-specific needs of vocational teachers. Anticipation needs to be underpinned by a better knowledge base and more effective data collection methods. The knowledge base of Swedish-speaking education should

be strengthened, ensuring that in all data collections, the Swedish-language ECEC and education system can also be examined separately. In addition, the collection of data on other language minorities should be developed, especially regarding Saami-speaking education and teaching staff. This data should be easy to access and use.

The availability of qualified teachers is also influenced by the attractiveness of teacher education. According to a recent report, young people's perceptions of teacher education and the teacher's work are very positive, and this provides a good start for maintaining their attractiveness. The teacher's work is appreciated and considered meaningful. The report suggests that ensuring a high level of education for teachers is a good way of maintaining the attractiveness of the education and profession. The report found that a key factor reducing the attractiveness of teacher education is the perception that teachers' working conditions have deteriorated. In addition to attractiveness, the degree to which teachers stay in their profession also affects their availability. It is important to secure the staff's possibilities for upskilling throughout their careers and to look after teachers' and other staff members' coping and well-being at work, which are also promoted by competent leadership.

The Decree on Qualification Requirements for Teaching Staff (986/1998) regulates the qualifications and status of teachers. In the future, it will be important to safeguard the availability of qualified teachers, both Finnish and Swedish-speaking ones, also in artistic and practical subjects, languages, science and special needs education, especially in sparsely populated areas. The Decree on Qualification Requirements for Teaching Staff should be examined from the perspective of the impacts of demographic development and new competence needs. However, there will be no compromise on the teachers' high qualification requirements. Provisions on the qualifications of teachers and other staff in ECEC are laid down in the Act on Early Childhood Education and Care (540/2018). The purpose of the eligibility conditions laid down in this Act has been to clarify the professional titles of staff members with different educational backgrounds and to increase the proportion of staff with a higher level of education in the personnel structure by 2030. A high standard of education will be ensured for teachers and other staff in the education and teaching sector.

In early childhood education and care, the availability of qualified staff, including Swedish and Saami speakers, is currently a problem locally and nationally. In particular, there is a shortage of qualified ECEC and special needs teachers. The staff shortage is exacerbated by retirements, new eligibility requirements and the fact that the ECEC sector is not seen as attractive. The availability of staff in growth centres is affected by growing child numbers resulting from positive net migration and increased participation rates. Areas with negative net migration may also experience difficulties related to the availability of both staff and services. For several years, the Ministry of Education and Culture has

granted additional financing to universities to increase the intake in programmes for ECEC teachers and to develop possibilities for blended studies.

Objective

The availability of qualified teachers and other staff will be secured.

Actions

- The knowledge base concerning teachers and staff will be improved, also addressing the special features of Swedish-language education and other language minorities in the data collection.
- The need for teachers, early childhood education and care staff and the guidance, support and student welfare staff needed in educational services will be anticipated using a systematic and clear operating model, taking both national languages and other language minorities into account.
- The education of staff in the education and teaching sector will be scaled to needs. Particular attention will be paid to the adequacy of intake places for ECEC staff. The need to assess the student-teacher ratio in primary and lower secondary education will be examined.
- The regulation on teachers' qualifications will be developed in cooperation with the stakeholders to meet the needs of all levels of education by 2030. There will be no compromise on the high qualification requirements for teachers.
- Flexible methods that support continuous learning will be used to complement the skills and qualifications of teachers and other staff by enabling the complementation of qualifications, blended learning and teachers' double qualifications at different stages of their careers.

Teacher education and the competence of education and teaching staff will be developed systematically, collaboratively and based on research evidence

A competent and educated Finland expects teachers, ECEC staff and all others working in educational services to have a high-quality initial education and opportunities for continuous learning during their careers. Development of education programmes in the education and teaching sector will be underpinned by research.

The initial education, introductory training and upskilling during the careers of teachers are developed in extensive cooperation in Finland. The Teacher Education Forum has proven its effectiveness as an inclusive and successful way of renewing and developing

teacher education and building cooperation. Those working in, and all stakeholders of, teacher education participate in a dialogue and are committed to joint decisions. Similarly, the ECEC Education Development Forum has brought together the providers of education for ECEC staff and ECEC providers as well as other stakeholders to promote educational cooperation. The Forum has produced common recommendations for developing the education programmes and cooperation across a broad front. An action plan will be drawn up on the basis of the recommendations.

In recent years, policies for developing teacher education have been formulated as part of the national Teacher Education Development Programme. The programme's strategic policies point the direction for teachers' education and continuous learning. The policies draw attention to the continuum of teachers' initial education and upskilling during their careers as well as the importance of competent leadership in turning educational institutions into learning and developing communities. The strength of Finnish teacher education lies in the fact that the initial education is strongly underpinned by research. The evidence-based approach to developing teachers' competence during their careers and continuous learning should be strengthened. The development of teacher education has been supported by several projects that implement national policies.

Teachers and other staff in the education and teaching sector need upskilling related to encountering different learners, delivering support for children, school attendance and studies, equality and human rights issues. Competence is also needed in linguistically and culturally responsive education and teaching, guidance of children, young people and adults, digital pedagogy as well as the development and use of new learning environments needed for distance teaching. Learners will increasingly need personalised teaching, support and guidance. The preconditions for promoting well-being, bringing an increasing number of children within the scope of early childhood education and care, expanding compulsory education and promoting employment include strong, goal-oriented and timely support and guidance of a high quality for children's, young peoples' and adults' learning and studying. Cooperation between different occupations is essential. Timely and proactive support should be strengthened through sufficient resources and an adequate number of special needs teachers, guidance counsellors, school social workers and psychologists and other student welfare personnel at all levels of education. Leadership competence plays an important role in promoting high-quality education. Leadership competence and training should be developed systematically and based on research.

Objective

Education programmes and staff competence in the education and teaching sector will be developed.

Actions

- Cooperation on the development of education and teaching sector education programmes will be intensified by establishing a development forum for this purpose. The activities of this cooperation forum will cover issues related to education programmes in the education and teaching sector and their development from ECEC to higher education. The forum will serve as a structure for the development of teacher education and other education sector programmes, interaction and cooperation. It will point the direction for the evidence-based development of teacher education and programmes for other education sector staff as well as competence development during their careers.
- The education programmes for education and teaching sector staff will respond to future competence needs. The staff's competence related to special pedagogy, guidance and leadership, sustainable development, equality and equity, linguistically and culturally responsive education and teaching as well as digitalisation and digital learning environments will be improved. The systematic development of initial education and the continuum of continuing education will be ensured.

3.8 Art and cultural education and basic art education

Art and cultural education integrated into the education system, the teaching of artistic and practical subjects, and basic art education are based on the understanding that aesthetic perception and creative expression are a central part of being human. Skills in this area are also important in the information and knowledge society, which is why they should be addressed in education development. These skills can also be promoted through recreational activities organised in connection with the school day. The availability of basic art education in different regions and for various population groups as well as in both national languages and different fields of art should be supported.

Artistic expression and aesthetic perception have always been part of the educational mission, ranging from the teaching of artistic and practical subjects in the basic education stage to educating professionals in the field of art and culture in vocational education and training and higher education. As the information society advances, art and culture have increased their importance, not only in citizens' free time but also in the world of work and production industries.

Education in arts, culture and cultural heritage that begins already in early childhood education and care promotes the establishment of a personal relationship with art and culture, strengthens creativity, life skills and understanding of life as well as promotes active citizenship and broad knowledge and ability. Municipalities can draw up a cultural education plan as part of curricula and ECEC plans, or the plan can cover all age groups. Around 114 municipalities have prepared such plans. A wider introduction of cultural education plans in municipalities should be encouraged. This can be facilitated by good cooperation between education, cultural and youth services.

The teaching of artistic and practical subjects in schools contributes to the diverse development and use of children's and young people's abilities, which supports the achievement of the learning outcomes and later also the competence requirements of working life. Basic art education reinforces these impacts on children and young people who participate in it. In basic art education for adults and liberal adult education, art and cultural education and activities also reach the adult population and support the individual's well-being throughout their life.

Historically, art and cultural education and teaching have played an important role in not only schools but also recreational and NGO activities. In recent years, the importance of children's and young people's recreational activities in their lives and the support they lend to the educational objectives of the school have been rediscovered, and the provision of such activities has been increased significantly. In addition to art and cultural activities, physical activity is also organised. The so-called Finnish model, which is currently being developed, will lay a good foundation for developing operating models and cultures for recreational activities in connection with school for well into the future.

Instruction in the field of art and culture is provided at different levels of education. It not only turns out professionals of this field but also increases the potential for innovation and employment in different areas of economic and social life.

Under the Basic Art Education Act (633/1998), basic art education is education in different fields of arts primarily offered to children and young people which imparts skills in self-expression and enables the student to continue in vocational and higher education in the relevant field of art. The instruction is based on core curricula issued by the Finnish National Agency for Education. Core curricula have been adopted for two syllabuses and nine different fields of art. In the school year 2019–2020, approx. 128,000 students attended basic art education. Between 1993 and 2019, the number of students in basic art education has almost doubled. Basic art education is provided in about 430 educational institutions, some of which are liberal adult education institutions. In 2020, 139 educational institutions were entitled to central government transfers for basic art education paid per teaching hour. Providing opportunities for goal-oriented artistic and

cultural education covering different forms and fields of culture and art is also set down as one of the local authorities' duties in the Act on Cultural Activities in Local Government (166/2019).

Basic art education is part of cultural services, which is why its development serves the needs of both education and cultural policy. The aim is to make cultural services more accessible and to improve the operating conditions of culture. To improve the accessibility of basic art education and also cultural and other services, changes in the demographic structure of society should increasingly be addressed. These changes include the presence of migrants and the range of linguistic and cultural minorities in Finland.

Development measures must be underpinned by a reliable and comprehensive knowledge base. In recent years, the knowledge base of basic art education has been brought up to date by means of separate studies⁴ and by including this form of education in several data collections⁵, but the volume of regularly collected national, qualitative and quantitative statistical data on basic art education continues to be small. Strengthening the knowledge base of basic art education and systematic data collection will support decisions on developing basic art education.

Recent reports and the statements issued on them indicate a need to develop the financing of and legislation on basic art education. It is generally considered important that, when reforming and strengthening basic art education, the special needs of each field of art are taken into account. A report⁶ by the Finnish National Agency for Education found that the key development challenges of basic art education are related not only to financing but also to administration, structures and operating culture as well as changes in the operating environment and society. Shrinking cohort sizes, being located in a municipality with negative net migration, and activities that compete with basic art education are some of the issues related to safeguarding the accessibility of basic art education over which the actors are concerned.

Objective

Art and cultural education and basic art education will be supported.

4 Luoma 2020; Suominen 2019

5 National teacher survey 2019. Survey on municipality of residence reimbursement for pre-primary and basic education 31 December 2018 (21 January 2019, TK-41-51-19); Culture in local government activities 2019 data collection, Finnish Institute for Health and Welfare.

6 Luoma 2020.

Actions

- The needs of arts, culture and cultural heritage education will be addressed in education development measures.
- The structures of basic art education and cooperation will be developed; availability of basic art education will be improved regionally and in different fields of art, for different population groups and in both national languages; and, if necessary, a reform of the legislation on basic art education will be launched.
- The knowledge base of basic art education will be built up, pedagogy will be developed, and the identification and recognition of competence acquired in basic art education will be promoted.
- Artistic, cultural and physical activity in connection with the school day will be promoted following the Finnish model.
- The municipalities will be encouraged to prepare cultural education plans.

3.9 Student financial aid

Student financial aid will be developed to promote equitable opportunities for education. Full-time study and completion of degrees within the recommended period will be enabled by means of sufficient student financial aid. The objectives of the social security reform will also be taken into account when developing student financial aid.

The purpose of student financial aid is to secure students' livelihoods while they are studying. The study grant and state guarantee for a student loan together with the housing allowance comprise their basic income. An evaluation report on the adequacy of basic social security in 2015–2019 (Finnish Institute for Health and Welfare 6/2019) indicates that student financial aid together with a student loan are sufficient to cover reasonable minimum consumption.

The study grant is an index-linked benefit. Its amount is determined by the student's age, level of education attended, housing arrangements and family situation, and it accounts for about one quarter of the maximum amount of support. The average study grant (approx. EUR 220/month) covers the normal meal costs of an independently living student. This means that the student needs additional spending money to cover the rest of their living costs. In 2019, approximately 315,000 students received a study grant, of whom around 60% studied at a higher education institution and 40% at other educational institutions. The estimated expenditure on student financial aid in 2019 is about EUR 643 million, of which amount the expenditure on study grants accounts for around 70%. The

impacts of recent reforms on student financial aid should be assessed to support future development work.

Market-based student loans with a state guarantee account for a significant share of the student financial aid (EUR 650/month). A student loan should be a safe and motivating form of financing the studies. It emphasises the nature of education as an investment. The system involves an incentive to complete the studies briskly, as the state may pay back part of a loan taken out by a student for their first higher education degree directly to the bank (student loan compensation) if they graduate within the target period. The share of the student loan compensation in the expenditure on student financial aid was approx. EUR 67 million in 2020. The impact of the student loan compensation on study times should be assessed, while also looking at the needs to develop the compensation system.

The interest on a student loan can be paid as an interest subsidy to a borrower with a low income, which makes the student loan an even safer option. If the borrower fails to pay the interest or make repayments to the credit institution, the state will repay the student loan to the credit institution as the guarantor. However, the borrower will be obliged to repay to the state the amount paid to the credit institution. The repayment of the guarantee may be waived in certain situations if the borrower does not have a sufficient income. The heavier emphasis on loans in student financial aid has increased their uptake in recent years. The number of loans that the state ends up paying as the guarantor is also increasing. In particular, this is linked to employment trends. In 2019, 179,000 students took out a student loan, which represents less than 60% of student financial aid recipients. The average debt of a person with a student loan is around EUR 11,000. The total student loan portfolio of banks amounted to about EUR 4 billion at the end of 2019.

A general housing allowance paid per household covers the reasonable housing costs of students who have moved out of the family home. The co-payment of a low-income student is at least 20% of the housing costs. Housing allowance is regularly paid to around 140,000 student households, whose average housing allowance is approximately EUR 320 a month. In 2019, EUR 564 million of general housing allowance was paid to student households.

The purpose of the school transport subsidy is to promote the accessibility of upper secondary education, and the system mainly compensates the travel costs of students in vocational education and training and general upper secondary education who regularly travel a long distance to school and incur significant travel costs. In 2019, 60,500 students received school transport subsidy, which amounted on average to EUR 710 per recipient. The purpose of the school transport subsidy is to secure access to education.

Student financial aid is a cause-related and individual benefit granted against a consideration. In addition to needing financial support, a key condition for eligibility is being a full-time student and making progress in the studies. Clarifying the benefits system and forging a stronger link between benefits and services is a particular focus area in the social security reform. The need to reform the student financial aid system will also be examined in the context of the social security reform and in connection with promoting employment and continuous learning. The integration of student financial aid and other social security will proceed in stages. The problems to be solved in this integration are, in particular, related to young people's income security, the entire system of benefits paid to students while they are attending education, and housing allowance.

Student financial aid helps raise the level of education, promote equality in education, and support the availability of skilled labour.

Objective

The student financial aid system will be developed to promote equitable opportunities for studying.

Actions

- The level of student financial aid will be secured by index-linked increases.
- The adequacy of student financial aid will be improved as a more prominent form of support for full-time study. To the extent this is allowed by general government finances, student financial aid will be increased, increases will be targeted at those most in need of support (students no longer living in the family home, students with children, those studying abroad) and the loan guarantee will be increased.
- The structure (for instance, tying it to a Bachelor's and a Master's degree) and level of student financial aid will be examined as part of the social security reform. Key objectives include supporting full-time studies and progress in studies and, consequently, employment.
- The student's personal income limits will be increased to help combine work and studying.
- The parents' income limits, which affect student financial aid, will be reviewed at higher income levels to avoid a more stringent approach in the means-testing process.
- Should interest rates go up significantly, the terms of the interest subsidy can be improved, or the introduction of an interest hedging instrument from central government funds could be considered. Increase in the number

of loans that the state ends up paying as the guarantor will be prevented by supporting borrowers with a student loan.

- Increasing the number of months for which a student is eligible for student financial aid and introducing more flexible conditions for the student loan compensation will be examined to promote continuous learning.

3.10 Status and objectives of and actions related to Swedish-language education

Under the Constitution, Finland has two national languages, Finnish and Swedish. The right to maintain and use your mother tongue is part of basic security and of being understood and heard. Finnish legislation safeguards the right to use both national languages and the right to Swedish-language education. In practice and everyday situations, these rights are not always realised.

Education has a key role in building an individual's identity and a cultural task. Education in Finland must be of a high standard and accessible in both national languages without discrimination throughout the education path from early childhood education and care to higher education.

One of the tasks of the Swedish-language education path is to ensure the linguistic development of Swedish-speaking children and young people as well as bilingual children and young people who speak both Finnish and Swedish as their mother tongue. Strong language skills are a prerequisite for the development of cognitive thinking skills and all learning. Good language skills ensure that children, young people and adults have sufficient capabilities for studying and further studies.

Mother tongue and literature as a subject and the language of instruction in different subjects have a key role in Swedish-language education. The language minority faces higher language proficiency requirements in studies, work and daily life than the Finnish-speaking population.

Digital competence should be promoted and digital learning materials and flexible, versatile learning environments should be developed equally in both national languages. Sufficient resources at all levels of education are needed to develop high-quality Swedish learning materials that meet the requirements of the curricula.

Swedish-language education helps develop linguistically and culturally sensitive education, thus supporting the learning of all children and young people regardless of

their linguistic or cultural background. The linguistic development of children and young people who speak two or more home languages should also be ensured in education. Plurilingualism has become commonplace. The number of plurilingual pupils and students in Finland is increasing constantly. In the future, Swedish-language education should be an attractive alternative for plurilingual families. It is appropriate to offer an effective Swedish-language education path to children and young people with a migrant background who settle in any of the bilingual regions in Finland.

Higher and upper secondary education ensure that sufficient numbers of Swedish-speaking experts and professionals will be available for key tasks in society. Higher education institutions should offer versatile education and opportunities for doing research in both national languages. Higher education in Swedish should be of a high quality, and it should respond to and influence the drivers of change in the operating environment on par with Finnish higher education. In higher education, the realisation of students' linguistic rights is undermined by practical problems related to, for example, the student's possibility of writing their thesis in their mother tongue.

Equal provision of language instruction is not implemented adequately in Swedish-language education. The distribution of lesson hours for Finnish lessons and the structure of instruction laid down in the Basic Education Decree (1998/852) do not address sufficiently the basic linguistic skills of Swedish-speaking students and their needs for language learning. For example, Swedish speakers do not have a practical possibility of choosing the advanced syllabus in more than one foreign language, as Finnish is typically selected as the first advanced syllabus language.

The Act on Early Childhood Education and Care (540/2018) emphasises the promotion of equality in education and the prerequisites for the growth and learning of all children. Linguistic development and the child's mother tongue play a key role in this. High-quality early childhood education and care in Swedish plays a key role as part of the Swedish-language education path and its successful beginning. Supporting ECEC providers is important to fulfil in practice the obligation to provide ECEC services in their local day-care centres or groups for children whose parents have selected a Swedish-language education path for them.

Objective

Through common objectives and measures jointly implemented by different actors, more equal and inclusive Swedish-language education of a higher quality will be provided at all levels of education.

Actions

The objectives and measures set out in this report concern education and research in both national languages. Swedish-language education will be developed in parallel with its Finnish-language counterpart to promote equitable study opportunities and equal and high-quality education as follows:

- Flexible Swedish-language study paths of a high quality extending from early childhood education and care to higher education will be developed. Swedish-language education paths will be reinforced and developed also for children, young people and adults arriving in Finland as migrants. Regional differences and special features will be taken into account.
- The overall coordination of Swedish-language education at the national level will be improved. To improve the coordination of Swedish-language education, the Ministry of Education and Culture will appoint a public servant tasked to ensure that the special features of Swedish-language education are addressed when developing education. The knowledge base needed for decision-making will be built up by taking into account the possibility of examining separately ECEC and education delivered in Swedish in national and international data collection.
- Cooperation models and networking structures for the delivery of education will be created to ensure the availability of professionals and flexible study paths. Education and research will be developed between different levels of education. Nordic cooperation will be stepped up.
- Proficiency in mother tongue and the other national language will be improved and developed, including instruction in native-level Finnish and Swedish. Teachers' competence will be strengthened.
- In cooperation between different actors, the availability of Swedish-speaking professionals will be ensured by providing for a sufficient intake, especially in fields with labour shortages.

3.11 Learning and learning paths for those with a migrant background

The educational reforms decided in the Government Programme with the aim of increasing equality will promote the learning and studying of learners with a migrant background (children, pupils or students whose mother tongue or home language is other

than Finnish, Swedish or Saami⁷). In particular, these reforms include the expansion of compulsory education, developing guidance counselling, identification of prior learning in the system of continuous learning, and measures targeted at underrepresented groups.

Learners with a migrant background are not a homogeneous group. Some children and young people progress smoothly in their studies along with the native population after learning Finnish or Swedish, while others need more support. The needs for and delivery of targeted measures at different levels of education are associated with the age at which the learner arrived in Finland, in particular.

The actions presented in this Report related to early childhood education and care, pre-primary, primary and lower secondary education, upper secondary education and higher education will improve the learning opportunities and smoothen the learning paths of all groups that are currently disadvantaged. Some people with a migrant background additionally need targeted measures at different levels of education. Development needs common to the different levels of education include language sensitivity in teaching and communication as well smooth transition points in education. In early childhood education and care, the challenge lies in increasing the participation rate and supporting language learning. Actions that improve the ECEC participation rate also target many migrant families and encourage children's participation in ECEC: client fees will be reduced and, over the long term, abolished (at minimum 4 hours of free ECEC per day). When assessing the impact of the home care allowance and the municipal supplement practices, particular attention will be paid to families with a migrant background.

School success is directly linked to success in further studies, which is why basic education that imparts adequate basic skills (literacy, numeracy) and abilities is essential from the perspective of integration. The poorer learning outcomes of learners with a migrant background are, in particular, explained by the age at which the learner arrived in Finland and the resulting poor language skills at the final stage of comprehensive school. The parents' socio-economic background is also important. The most difficult situation is faced by young people who came to Finland at the final stage of basic education and whose educational foundation is inadequate. By reviewing the legislation on early childhood education and care, pre-primary education and basic education, clearer possibilities to monitor, guide and coordinate the equitable realisation of children's rights and delivery of services to a high standard will be ensured. The reformed financing system would address more effectively the divergent conditions in municipalities in terms of the impacts of demographic development, quality of services, non-discrimination and accessibility, support needs, and the needs of foreign-language speakers. The right to learn

7 FINEEC 2015

development programme draws attention to safeguarding the learning prerequisites of children and young people with a migrant background, especially regarding the linguistic and other learning capabilities of newly arrived students. The actions to be prepared on the basis of this programme will also help children with a migrant background get through the transition points of education. As part of expanding compulsory education, transition point education will be updated. The new preparatory education for general upper secondary (TUVA) will also support the progress of students with a migrant background aiming for not only vocational education and training but also general upper secondary education.

To create a high-quality study path of Finnish/Swedish as a second language, development programmes will be launched at all levels of the education system. In connection with the legislative reform, financing for positive discrimination will be put on a permanent footing.

These actions will improve the education system's prerequisites for evening out the impacts of social inequalities and support the learning and equitable learning paths of learners with a migrant background, also giving young migrants the opportunity to grow to their full potential in the school system. The mandatory quality criteria for ECEC, pre-primary education and primary and lower secondary education defined to promote the quality and equity of services will also address the special needs of people with a migrant background and other people in need of support.

It is more common for students with a migrant background than for native Finnish students to drop out of upper secondary education. Adequate teaching, guidance and support are particularly important for students with a migrant background in upper secondary education. To secure this support, the personalisation of vocational education and training will be developed further, making it possible to introduce a model of positive special treatment compatible with the nature of vocational education and training. Education providers should also have sufficient capabilities to provide teaching and guidance that meet the needs of students with a migrant background, and the monitoring of education delivery will be improved to address the needs for teaching, guidance and other support better. Extending compulsory education and the free education associated with it, a new transition point education entity and guidance provided while young people are completing their compulsory education will promote and even out the learning and learning paths of young people with a migrant background compared to the native population.

Basic skills and language proficiency are important for making progress in studies. Enhanced support for developing them will be provided by encouraging the more efficient utilisation of studies that support study skills, also by developing financial

incentives if necessary. This will help provide more efficient support for the vocational studies of those who have arrived in Finland as adults.

For students with a migrant background, an educational institution that offers positive experiences of togetherness, communality and inclusion is a vital resource. Such experiences should be secured for all students in general upper secondary education and vocational education and training. Special attention will be paid to students with a migrant background. All upper secondary level students must be guaranteed access to student welfare services that meet their needs and opportunities for participating in activities that support their mental and physical well-being in the educational institution community without discrimination and regardless of their background in all parts of the country.

Students with a migrant background are underrepresented in higher education. Access to higher education will be supported by integrating service activities related to identifying migrants' competence and providing them with guidance into the higher education system and by adding provisions on preparatory education for immigrants to the Universities Act. Higher education institutions' accessibility plans, which concern all underrepresented groups, will also support students with a migrant background in accessing and completing higher education.

In line with the Talent Boost roadmap work, higher education institutions will work together to recruit more foreign students and researchers to Finnish higher education institutions and integrate international experts into these institutions, Finnish society and the world of work. Students' entry to the country will be streamlined, and graduates' possibilities of staying in Finland will be improved.

Finland can benefit from immigration in many ways. In a number of sectors, the shortage of labour is already difficult or even impossible to overcome by domestic forces, and as a result of demographic change, the difficulties will increase in the future. The availability and skills of labour force are a key criterion for investments. Diversity will enrich society in many ways from business to RDI, physical activity, art and culture.

3.12 Learning for people with disabilities

Finland ratified the UN Convention on the Rights of Persons with Disabilities in 2015. The Convention imposes an obligation on States Parties to ensure that persons with disabilities are not excluded from the general education system on the basis of disability and that children with disabilities are not excluded from free and compulsory primary or secondary education on the basis of disability. In addition, the States must ensure that

persons with disabilities can access an inclusive, quality and free primary education and secondary education on an equal basis with others in the communities in which they live. The Charter of Fundamental Rights of the European Union also recognises the right of persons with disabilities to benefit from measures designed to ensure their social and occupational integration.

At the end of 2019, a total of 264,700 people received disability benefits paid by the Social Insurance Institution, accounting for 4.8% of the total population. The number of persons receiving disability benefits intended for persons under the age of 16 was 36,600 at the end of 2019. This number has increased by 10% since 2010. However, the number of benefit recipients is not a straightforward reflection of the number of persons with disabilities.⁸

While no comprehensive data are available on the level of education of people with disabilities, it is estimated to be significantly lower than that of the rest of the population. Transitioning to post-basic education is more challenging for young people with disabilities than for other young people, and people with disabilities are underrepresented in higher education. Education belongs to everyone, however, and it is of great importance to people with disabilities, both as a factor that promotes their employment and independence and as an intrinsic value. Continuous learning creates new opportunities for those who have lost their capacity for work but wish to return to the labour market, those who are at risk of incapacity for work in their current jobs, and those with partial work ability.

The Non-Discrimination Act (1325/2014) prohibits indirect and direct discrimination on such grounds as disability. An amendment to this Act, which entered into force at the beginning of 2015, extended the obligation to promote equality to not only the authorities but also education providers, educational institutions and employers. The Act also lays down an obligation to make reasonable accommodations; a refusal to make such accommodations construes discrimination. The accommodations are needed to enable a person with a disability to use the authorities' services equitably, to attend education and training, find work and have access to generally available goods and services, and to cope with tasks at work and progress in their careers. Reasonable accommodations in the provision of education include those a student needs due to their disability in order to be admitted to education and to progress in and complete their studies.

Accessibility is an important precondition for the independent living and full participation in all areas of life of persons with disabilities. In the traditional sense, accessibility refers

8 <https://blogi.thl.fi/vammaisia-on-tyoikaisista-suomalaisista-7-tai-29-prosenttia/>

to taking all types of people into account in the physical environment, including the design and construction of the built environment. Accessibility of buildings at all levels of education and in liberal adult education should be continuously assessed and developed. In a broader sense, accessibility refers to a physical, psychological and social environment in which everyone can act equitably with others, regardless of their characteristics. Inclusive thinking means that rather than a learner with disabilities adapting to their study environment, the environment adapts to them.⁹ More inclusive solutions have been introduced in education, and children with disabilities should not be primarily directed to special schools or classes without valid grounds. To realise inclusion, sufficient support for learning and school attendance as well as student welfare services should already be ensured in the local school.

Under the Act on Disability Services and Assistance (380/1987), a student with a disability may be eligible for the transport services they need for study trips, a right to use a publicly funded personal assistant when studying, and various interpretation services. However, shortcomings in the implementation of these services are believed to occur, and the services are currently delivered differently in various parts of the country. Students with disabilities may have to fight harder than others for their rights related to studying.¹⁰

Several actions related to early childhood education and care as well as primary and lower secondary education proposed in the Education Policy Report would also improve the status of children with disabilities equitably in all parts of Finland. Timely support and low-threshold services sufficient to secure children's and young people's development, learning and well-being will be ensured by legislation. An encouraging school culture in which diversity is accepted will be supported, well-being and inclusion in ECEC and school communities will be promoted, and bullying will be prevented by establishing a preventive cross-administrative network of professionals as part of the school culture in ECEC and schools. The delivery of student welfare services and the adequacy of their scaling will be monitored and evaluated. Clear and binding quality objectives will be set for the provision of early childhood education and care and pre-primary and basic education, and researchers, education providers and stakeholders will be extensively involved in the preparation of these objectives.

The aim of extending compulsory education is that every young person will complete an upper secondary qualification. This objective also gives people with disabilities better possibilities for attending education and finding employment. By developing operating methods and, if necessary, legislation and financing systems, student welfare services that

9 Pietilä & Laitinen 2011

10 Rautiainen & Korhonen 2019

meet the needs of upper secondary level students and the possibility of participating in activities that support their mental and physical well-being in the educational institution community will be secured equitably in all parts of the country. Students' well-being will be improved by promoting participation and educational institution democracy as well as by piloting low-threshold practices. In vocational education and training, personalisation will be developed, making it possible to apply the model of positive discrimination. Experiences described in reports on the three levels of support will be taken into account in the preparations.

In higher education, the preparation of national guidelines for the objectives and measures of accessibility plans (accessibility in a broad sense) and the drafting of institution-specific guidelines is an important policy. These plans will support underrepresented groups in accessing and completing higher education studies. The Report also outlines actions that promote students' ability to study and sufficient direction to services to improve their well-being.

A comprehensive objective applicable to different levels of education in the Report is the utilisation of digitalisation and new teaching technologies extensively and innovatively to support learning. When developing digital learning environments, accessibility must also be ensured in the sense referred to in the Act on the Provision of Digital Services (306/2019). In this Act, accessibility refers to the principles and techniques to be followed in the design, development, maintenance and updating of digital services in order to make them more accessible to users, especially persons with disabilities. In development efforts, it is important to recognise that persons with disabilities are not a homogenous group.

According to a working group of the Ministry of Social Affairs and Health and the Ministry of Economic Affairs and Employment, the coronavirus crisis has put children with disabilities and their families under additional strain, which is why special attention should be paid to providing support and services for these families, looking at the overall situation of the family. In the families of children with disabilities, some parents have been forced to take time off work because of the need to deal with their children's distance education and other daily routines.¹¹ Monitoring and support measures will also be required for recovering from the coronavirus crisis and remediating its effects in the years to come, paying particular attention to those in the most vulnerable position.

11 Ministry of Social Affairs and Health and Ministry of Economic Affairs and Employment 2020

3.13 Saami-language education

The Saami are an Arctic indigenous people. Of the Saami languages spoken in Finland, Northern Saami is endangered, while Inari Saami and Skolt Saami are seriously endangered. Under the Constitution of Finland (731/1999), the Saami have the right to maintain and develop their language and culture throughout the country. The Saami Homeland in Finland comprises the municipalities of Enontekiö, Utsjoki and Inari as well as the reindeer herding cooperative of Lappi in the northern part of Sodankylä municipality. More than 60% of the entire Saami population in Finland, and the majority of Saami children under the age of 10, live outside the Homeland. The linguistic rights of the Saami are laid down in the Sámi Language Act (1086/2003).

All three Saami languages spoken in Finland are used in early childhood education and care, pre-primary education and basic education, and all of them are taught as mother tongue and foreign language subjects. Children who speak Saami as their mother tongue are entitled to early childhood education and care in the Saami language across the country. Saami speakers who live in the Saami Homeland also have the right to attend basic education in Saami. The teaching must be mainly provided in Saami. Education providers may also organise more extensive instruction in the Saami language. The Saami have the right to attend instruction of their mother tongue in the Homeland. Saami may also be taught as a mother tongue outside the Homeland, both in basic and general upper secondary education. The ultimate decision is made by the municipality. The Saami languages and culture are also taught at university level.

The objectives for developing early childhood education and care and pre-primary and basic education set in the Education Policy Report are equity, availability and high quality in these services throughout the country. The actions required to achieve this objective will also improve the status of Saami speakers and Saami languages. Among other things, the actions will provide better possibilities of monitoring and guiding the equitable realisation of children's rights and services, and a reform of the financing system could make it possible to address the diverging circumstances of the municipalities better. Developing the knowledge base and information systems will also be important for the quality of Saami-language ECEC and pre-primary and basic education, as well as for developing their quality, to ensure that decision-making is underpinned by reliable and up-to-date information. By developing legislation and the operating culture, timely support and low-threshold services for the development, learning and well-being of all children and young people in all parts of Finland will be guaranteed without discrimination.

The number of students in the instruction of and in the Saami languages and bilingual instruction in Saami and Finnish has increased over the last ten years, especially outside

the Homeland. Around 200 children currently attend Saami-language ECEC. The aim is to improve the availability of Saami-language ECEC and to clarify the role of language immersion ('language nest') activities.

In the school year 2020–2021, a total of 710 students attended instruction of the Saami languages and pre-primary, basic and general upper secondary education delivered in Saami. The Saami language distance learning project implemented in basic education enables students to study the Saami languages regardless of where they live. Until the end of the school year 2021–2022, the distance learning will be implemented with fixed-term development funding. Subsequently, solutions for putting these activities on a permanent footing will be sought.

Upper secondary vocational education and training in Saami is provided at the Sámi Education Institute, whose teaching languages are Saami and Finnish. The Saami languages can be studied in general upper secondary schools. Saami students can also complete part of their compulsory education on a Saami language and culture course offered by the Sámi Education Institute that is at least one term in length. The Education Policy Report's general objective of stepping up cooperation between upper secondary education providers will also support the organisation of Saami-language education. In the longer term, the objective is to examine the possibilities of completing some of the matriculation examination tests in Saami. As part of the work on higher education institutions' accessibility plans, different groups' access to and success in education will be examined. Language minorities will also be taken into account in anticipating the need for teaching, guidance and other staff and ensuring their availability. A report prepared for the Ministry of Education and Culture found that the challenge in early childhood education and care and teaching in Saami lies in the adequacy of staff trained for this task who have proficiency in the Saami languages. The aim is to improve the availability of Saami-speaking ECEC teaching staff and to develop further the blended study opportunities for teaching and education staff.

The development of digital learning solutions discussed in the Education Policy Report can also create new opportunities for implementing instruction of and in the Saami languages. These development measures can both support studying Saami languages as a mother tongue and improve the opportunities for re-learning a forgotten mother tongue. The Saami languages and accurate and up-to-date information on the Saami as an indigenous people should be taken into account in the production of both digital and other learning materials and in teaching. In addition, the prerequisites for producing Saami language learning materials should be improved.

4 Situational picture of the education and research system and key drivers of change

The Finnish education system is comprehensive and operates to a high standard in many respects. All children have an equal right to early childhood education and care. Pre-primary education is compulsory and the participation rate in it is high. Almost all children finish basic education, and their learning outcomes are good by international comparison. Sufficient places in upper secondary education are available for all those who finish basic education, and 94% of young people aged under 18 who completed their basic education in 2019 continued immediately in education leading to a qualification, and of the remainder, three per cent continued in transition point education (various preparatory education programmes as well as voluntary additional basic education).¹² The number of intake places in higher education equals approx. one and a half times the cohort size, and demand for education is high. Research, development and innovation activities are diverse. Finland has a strong position in scientific publication activities, and we are one of the leading countries in the use of digital technologies.

However, the system does not work as expected by society and learners in all respects or produce the desired results. Children's participation rate in early childhood education and care is lower in Finland than in other Nordic countries. Learning outcomes in basic education have deteriorated. Approx. 15% of the cohort does not complete an upper secondary qualification, and the proportion of those completing a higher education degree has not risen at the same rate as in reference countries. No progress has been made regarding equality in education. School fatigue and other threats to pupils' and students' well-being have become more widespread. There is a shortfall in RDI investments, and Finland is lagging behind the reference countries in the volume and impact of RDI activities.

The relationship of education and science with societal changes works in two directions. On the one hand, the drivers of change affect the operating conditions, objectives and practices of education and science in many ways. On the other, education and science are key drivers of change. They have significant impacts on the stability, functioning and welfare of society. Education and research build a better future.

12 Statistics Finland 2020

Creative learning is needed to handle change, and changes also create new opportunities and methods for learning. Learning has never been restricted to something that only happens inside the education system, and the factors referred to above keep altering the relationship between education and informal learning outside it. Work and learning are increasingly one and the same, and as work changes, on-the-job and workplace learning also change in terms of time, place and methods alike. Technology is creating new possibilities for learning that are independent of time and place; consequently, any environment can be a learning environment, and learning becomes a seamless part of life in general. An education system with an open interface with the world around it can bundle and combine the routes and outcomes of formal and other learning into a suitable path for each learner, supporting and guiding them.

Not everyone benefits from this transformation of learning opportunities in the same way. As an institution that is relevant for the entire population, the public education system has a particular duty to promote equity, respect everyone's human dignity, and strive for the common good. In the midst of drastic changes, human abilities and resilience are also tested. Education must be built on humans as moral, feeling, intellectual and communal beings. This is the only way to support an individual's development into a whole person, a community member who understands complex entities and the connections between themselves and the world around them. When successful, education supports a child's growth into a person who assumes responsibility for themselves, the family, communities, society and the world. Education can reinforce empathic, ethical and ecological thinking and a feeling of belonging.

This chapter of the Education Policy Report discusses seven key drivers of change that impact the education and research system and that must be tackled: demographic change, increasing inequalities, transformation of work, the economy and business life, technological advancement, status of the environment and climate change, democracy and human rights, and internationality and global problems. Additionally, the global crisis caused by the COVID-19 virus has already impacted many of these drivers of change and drawn attention to the importance of education and research for people's well-being as well as the nation's and society's crisis resilience.

Demographic change will transform the education system

Demographic structure and its changes are linked to welfare, societal development and different policy sectors. The population's age structure and dependency ratio as well as net migration and natural population growth as factors that regulate the population lay the foundation for societal planning at both the national and regional level. Additionally, the population's business, education and family structure as well as the distribution of

languages and ethnicities have many types of impacts on such issues as the need for different services.¹³

Population trends have diverged strongly in Finland in the 2010s. The greatest problems of these trends are associated with the ageing of the population, reduction of the working-age population, and a rapidly declining birth rate. Demographic development will diverge strongly at the regional level in the future, especially between large student cities and the rest of the country. The concentration of population exacerbates differences between different parts of the country and counties and, increasingly, within counties.

Statistics Finland's population projection indicates that Finland's population will start decreasing from 2031 on and that the sizes of young cohorts, in particular, will dwindle. Around 47,300 children were born in Finland in 2018. This is one quarter less than in 2010, and the young cohorts have grown smaller in almost every municipality. In 2017, there were almost 50 municipalities in Finland in which less than 15 children were born, and the population projection indicates that in 2030, this number will be 80. Due to the declining birth rate, the number of children aged 0 to 6 has already decreased. The greatest decline affects urban settlements and rural municipalities. In areas with positive net migration, the number of children is likely to grow. While the population projection shows that the shrinking cohort sizes will reduce the need for basic public services also in early childhood education and care, the actions aiming to increase ECEC participation are likely to ensure that the service need will remain more or less the same or even grow. There will be a 17.5% drop in the cohort of those aged between 7 and 15 by 2030 compared to 2020.

In older cohorts, the demographic change will be seen with a delay. According to the population projection, the cohort of 16-year-olds will grow by more than 4,600 by 2025 compared to 2019. The cohort of young people transitioning to upper secondary education will be larger than today up till 2030, after which it will start declining sharply to only about 83% of its current level in 2040. Over the longer term, however, the number of those aged 15 to 24 will drop by around 91,000 between 2019 and 2040. The shrinking of the cohort will concern almost all subregions in Finland, however earlier and more strongly those with a smaller population. There is a significant number of subregions in Finland where the number of young people aged 15 to 24 will drop by at least 30%. According to the population projection, the number of new general upper secondary school students will decline by at least 20% by 2040 in some subregions, and increase in only two subregions. A similar situation will be seen in vocational education and training, even if the age structure of VET students, which is different from that of general upper

13 Kestilä & Martelin 2018, 26.

secondary students, will soften the change somewhat. Regardless of this, the reduction will be over 20% in most subregions, and a significant increase will only be seen in two.¹⁴

The impacts of the lower birth rate on cohort sizes will reach higher education especially in the 2040s. Up till the mid-2030s, the cohorts reaching higher education age will be more or less the same size as today.

In 2019, there were more than 420,000 persons with a foreign background living in Finland according to Statistics Finland's origin classification. While one half of them live in the Helsinki Metropolitan area, there are some migrants in almost every municipality. One out of six persons with a foreign background was born in Finland. In addition, there are tens of thousands of international students and employees with a fixed-term residence permit in Finland. People living in Finland speak 130 different mother tongues.

The diversification of origins and languages has many types of impacts on the education system, especially in the Helsinki Metropolitan area and other large cities. According to the population projection, the proportion of children with a foreign background in early childhood education and care and basic education will exceed 25% in the Helsinki Metropolitan area. The number of foreign-language students and those with a migrant background has also grown steadily in vocational institutions, general upper secondary schools and higher education institutions in recent years.

The shrinking cohorts will mean that the education system will turn out less workers for the labour market. While COVID-19 and the economic cycles influence the demand for labour and immigration volumes over the short term, they will not change the long-term outlook which indicates a growing need for skilled labour in Finland. Organisations and companies will need not only skilled labour in general but also special expertise. The number of residence permits issued for work and studies has grown significantly in recent years. Their numbers are considerably smaller than in Finland's reference countries, however, and global competition for best talent is tough. International talent strengthens and promotes the internationalisation of Finnish education, research and innovation, whereas the diversity and internationality of society and the world of work are pull factors for international talent in Finland.

Impacts of demographic change on education provision

Managing and adapting the municipality's service network, ensuring the quality and accessibility of education, and having the prerequisites for delivering the support and

14 Statistics Finland 2019; Aro et al. 2020.

student welfare needed by the child or pupil will emerge as an essential question for municipalities in ECEC and basic education. While the number of children at ECEC age has decreased in the 2010s, the need for services has not declined, as the participation rate in ECEC and the number of children participating in ECEC have gone up. The municipalities have already adapted the basic education school network strongly. The number of educational institutions has declined steadily in the 2010s, both in growing municipalities and those affected by population decline. There has been a clear reduction in the number of schools with less than 50 students. The number of small schools has gone down from 610 in 2011 to 346 in 2018. In other size categories, this decline has been more moderate in proportion, whereas the number of large educational institutions with more than 500 students have become more common, especially in municipalities experiencing rapid or some population growth. In total, the number of schools providing basic education (with grades 1 to 6, 7 to 9 and 1 to 9) has declined by 513 in 2011—2018. This development of the school network will continue further in the 2020s. The number of small schools will decline dramatically, and municipalities will centralise their services to larger units in order to maintain the service level and reduce costs. Even today, there are major differences between municipalities in the costs of basic education. On average, the costs are the highest in rural municipalities whose population is declining rapidly. The divergence of costs driven by demographic trends is set to continue. The school network in small municipalities may already be so concise today that only one basic education school remains, and the services can no longer be cut back without completely ceasing to provide them in the municipality.

The conditions for providing upper secondary education will become more difficult in the 2030s. The country will become increasingly polarised regarding general upper secondary education. In growth centres, the student numbers will not decline as much as in sparsely populated areas. This trend will create unequal preconditions for providing education in different parts of the country. In regions with a declining population, the financing base of central government transfers will dwindle, and the providers will be forced to make up for these amounts by other means. Providing general upper secondary education risks becoming financially impossible in some subregions, reducing the network essentially. In this situation, equitable accessibility in all parts of the country cannot be guaranteed.

While the situational picture of vocational education and training is very similar, the links between individual municipalities and VET institutions are less close. The decreasing student numbers will result in a substantially shrinking financing base for some education providers. The lower level of financing will no longer enable the provision of high-quality education and training or investments in facilities and equipment. The preconditions for providing VET will diverge strongly in different parts of the country. The disparity will have knock-on effects on the labour market and the availability of skilled labour. In regions with a declining population, problems with labour availability will hamper business

development and, among other things, the establishment or development of production plants. The VET service network is already operationally and financially fragmented, and demographic trends will exacerbate this divergence.

The higher education network covers Finland extensively. In 2019, the 13 universities and 23 universities of applied sciences offered degree-education in 60 localities in total. Higher education studies are associated with a great deal of student mobility across county borders. For many students, starting university studies means moving to another county. Students move from counties with no universities to those that have them. In Uusimaa, more students move elsewhere to study than in other counties. The network of universities of applied sciences is wider, which is why migration between counties as students start their studies is less prominent. Regional mobility also takes place after graduation from higher education. Graduates move to Uusimaa, in particular: of those who have completed a Master's degree, 51% are living in Uusimaa one year after graduating. University of applied sciences graduates find jobs more evenly in different counties. UAS graduates living in Uusimaa one year after completing their degrees accounted for 35% of the graduates.

The pressures to change the financing system created by demographic changes are so significant that the current structure and method of providing education services will no longer be viable in a large part of Finland. To secure high-quality upper secondary education, sufficient teaching staff is needed in the entire upper secondary education sector, and VET providers must also have an adequate ability to invest in facilities and equipment.

The demographic change will impact the operating preconditions and outlook of municipalities, education providers and higher education institutions. There are significant differences between their sizes, conditions, population structures and carrying capacities. Dwindling cohorts, retirements, problems with the availability of skilled labour and a poor economic outlook will in the next few years hamper the provision of high-quality and equitable ECEC, pre-primary, primary and lower secondary education, upper secondary education and higher education, especially in municipalities and regions affected by population decline. Ensuring the availability and accessibility of education services in densely populated and rural municipalities will be a significant economic problem for the education system.

In addition to migrations between counties, the preconditions for education provision are affected by migrations within the counties and urbanisation. The concentration of the population in large cities and their satellite municipalities will create problems related to the provision of high-quality ECEC and education, especially regarding support and services for foreign-language children and pupils as well as advancing segregation within cities.

- The cohorts attending ECEC and basic education will already have declined strongly by 2030. The size of the cohorts transitioning to upper secondary education will be larger than today up till 2030, after which it will start declining greatly. Up till the mid-2030s, the cohorts reaching higher education age will be more or less the same size as today, only to start dwindling after this period.
- The pressures to change the financing system created by demographic changes are so significant that the current structure and method of providing education services will no longer be viable in a large part of Finland.

Equality in education – equality through education

Inequality has many negative societal impacts. It erodes social cohesion, trust between people and trust in institutions, environmental awareness, social interaction, inclusion and civic participation. The threat of inequalities associated with skills is particularly relevant for Finnish society. Education is the key factor that explains determination of social status, and inequality in education results in inequalities across all areas of society. Inequality also hampers economic development. A key mediating mechanism between inequalities and growth is investing in human capital. In unequal societies, those with a lower status end up struggling the most to access high-quality education, which leads into lost potential and lack of social mobility. An equal society is based on incentives that support citizens' feelings of self-efficacy and autonomy, inclusion and agency. A more equal society has repeatedly been proven to benefit the large majority of citizens.¹⁵

In particular, inequality is evident when comparing the extremes of the social strata in Finland. People have different resources depending on whether they have a high or a low income; a lack of resources hampers possibilities for social mobility, whereas the privileged hold on to their advantage.¹⁶

The value base of Finnish education is enshrined in legislation. Under section 16 of the Constitution of Finland (731/1999), everyone has the right to basic education free of charge. The public authorities shall, as provided in more detail by an Act, guarantee for everyone equal opportunity to receive other educational services in accordance with their ability and special needs, as well as the opportunity to develop themselves without being prevented by economic hardship. The public authorities shall support families and others responsible for providing for children so that they have the ability to ensure the wellbeing and personal development of the children (Constitution of Finland 731/1999, section 19).

¹⁵ OECD 2015; Prime Minister's Office 2018; Government's common drivers of change 2019

¹⁶ Sirniö 2016

Every child's right to early childhood education and care derives from this provision. The Act on Early Childhood Education and Care (540/2018) contains provisions on not only the objectives of ECEC but also the municipalities' obligation to organise early childhood education and care that meets the needs in the municipalities and parents' and custodians' right to an ECEC place for their children. ECEC fees are determined under legislation.

The underlying principle of Finnish education policy has been fostering human capital, and the education system has supported the effort to make use of the entire population's talents and resources. This policy has been implemented by offering ECEC services at a reasonable price to families and free education to students as well as through a comprehensive system of student financial aid and education and training provision with a wide regional coverage. To bolster equality and reduce the impacts of family background, special grants have been made available. The education system has indeed managed to combine a high standard of knowledge and skills, equality and efficiency, as a result of which equality in education is mostly well realised in Finland by international comparison.

However, equality is not realised in practice as intended. Family background determines the child's and young person's education path, and education is segregated by gender. Students who are supported by a well-educated family with social, cultural and economic capitals are clearly better placed to succeed than those with a more disadvantaged background. The learning paths of persons with disabilities are fraught with obstacles.

High-quality early childhood education and care and pre-primary education promote equality and social cohesion and lay the foundation for future success. Studies have proven an association between ECEC participation and later competence, especially in children who have stressful factors in their growth environment¹⁷. Studies indicate that the cost-effectiveness of ECEC is extremely high, especially in the context of disadvantaged families. Inclusive early childhood education and care can help promote equity and prevent social exclusion. In particular, children who come from low-income families and whose mothers have a low level of education have the lowest ECEC participation rate. International research findings indicate that these are the very groups in which ECEC participation has been found to benefit the children the most, for example as better school success later on.¹⁸ From the beginning of August 2020, restrictions of the subjective right to ECEC were abolished, and all children again have the right to full-time ECEC, regardless of the custodian's labour market status.

17 FINEEC 2020a

18 Sipilä & Österbacka 2013; Karila 2016

By European comparison, the participation rate of children aged over 2 at risk of poverty or social exclusion (2016) in Finland is below the EU average: 74% of them participated in ECEC, whereas the EU average was 80%. The difference in the participation rate between at-risk and other groups is large compared to Sweden, for example.¹⁹

In international comparisons, equal education systems usually also produce good learning outcomes. Finnish young people continue to rank highly in international comparisons, but in recent years, the impact of socio-economic background on young people's learning outcomes has become more prominent, while a clear decline has been observed in learning outcomes and attitudes. Both international and national studies of learning have pointed to this decline. In PISA studies, the drop in the level of skills in literacy, mathematics and science has been significant and, in the 2010s, one of the largest in the participating countries. In the meantime, the proportion of students with particularly poor skills has increased. The association between the socio-economic background and students' skills in Finland has been one of the weakest in the OECD countries, but in the latest study, it was at an average level.

The PISA study found that the difference in literacy between Finnish girls and boys is the largest in the OECD countries. Girls caught up with boys in average mathematics skills in 2012, after which year girls have also outperformed boys in this area. In 2018, the difference between the sexes was the largest in the OECD countries also in science, with girls doing better than boys. An evaluation study of the Finnish Education Evaluation Council²⁰ found that the differences in skills between boys and girls were minor in grade 1 of basic education. On average, girls' skills were only slightly better than boys'. Consequently, the gender differences in skills emerge during basic education. This observation is also supported by an evaluation of learning outcomes in Finnish language and literacy in the final stage of basic education.²¹ It found that in different content areas, girls outperformed boys on average by one assessment grade. The evaluation indicates that the student's attitudes towards a subject and studying it had a clear association with competence. Girls' attitudes towards studying were more positive than boys' across the board. Up to 42% of the students' overall performance in Finnish language and literature was explained by their attitudes, interest in reading, doing their homework and using digital media. The custodians' education and the school the student attended was also linked to skills. Student assessment proved not to be equal in Finnish language and literature, as the final grade awarded in this subject varied by gender, school and the student's plans for further studies.

19 Flisi & Blasko 2019

20 FINEEC 2020a

21 FINEEC 2020b

Migrant children's poorer performance compared to native Finnish students in mathematics in the PISA test corresponds to two years' studies. This gap is one of the largest in the OECD countries. The differences between the native population and students with a migrant background have persisted from one round of PISA tests to the next, and the average results in literacy, mathematics and science alike have deteriorated since 2009.

The parents' socio-economic status and level of education are strongly associated with young people's choices of upper secondary education. The children of parents with a lower socio-economic status and level of education are more likely to continue their studies in vocational education and training, whereas the children of more privileged parents go to general upper secondary school. In this respect, inequality has increased²². Upper secondary education choices also continue to be gendered. In 2018, 65% of girls applied for a place in upper secondary school while 54% of boys applied for vocational education and training as their first choice.

In 2019, a total of 1,890 young people were excluded from all education after completing basic education; 1,280 of them were aged under 18.²³ While foreign-language speakers continue their studies in upper secondary education immediately after basic education more often than before, they do so less than young people who speak Finnish or Swedish as their mother tongue. Young people with a migrant background have a high risk of dropping out, and compared to native Finns, their risk of not completing upper secondary education at all is many times higher.

Family background also affects higher education choices. Not only students with a lower socio-economic status but also such groups as migrants, students with a migrant background and those with disabilities and functional capacity restrictions are underrepresented in higher education institutions. Family background is linked in different ways to the choice between universities of applied sciences and universities and, on the other hand, different fields of education. A larger share of students with a high socio-economic status are admitted to universities than to universities of applied sciences. On the other hand, there are major variations in university students' backgrounds. Medicine, law, business and also engineering are fields strongly marked by inherited advantage. Educational science and humanities are less elitist fields. The rigid gender segregation in education and the labour market is also visible in higher education.

22 Härkönen & Sirniö 2020

23 Statistics Finland 2020

Those who are already well educated and in a good labour market position participate in training more than others, whereas those with poor basic skills participate little, even by international comparison. Women participate in training clearly more than men.

From the international perspective, while inherited advantages related to education have previously been less prominent in Finland than in many other countries, they have increased in recent years. Studies have found the strongest association between parental education level and the child's education: parental education is linked to completion of upper secondary education, pursuing higher education as well as the final level of education of the child.²⁴ The impacts of children's and young people's family backgrounds can grow stronger during the learning path. If children of the most disadvantaged families have the lowest ECEC participation rate, ECEC cannot promote equality in children's basic skills at the start of basic education. As the effects of family background become more prominent during basic education, its impacts on upper secondary education choices also grow stronger. Inequality in education is, in particular, explained by being eligible for the academic study path, or completing general upper secondary school and then going on to study at university; and the increasing inequality in education is above all a consequence of the stronger association between parental education and completing general upper secondary school.

The realisation of equality and children's and young people's well-being cannot be promoted by education policy means alone; family and social policy actions are also important. Multiprofessional support services delivered in cooperation are significant, especially when the parents do not have the financial, social and cultural resources to offer adequate support for their children. The purpose of the pending health and social services reform is to bridge well-being gaps. After the reform, municipalities would still be responsible for early childhood education and care, basic education and leisure services. The reform aims to ensure that health and social services would be integrated better with the municipality's other service provision, including schools, early childhood education and care and youth services.

It is never too late to influence children's and young people's learning and progress on the learning path. While there is convincing evidence of the positive impacts of high-quality ECEC on promoting equality, it has been found that measures, interventions and investments seeking to prevent dropping out and becoming disadvantaged targeted at adolescents also have significant impacts on positive development. While intensive guidance of young people has been found particularly effective, especially those young people who have the greatest need of support appear to receive inadequate guidance

24 Eskelinen et al. 2020

in Finland²⁵. Even in their adult years, upskilling can improve a person's economic and social status. Efforts to promote equality must begin in early childhood but also continue throughout the learning path and in all education and training, resorting to whatever type of cooperation is needed at the time. Teachers, guidance counsellors and other staff play a key role in promoting equality. Expanding compulsory education is an important step that will also promote the realisation of equality. Expanded compulsory education will be effective from 2021. The Act will be applied for the first time to students at compulsory education age who are in grade 9 of basic education in the spring. In the future, compulsory education will end when a young person turns 18 or completes an upper secondary qualification, whichever comes first (matriculation examination or a vocational qualification).

- Inequality has many negative societal impacts, and equality has repeatedly been found to benefit the large majority in society.
- Education is the key factor that explains determination of social status, and inequality in education results in inequalities across all areas of society.
- Equality in education is not realised. Family background determines the child's and young person's education path, and education is segregated by gender. Students who are supported by a well-educated family with social, cultural and economic capital is clearly better placed to succeed than those with a less privileged background. The threat of regional inequalities in education and learning outcomes has been exacerbated.
- Equality and well-being can be promoted by multidisciplinary support services delivered in cooperation.
- While there is convincing evidence of the positive impacts of high-quality ECEC on promoting equality, it is never too late to influence children's and young people's learning and progress on the learning path.

Opportunities offered by technology and digitalisation in education and science

Digitalisation and the development of new technologies will affect in many ways the daily lives of all citizens and the way society and labour market work, but their development, impacts and speed are difficult to anticipate. At best, technological advancement can have positive impacts on the economy and improve well-being as well as enable the offer of personalised digital services to an increasing number of people. Education systems and institutions will both encounter problems and discover new opportunities as technological advancement enables the 'ubiquity' of learning: learning in different environments, at any time, as part of the learner's daily life and guided by their personal goals.

25 Fryer 2016; Vanttaja et al. 2019

Digitalisation will loosen the ties of education with place and time and offer significant possibilities to serve learners more individually and to a higher standard. This will also make studying across the boundaries of educational or higher education institutions possible. Typically, part of the provision of digital study opportunities will be open and international. Different forms and methods of teaching will often be combined into a whole that consists of contact teaching, online discussions, independent work and use of pre-recorded material in turn. On the other hand, entire qualifications can be completed as modern online studies.

Education is producing increasing volumes of different data sets. Learning itself produces data that can be used by both learners themselves and the educational institution. Data sets created by research will similarly proliferate. While common national information systems have been built to support the activities, the fragmented nature of different actors' systems continues to hamper the use of data and digitalisation. Education actors' information systems are currently designed to mainly support education aiming for a qualification or a degree in which the learner is the student of a single education actor at a time.

The new methods enabled by data and artificial intelligence can be used in many ways in the steering and evaluation of the entire education and research system. Information-based steering and learning analytics make more up-to-date information available for monitoring, supporting and developing learning. Digitalisation and artificial intelligence can also help recognise and eliminate learning problems as well as free up time for learning and teaching by speeding up routine tasks and automating processes. However, data utilisation also has its inherent risks in the absence of clear ethical, legislative and data management guidelines, in the development of which the public administration plays a major role.

The preconditions for getting a grasp on the benefits created by new technologies would, in particular, include raising the level of competence and education, inputs in research, development and innovation, goal-oriented co-design with different sectors, and developing the public administration's role as an enabler. Public sector inputs are needed not only in competence development but also in ensuring that innovations are mainstreamed and promoting interoperability.

Technological advancement changes skills needs and influences the type of knowledge and skills the education system should produce. Due to the structural change in the world of work, which is accelerated by digitalisation, some tasks will disappear in the labour market; however, new tasks which often have higher skills requirements will replace them over the long term. Education and the ability to upskill that it imparts are the very factors that will protect people amidst changes. On the other hand, the use of computational

methods and new technologies also requires high-level education of professionals in these specific fields, extensive expertise in artificial intelligence application, and scientific research in computational methods and AI. Digitalisation and technological advancement have many types of impacts on research practices. As the digitalisation of education progresses, teachers, other staff and learners will need new skills and capabilities. This will create requirements for both the initial and continuing education of teachers and other staff. Rather than just being objects of digitalisation, learners and teachers will develop and shape the way digitalisation is unrolled.

Finland is well placed to gain international success in the field of digitalisation. The International Computer and Information Literacy Study (ICILS) assesses the multiliteracy and computational thinking skills of grade 8 students. In 2018, Finland came fourth among 12 countries in this assessment. On the other hand, eight per cent of Finnish students failed to reach the lowest performance level (level one). These students have extremely poor ICT skills, and they were found to struggle with even accessing hyperlinks or using a simple word processing program. They were also unable to produce texts or messages intended for a specified target group. All in all, 28% of Finnish students were found to have a poor level of multiliteracy (level 1 and below): more than one out of four students had limited ability to find and use information in routine tasks. Finnish girls outperformed boys with a difference that was the second largest in the study after Korea.

The final report²⁶ of the Comprehensive Schools in the Digital Age project noted that there has been no change in students' digital skills over the last few years. Traditional textbooks, notebooks and handouts were still emphasised in learning methods, which did little to build digital skills. Students' personal activity, which is stressed in the transversal competence objectives of the National core curriculum, is not yet realised in practice. While teachers' skills had improved during the monitoring period, there were shortcomings in such areas as implementing digital contents and programming skills. On average, a little less than a half of the teachers could not complete a test that measured elementary programming skills, and only one out of five said they had tried programming with their students. According to this study, students' digital skills were poorer than the teachers' in all areas examined. The study found that active use of digital devices in free time is not sufficient to build the skills needed to operate in an increasingly digital society. The report argues that basic education is currently unable to offer fully equal learning opportunities for developing digital skills.

Digitalisation is also changing the international operating environment. Attractive learning environments and research infrastructures are growing in importance as

26 Piiroinen et al. 2019.

digitalisation opens up the market and thus drives international competition between education and research environments.

However, the digitalisation of education will not in itself solve key education policy and learning problems, including inequalities, lack of attachment to education and difficulties in transitions from one stage of the education path to the next. For example, particularly lack of interest or attachment are caused by non-technological factors, including stress factors affecting people or the dynamics of inter-generational exclusion, which is why they cannot be resolved merely by technological means. The experience of belonging to the community is vital. International studies have additionally found that popular open digital learning solutions, including MOOCs, favour the accumulation of competence, participation in education and social inclusion of the population groups that are already advantaged.²⁷ Digitalisation has also not been found to improve learning outcomes in general, and even at best, the positive impacts are limited to restricted ways of using technologies²⁸.

In spring 2020, the coronavirus epidemic brought about a sudden transition to distance learning and wide use of digital technology in teaching and learning. Initial findings indicate that pupils and students experienced distance learning in different ways; it was more stressful than contact teaching for some, whereas others found that it improved their well-being. Investigating students' experiences of the distance learning period in more detail will be important and should lead to improvements in both contact and distance learning.

Recent international studies have pointed out that the pandemic has given momentum to commercialisation in the education sector, which was already in progress. Issues of the so-called platform economy and trading in the personal data of students, especially children and young people, and information created while performing public tasks are some of the key concerns. The public administration plays a key role in formulating rules and initiating a discussion on them with different parties. Up-to-date research on this topic is needed to support the planning and targeting of actions.

Digitalisation also has links to sustainable development themes, which influence the future of education. Due to the enormous demand for energy caused by digitalisation, an international team of scientists²⁹ points out in its recent overview of topical themes of the field that, over the last decades, not only have digital technologies been deployed globally

27 Selwyn 2013; Castaño-Muñoz et al. 201; Rohs & Ganz 2015; Hansen & Reich 2015

28 OECD 2015

29 Ibid.

in teaching but obsolete devices have also increasingly been disposed of in the name of educational innovations. From the perspective of sustainable development, the education community should reduce the environmental and ethical impacts of digital technology consumption, which means a change of attitudes and practices compared to objectives that were energetically promoted not so long ago.

- Digitalisation and technological advancement create skills needs, which must be responded to through education.
- Technological advancement will enable the ‘ubiquity’ of learning: learning in different environments, at any time, as part of the learner’s daily life and guided by their personal goals.
- The new methods enabled by data and artificial intelligence can be used in many ways in the steering and evaluation of the entire education and research system.
- As the digitalisation of education will not in itself solve key education policy problems, education policy and the education system must consistently strive to promote everyone’s ability to benefit from the possibilities of digitalisation.
- In spring 2020, the coronavirus epidemic necessitated a sudden transition to wide use of digital technology in teaching and learning. Studies and surveys indicate that pupils, students and teachers experienced the distance learning in different ways. More detail investigations will be needed and should lead to improvements in both contact and distance learning.
- Digitalisation is also changing the international operating environment. Attractive learning environments and research infrastructures are growing in importance as digitalisation opens up the market and thus drives international competition between education and research environments.

Transforming work, renewing education

The transformation of work has been progressing rapidly for some years now, and the COVID-19 crisis will speed it up further. The typical feature of this transformation is that it will revolutionise work and the labour market. As the change in occupations and tasks gathers momentum, citizens must be prepared to upskill and update their skills throughout their careers. Changes in work contents and the emergence of completely new occupations will challenge both qualification contents and our conventional thinking about qualifications and qualification structures. Changes in the content of work will also emphasise the importance for success in work of competence areas that were traditionally considered general knowledge and ability. Managing large entities, communication and interaction skills as well as ICT skills will be needed in an increasing number of tasks. Professional knowledge and general knowledge and ability are closer to each other than

before and intertwined, and distinguishing between them in education is to some extent artificial.

Automation and robotisation are the most obvious examples of factors that will impact the contents of all jobs and the mode of working. They will have a large role not only in the development of production methods but also in the way work is tied to time and place. There will be even fewer manual tasks, and physical presence in the office, production plant or service will not always be necessary. The significance of automation as a factor of production also comes up when we look at the skills needed in work. Different competence areas associated with using digital tools are some of the most important workplace skills. In addition, creativity and ability to innovate, managing your own competence, networking skills, ethical competence and multi-skilling will be highlighted. As changes and transformations in the world of work gather momentum, preparedness for continuous learning will be stressed. Ability to learn and the development and management of your own competence emerge as essential general skills in the future, for example in the anticipation results of the National Forum for Skills Anticipation³⁰. Work itself is also a significant form of learning, and the workplace a key learning environment. As work becomes less tied to time and place, the possibilities of on-the-job learning will also change. Work can be done in different environments at various times, and this also applies to learning in and through work.

The increasing focus on competence in the labour market is reflected in the employment rates of persons with different educational backgrounds. The level of education is strongly associated with success in the labour market. In 2018, the employment rate of persons aged 18 to 64 who had no qualification after basic education was 45%, whereas this rate was 71% for those who had completed an upper secondary qualification, 83% for those with a first-cycle higher education or Bachelor's degree, and 88% for those who had completed a Master's degree or doctoral training. Since 2003, the employment rate of those with an upper secondary qualification has gone up the most, or by around four percentage points, whereas the employment rate of those who have no qualification after basic education has gone down by five percentage points. The unemployment rate is clearly higher for the latter group than the others; 20% of those aged 18 to 64 who did not have a qualification were unemployed in 2018.³¹ Youth unemployment in Finland clearly exceeds the OECD average. Approx. 16% of the labour force aged 15 to 24 in Finland were unemployed in 2019, whereas the OECD average was 12%.³²

30 Finnish National Agency for Education 2019

31 Statistics Finland, Labour Force Survey

32 OECD 2020c

When examined by sector, the offer of qualifications produced by the education system already differs from labour market needs. In the future, it must be ensured that the education and training provision is targeted according to the needs of citizens and the labour market. The transformation of work will also have impacts on the relationships between sectors, the most significant one of which will be the servicification of the economy and integration of the production of goods and services.

The poor availability of skilled labour has in recent years been a key factor preventing companies from hiring more staff. In particular, this problem affects strongly growth-oriented companies. The SME Barometer (January 2020) indicates that clearly over one half of all SMEs find the availability of skilled labour that meets the company's needs a factor that hampers the company's growth to at least some extent. From the perspective of the availability of skilled labour, the education and training provision should keep track of sectoral development and changes in its nature. Anticipation, and especially taking the anticipation results into account in planning and decision-making, will be increasingly important, albeit also more difficult, in the future. While making sure that the targeting of education and training provision is based on anticipation results, it must also be ensured that education in those sectors that can provide jobs and need skilled workers remains attractive.

In connection with the transformation of work, it should be noted that Finland is not a uniform labour market area; the demand for labour and sector-specific needs are subject to regional and even sub-regional variations. The regional profiling of industries is strong, and recent development in different branches of manufacturing and demand for services, among other things, have promoted the divergence of business structures.

Without determined action, there will be significant bottlenecks of labour availability in a near future. They will affect the national economy's ability to regenerate and Finland's position in the international market. While servicification has underlined the importance of the internal market, exports remain vital for Finland. The higher innovation rate of goods production, the faster renewal cycle of production series and the specialisation of services have already created unprecedentedly high requirements. Based on an anticipation exercise conducted by the Finnish National Agency for Education, around one million people will leave the current labour force by 2035. Over 100,000 completely new jobs will also be created. Competence of higher education level will be required in almost 70% of the new jobs and in around 54% of the jobs becoming vacant. In practice, this means that more than one half of the new labour entering the labour market must have higher education level competence. It also means that the working-age population must have access to instruments for responding to the competence requirements. More than 300,000 working age people with no upper secondary qualification are still in the labour

market. The OECD³³ also believes that only a small proportion of the demand for labour and labour shortages will concern workers with a low level of education, and anticipates that such factors as the ageing of the population will exacerbate the shortage of workers with a high skills level in the future.

The transformation of work can deepen the gulf between those who can manage the change and those who will struggle to cope. Workers whose capitals, abilities and skills are a good match for the change may benefit, whereas for others, the changes may mean difficulty finding a job, a lower income and general uncertainty. The entire population's good level of education and skills lays the foundation for coping, and continuous learning can respond to the problems created by the transformations while promoting social justice.

As most of the children starting school today will end up in jobs which do not even exist today; as the jobs of a significant proportion of current wage earners and entrepreneurs will either disappear or change in content, perhaps several times during their careers; and as the relationship between work and time, place and employment relationships change, the education system cannot avoid changing, too. The transformation of work and the speed at which this change takes place will challenge the entire education system from the qualification system, qualifications and degrees and composition of qualifications to curricula, learning environments, modes of learning and the teacher's identity. In terms of preparing for the new world of work and the creation of new jobs, it will be essential to understand that changes in work will also shape the cooperation between education, RDI and the world of work and its marginal conditions.

- Level of education is strongly associated with success in the labour market.
- Changes in work contents and the emergence of completely new occupations challenge both qualification contents and conventional thinking about qualifications and the qualification structure.
- Changes in the content of work will also emphasise competence areas that were traditionally considered general knowledge and ability for success in work; professional knowledge and general knowledge and ability are close to each other and intertwined. Similarly, work and learning will increasingly be one and the same.
- Anticipation results indicate that a need for higher education level competence will be emphasised in the future.

33 OECD 2020b

- In order to respond to labour needs, anticipation results must be used in decision-making, the provision of education and training must be directed carefully, and the attraction of education must be ensured.
- The transformation of work can deepen the gap between those who can manage the change and those who struggle to cope. The entire population's good level of education and skills lays the foundation for coping, and continuous learning can respond to the problems created by the transformations while promoting social justice.

Education bolsters active citizenship and democracy

Inequalities in participation, erosion of trust in democracy, and the feeling that policy-makers and decisions are distanced from people's everyday lives are significant societal problems. Economic and other well-being are not distributed equally enough, which has led to disillusionment for many. This disillusionment has at least contributed to undermining the experience of inclusion and the emergence of protest movements. Reduced appreciation for scientific knowledge and expertise has also been observed in these movements, which may lead to education and learning being valued less.

By international comparison, trust in society and also appreciation of education are at a high level in Finland. The regulative basis of democracy and human rights education in Finnish society is solid. Democracy and human rights are at the core of the underlying values of Finnish education from ECEC to higher education. Education plays a key role in supporting children and young people in growing into active members of a democratic society in which humanity is valued.

Under the Basic Education Act (628/1998), the purpose of education is to support pupils' growth into humanity and into ethically responsible membership of society and to provide them with knowledge and skills needed in life. Education shall promote civilisation and equality in society and pupils' prerequisites for participating in education and otherwise developing themselves during their lives. Pursuant to legislation, general upper secondary education and vocational education and training should support students' growth into active members of society.

According to the underlying values of the National Core Curriculum for early childhood education and care, pre-primary and basic education, these forms of education are built on respect for life and human rights. Education guides the pupils in defending them and respecting the inviolability of human dignity. Early childhood education and care, pre-primary education, and primary and lower secondary education promote well-being, democracy and active agency in the local community and civil society. The objective of

equality and the broad principle of equity guide the development of both early childhood education and care and pre-primary and basic education.

Participation in civic activity is the primary precondition for effective democracy. Skills in participation and involvement as well as a responsible attitude towards the future can only be learned by practising. The school and ECEC community offers a safe setting for this. At the same time, ECEC and pre-primary and basic education lay a foundation of skills for children's and pupils' growth into active citizens who exercise their democratic rights and freedoms responsibly. The mission of early childhood education and care and the school is to reinforce the participation of each child and pupil.

The International Civic and Citizenship Education Study (ICCS) investigates the ways in which young people are prepared to undertake their roles as citizens in the 21st century. This study was previously conducted in Finland in 1999 and 2009. Finland has been in the top four in the area of knowledge and understanding of civics since the CIVED study of 1999. The leading countries in 2009 and 2016 were Denmark, Finland, Taiwan and Sweden.

While Finnish young people have excellent basic skills and attitudes for civic participation, most of them lack the interest in and/or need for particularly active participation. Despite their excellent knowledge, Finnish young people's confidence in their own abilities as societal agents was the lowest in the participating countries. Young people's confidence in their abilities was linked to active participation in the future in the sense that the higher their confidence, the more likely they are to participate in school, become involved in legal demonstrations, vote and take part in other different forms of political activity besides voting.

- Participation in civic activity is the primary precondition for effective democracy. Democracy and human rights are at the core of the underlying values of Finnish education from ECEC to higher education.
- While Finnish people have a high level of trust in each other and different actors in society by international comparison, this trust has eroded in the 2010s.
- Trust and civic participation accumulate in social groups whose members have a high level of education, good health, an optimistic future outlook and a positive attitude towards executive institutions and the state of the economy.
- While Finnish young people have excellent basic skills and attitudes for civic participation, most of them lack the interest in and/or need for particularly active participation. Despite their excellent knowledge, Finnish young people's confidence in their own abilities as societal agents was low by international comparison.

- Skills in participation and involvement as well as a responsible attitude towards the future can only be learned by practising.
- Education plays a key role in growing into democracy, active citizenship and a society that values humanity.

Internationality and global responsibility

The world order is in flux. The West has lost its position of global economic leadership to Asia. China, in particular, has bolstered its position of power and strives to improve its global status also in science and technology. Global phenomena and problems – climate change, state of the environment, demographic development and the transformation of technology and work – underline interdependence. The values and principles represented by the EU and multilateral international organisations are widely challenged, however. The international situation is characterised by unpredictability and uncertainty, which is reflected in international cooperation in all sectors.

As a country that relies upon its exports, Finland is dependent on internationality in all of its forms. Finnish society has become more international in recent years as a result of migration and an internationalising world of work, among other things. The education system must be able to turn out experts who have the ability and willingness to operate globally in international interaction. Openness and internationality require knowledge, skills and attitudes that can be developed through international mobility and cooperation, among other things. The internationalisation of science and education, including internationalisation at home, promotes the openness and flexibility of Finnish society at large. The importance of internationalisation at home is accentuated by the fact that it offers equitable opportunities for internationalisation. Shared global challenges and 2030 Agenda have increased the importance of global education.

Language proficiency is a key part of internationalisation competence, and international cooperation sets new requirements for it. Migration has increased the number of those who speak a foreign language as their mother tongue in Finland. Increased migration affects the need for language training but also bolsters our national language resources.

Global responsibility and policy coherence are key principles in the implementation of sustainable development. The overarching theme of 2030 Agenda is that no one is left behind in the pursuit of development. In keeping with global responsibility, Finland must also promote other nations' possibilities for sustainable development. As a country of high-quality education and science, Finland has an ability to produce solutions to societal and global problems, including the learning crisis. The pandemic has exacerbated the global learning crisis, which means that in many countries, the education systems do not even produce sufficient basic skills. UNESCO estimates that the closing of educational

institutions during the pandemic has affected up to 1.8 billion children and young people. Finnish competence can help tackle the crisis and promote the Sustainable Development Goals of 2030 Agenda.

Skills and education play a large role in states' growth strategies. Global demand for education remains high, even if the COVID-19 crisis has had a major impact on international student mobility. Finland has attracted interest as a country of a high skills level. Finland's recognisability has been promoted and strengthened globally, for instance through networks of education and research and strategic participation. There is an international demand for education services, and actions related to sharing Finnish knowledge, expertise and educational innovations have been strengthened.

While Finland attracts more foreign higher education students than the OECD average (8%), we are still lagging behind many of our reference countries. In the mobility of researchers, there is scope for improvement in Finland's visibility and attractiveness. Internationalisation in the education and research sector can help promote work-based and competence-based immigration and the sharing of Finnish knowledge, expertise and educational innovations.

Sharing Finnish expertise is a key method of taking on global responsibility and influencing the contents of skills and education around the world. While being an economic activity, it also aims at influencing education and its contents.

These activities have grown and diversified in recent years. Turnover in businesses that provide Finnish knowledge, expertise and educational innovations around the world rose to a total of EUR 387 million at the end of 2019. The year marked by the COVID-19 pandemic briefly slowed down these educational services. It is possible to boost the value of educational services in the economy considerably in the long term, however. The activities will continue to be based on the strengths of Finland's education system and include services and products from ECEC to higher education and continuous learning. At best, commercially viable international cooperation and interaction can renew education services and broaden the horizons of the entire education system also in Finland.

- Global phenomena and problems – climate change, state of the environment, demographic development and the transformation of technology and work – underline interdependence. Multilateral cooperation and its forums (including the UN, Council of Europe, WTO) and the values and principles they represents are being challenged across a broad front. The international situation is characterised by unpredictability and uncertainty, which is reflected in international cooperation in all sectors.

- In keeping with global responsibility, Finland must also promote other nations' possibilities for sustainable development. As a country of high-quality education and science, Finland has an ability to produce solutions to societal and global problems, including the learning crisis.
- The education system must be able to turn out experts who have the ability and willingness to operate globally in international interaction. Language proficiency is a key part of internationalisation competence, and international cooperation sets new requirements for it.
- Internationalisation in the education and research sector can help promote work-based and competence-based immigration and the sharing of Finnish knowledge, expertise and educational innovations.

State of the environment and climate change – threats and opportunities for education and research

The burning question for humankind is whether actions to prevent climate change, biodiversity loss, deterioration of the status of the environment and an ecological catastrophe can be taken before it is too late. The goal is building a sustainable operating model in which the footprint of human action (negative effects) could be turned into positive impacts, or a handprint. The negative effects include excessive energy consumption, greenhouse gas emissions from energy generation and other production, unsustainable raw material use and emissions in air, water and soil. The positive impacts include renewable energy production, reductions in emissions of greenhouse gases and other harmful substances, cutting back on raw material use, re-use of raw materials as well as digital and other low-emissions technologies in support of environmental protection and conservation.

The UN's Sustainable Development Goals (2030 Agenda), European Commission's Green Deal as well as climate targets (Paris Agreement and the proposal for a European Climate Law) assign a role and responsibility to all societal actors in efforts to turn the economy and society climate neutral by 2050.

In sustainable development studies, high-quality education, competence based on it and general stability of society's systems have been identified as Finland's strengths. Key problems include climate change, excessive natural resources use as well as economic development and employment trends. The Government will work to ensure that Finland is carbon neutral by 2035 and carbon negative soon after that. In keeping with the Government Programme, sectoral low-carbon roadmaps will be drawn up in cooperation with companies and organisations in each sector and coordinated with new climate actions. Among other things, the roadmaps will help the public sector assess how research and development funding for a low-carbon society should be allocated in the

years to come. While new climate solutions are an immense opportunity for businesses, developing them will require strong and systematic digitalisation of society, education and research, RDI funding and enabling the exports of climate solutions. Emissions must be cut at many stages of the value chain, and there is an enormous need for new solutions.

Solutions to these problems can be found by making better use of the potential offered by ICT in reducing emissions and increasing resource efficiency while creating markets for Finnish know-how in the design of software, energy-efficient equipment and data centres, among other things. Education and research play a significant role in this: both businesses and society in a broad sense need expertise related to achieving the climate targets.

Circular economy

Education creates both competence and awareness, and it has a positive impact on reinforcing an environmentally responsible mentality in the scientific community, ICT sector, science policy actors and citizens alike. As digitalisation makes headway, the transition to carbon neutrality affects all sectors and creates a need for cyber security know-how, service skills and business renewal. The need for technical skills will grow in all sectors, also in 'non-technical' and service industries. Even today, there is a shortage of experts in production technology, marketing analytics, AI and circular economy.

The Ministry of Education and Culture has brought up the targets of striving for carbon neutrality and promoting circular economy in negotiations with higher education institutions. The solutions are in the hands of these institutions, especially when it comes to educating experts. Many new technologies need skilled people to use them, for example experts in climate-friendly programming and computation.

Research generally produces solutions and innovations for society at large. In addition to the natural science phenomena of climate change, the scientific community is today increasingly focusing on climate change adaptation and mitigation. The Academy of Finland's CLIMATE research programme, for example, investigates how people could make choices related to climate change mitigation or adaptation and how society can enable the making of such choices sustainably and equitably.

Especially through its digital research infrastructures, science is both a producer of an ICT footprint and an enabler of the ICT sector's positive impacts. Digital services and objects are immaterial and thus to a great extent dissociated from material value creation, except regarding infrastructure and its energy consumption. Should sustainability targets be brought to bear also on the research infrastructures funded by the Academy of Finland and the services offered to higher education institutions by the Ministry of Education and Culture through CSC, this would include developing and using low-carbon data centre

and data management solutions, developing ICT procurement competence in support of circular economy, reducing the footprint of software development and computing and, above all, traceability, openness and transparency towards ICT solution users to enable informed decisions and choices that reduce the footprint.

Finland can draw on its high level of competence and extensive digitalisation to produce solutions for both circular economy and, for example, cleantech and sustainable value creation networks.

Early childhood education and care and education have a huge impact on growing into a sustainable way of living. Addressing sustainable development themes at all levels of education from the perspectives of different subjects and fields of science helps learners perceive the way nature, the economy and society work and what their interactive relationships are. The National core curricula for early childhood education and care, basic education and general upper secondary education already contain the concept of 'ecosocial knowledge and ability'. This concept is used to refer to the need for a person to understand that ecological sustainability is a precondition for social sustainability and the realisation of human rights.

- The UN's Sustainable Development Goals (2030 Agenda), European Commission's Green Deal as well as climate targets (Paris Agreement and the proposal for a European Climate Law) assign a role and responsibility to all societal actors in efforts to turn the economy and society climate neutral by 2050.
- In sustainable development studies, high-quality education, competence based on it and general stability of society's systems have been identified as Finland's strengths. Key problems include climate change, excessive natural resources use as well as economic development and employment trends.
- While new climate solutions are an immense opportunity for businesses, developing them will require strong and systematic digitalisation of society, education and research, RDI funding and enabling the exports of climate solutions.
- Education and research play a significant role: both businesses and society in a broad sense need expertise related to achieving climate targets.
- Environmental protection and climate change mitigation will require new civic skills, and they must be addressed in all education from ECEC to liberal adult education.

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