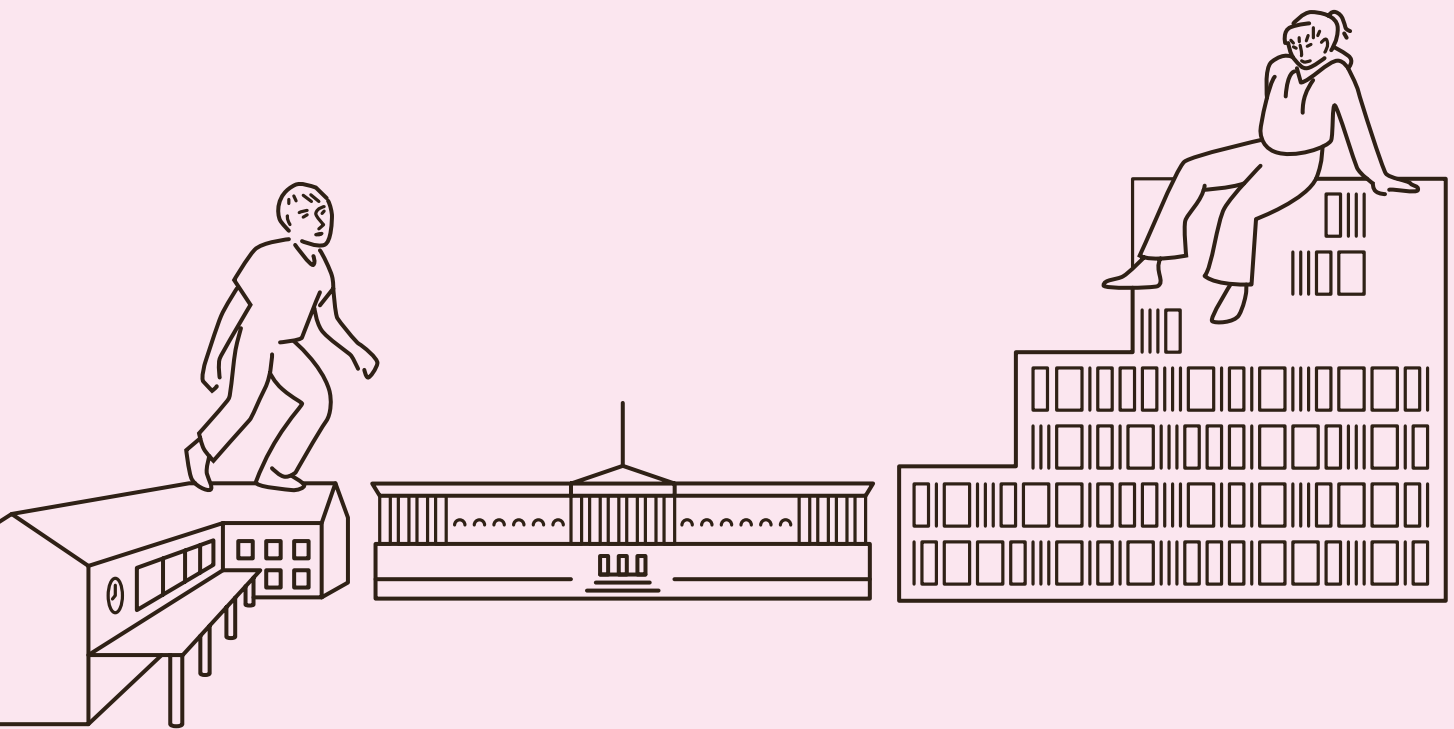


Funding for continuous learning and the potential of new technologies in Finland

Statement of the Future Competences Panel



FUTURE COMPETENCE PANEL



This statement was prepared by the Future Competences Panel appointed by the Ministry of Education and Culture.

The tasks of the panel include examining the development and effect of new technologies on competence needs; anticipating the development and alteration needs within education and making suggestions regarding the needs; promoting cooperation between higher education institutions, research institutes, and businesses on the sustainable utilisation of technology; and promoting a wider societal debate on the social impacts of technology. The panel was appointed in the autumn of 2017 and its work will continue until the spring of 2019.

The chair of the panel is Professor of Practice Anne Brunila, Hanken School of Economics. The other panel members are Cristina Andersson, non-fiction writer; Olli-Pekka Heinonen, Director General, Finnish National Agency for Education; Martti Hetemäki, Permanent Secretary, Ministry of Finance; Kaarle Hämeri, Chancellor, University of Helsinki; Sanna Järvelä, Professor, University of Oulu; Jari Kaivo-oja, Research Director, Finland Futures Research Centre; Esko Kilpi, CEO, Esko Kilpi Ltd.; Paula Laine, Director, Strategy, the Finnish Innovation Fund Sitra; Anita Lehtikainen, Permanent Secretary, Ministry of Education and Culture; Lauri Lyly, Mayor, City of Tampere; Ilkka Paananen, CEO, Supercell; Petri Rouvinen, Research Director, the Research Institute of the Finnish Economy (Etlä); and Riitta Salmelin, Professor, Aalto University. Matti Kajaste, Counsellor of Education; and Kari Nyyssölä, Head of the Foresight Unit, served as secretaries to the panel.

FOR ADDITIONAL INFORMATION, PLEASE VISIT:

<http://minedu.fi/hanke?tunnus=OKM047:00/2017>
Ministry of Education and Culture 2018

IMPLEMENTATION:

Kaskas Media Oy

INTRODUCTION BY ANNE BRUNILA:

Learning must become a civil skill

Learning and competences are an elemental part of our lives, and they will assume an even larger role in the future. This is why guaranteeing continuous learning must be the point of departure for all education, and for meaningful life in general.

For individuals, continuous learning is a way of making it in society and in the changing labour market. This requires a change of attitudes, for example towards education and occupations. We now think of continuous learning as an additional effort, while it should be a natural part of our education and training, careers and life paths. Each one of us must accept greater responsibility for maintaining and developing our competence in the future. To support this aim, society must offer services, incentives and guidance.

The objective of continuous learning puts the funding of education under a particularly severe pressure. Consequently, the Future Competences Panel has chosen funding as the focus of this statement.

Another great challenge to the model of continuous learning stems from the current polarisation of society. The development leading to inequality and social exclusion begins at an early age, and the differences between young people, for example, are growing at an appalling rate. Unfortunately, our education system today mainly reaches those who already have education, training and skills. One way of combating inequality is using technology to support learning. Technology-assisted learning is the second important theme of this statement.

Above all, adopting the model of continuous learning requires a change of attitudes and a new culture in our relationship with education. Learning should be a civic skill. If we manage to put the model of continuous learning into practice across society, we should see a lower unemployment rate, an essential reduction in structural unemployment and the labour market mismatch, and a significant drop in unemployment expenditure. This will also mean a better quality of life for people, increased wellbeing and reduced social exclusion.

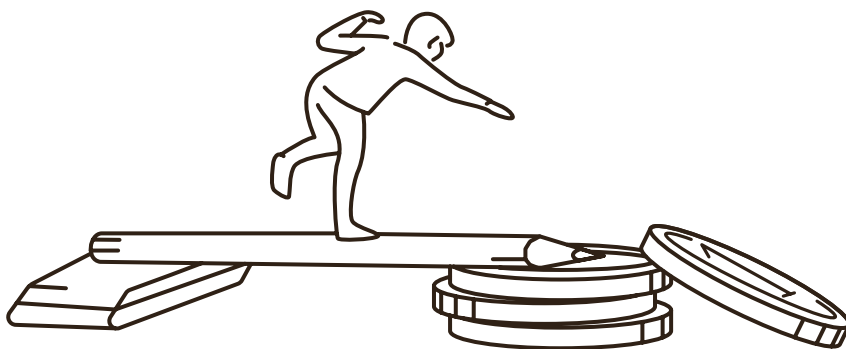
Anne Brunila

Chair of the Future Competence Panel



Learning must be funded in all life stages

A reform of funding and incentives for education is needed to promote continuous learning.



An effective funding system is a precondition for continuous learning. The Finnish education system relies heavily on public funding. The correct targeting of this funding at different life stages will be an increasingly great challenge in the future. A recent OECD report found that while Finland spends more public funding on education in proportion to GDP than any other OECD country besides Norway, the amount of private financing here is the lowest in the OECD. To bolster correctly targeted and transparent public funding, stronger private sector investments are needed, especially from companies. Learners must themselves also assume a greater share of responsibility for developing their competences throughout their lives.

The Future Competences Panel finds that, in order to secure continuous learning and future competences, a comprehensive model should be created, in which all funding for education is pooled and allocated to students and education providers as specific streams. The funding currently trickles through a number of different channels, which makes it difficult to see the big picture and, consequently, also select the focal areas required by continuous learning. The funding should follow individuals throughout their lives, making competence development a natural part of all life stages.

The Future Competences Panel believes that more attention should be paid to the adult population in the distribution of funding. The current funding share allocated to adults' competence development is too small. Contin-

uous learning means that you do not stop accumulating competence when you complete your qualification; on the contrary, you should be able to improve your skills throughout your adult life. The current funding system needs a shakeup to spread its centre of gravity more evenly across the individual's life span.

Sitra

PAULA LAINE:

"Self-leadership on the pathway of continuous learning is something that should be supported increasingly and for which more incentives should be provided in Finland. However, funding should be directed at areas with the greatest competence gaps to avoid a situation where people make great efforts to obtain training in disappearing fields."

Trickles of funding identified by Sitra

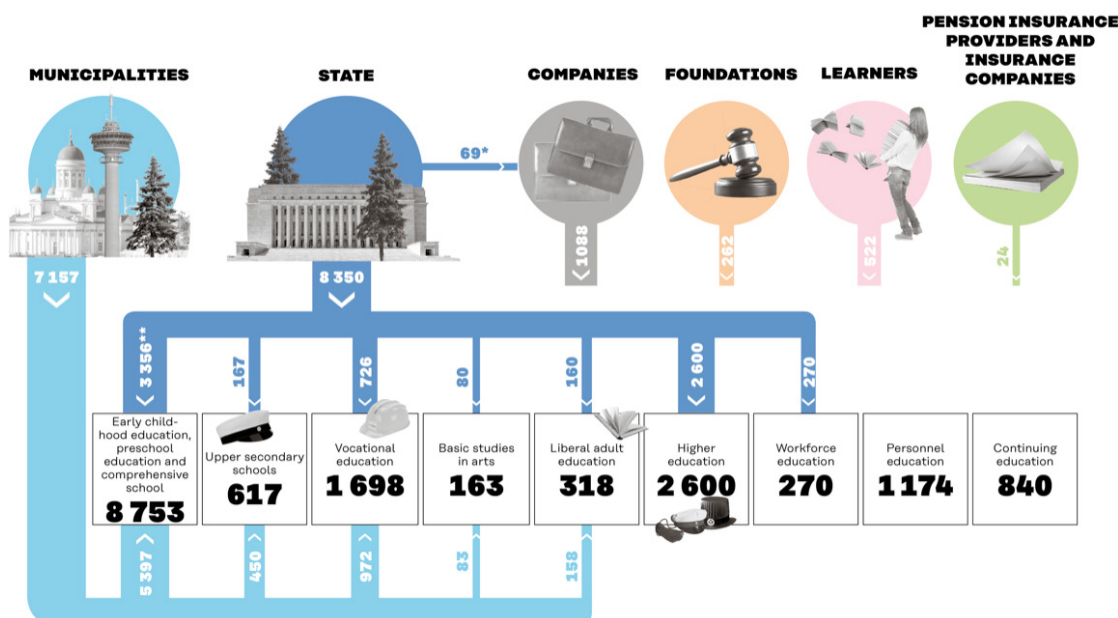
Sitra has prepared the first Finnish report on the funding streams for lifelong learning: who invests and how much, how is the funding divided between education providers, and how is an individual learner provided for?

The report titled *Millä rahalla? (On whose money?)* shows that almost EUR 20 billion is invested in education and competence development in Finland every year. This amount consists of both public and private inputs. The public funding providers for education are the central government and the municipalities. The funds are allocated to education providers through four ministries. Private funders of lifelong learning include businesses in the course of their employees' careers, foundations through grants to science and arts, earnings-related pension providers and insurance companies through rehabilitation provided for working-age individuals, and learners themselves.

Various income support forms are available for learners in different life stages. Depending on the stage of the learner's path, public funding intended for income support is channelled through the Social Insurance Institution, the Education Fund, unemployment funds, earnings-related pension providers and insurance companies.

Sitra's report shows that in the funding for lifelong learning, education and training leading to qualifications intended for children and young people are emphasised, and training acquired by individuals during their careers is mainly funded by employers or the learners themselves. Support forms are available for learners in different life stages, but they often are earnings-related, in other words based on a view of a steady working career with only momentary interruptions.

Education funding 2017, EUR million

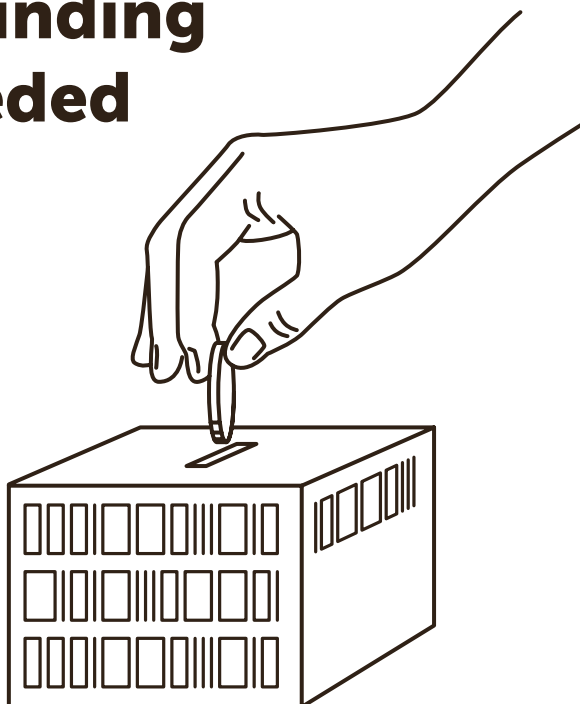


Sources: Statistics Finland (figures from 2016), Finnish National Board of Education (2017), the Ministry of Economic Affairs and Employment (2017), Association of Finnish Local and Regional Authorities (2016), the Ministry of Finance (2017), Council of Finnish Foundations (2017), Vipunen (2017)

*apprenticeship pay subsidy and tax deductions
** through municipalities, as a part of basic service funding

Easier access to funding for learning is needed

Access to funding for learning and finding suitable education and training must be made easier for the individual.



Businesses and individuals themselves must increasingly assume responsibility for learning, as public funding alone will not be sufficient to respond to the future competence challenge.

The central government should support businesses to make it as easy as possible for people to build up their competence during their careers. On the other hand, incentives, tools and support to enable learning must be offered to individuals, while keeping in mind that costs are always incurred from competence development. The Future Competences Panel believes that Finland should set the goal on a model where the learner can find the offer of continuous learning and the funding for it at a single location.

Different options have been tried and proposed for facilitating access to funding for continuous learning. With a training account or voucher, an employee, an unemployed person or an entrepreneur could purchase training from different providers and thus update their competence when it suits them. A training account or voucher could help share the responsibility for continuous learning between the learner, the employer and society. Different types of tax breaks have also been proposed. A study deduction would work similarly to the domestic help credit and encourage adults to purchase training services.

Businesses, on the other hand, are already able to deduct training services they offer to their staff from their taxable income, which provides an incentive to organise training.

The Future Competences Panel believes that in the future, there should be stronger integration of labour market training with continuous learning. The current funding forms seek to tackle unemployment when the individual already is jobless. In the future, the focus should be on preventing problems, above all, and competence development that aims to prevent unemployment should be funded.

Permanent Secretary at the Ministry of Education and Culture

ANITA LEHIKONEN:

“In order to ensure the equality of opportunities of continuous learning we should boldly consider the question of tuition fees in education.”

Stronger cooperation needed to turn Finland into a country of continuous learning

The transformation of work and the ensuing pressure to develop competence are a global phenomenon. The Future Competences Panel commissioned Gaia Consulting to prepare a report on actions other countries have taken to safeguard continuous learning and competence development.

The report reveals that the reference countries invest strongly in citizens' basic education and the development of good learning-to-learn skills, building competence for the needs of the future labour market, and creating effective continuous learning pathways.

In Finland, dialogue and cooperation between different actors in the field of education and training must be strengthened. The education system, businesses, private

service providers and the central government must jointly identify the type of competence in demand now and in the future. Education policy actions must be in line with this shared vision.

According to the report, the boundary between adult education and other education and training should also be softened, which would reinforce the idea of continuous learning. Among other things, this would be possible by giving citizens access to different learning materials and teaching platforms regardless of who provides the instruction. The learning pathways should additionally offer more opportunities for on-the-job learning, traineeships and building of digital skills.

THE IRISH SPRINGBOARD+

The original purpose of this Irish project focusing on higher education was to tackle soaring unemployment by offering free higher education, especially in fields suffering from labour shortages (which in Ireland included ICT, construction, hospitality, startups and international finance). The education programmes on offer led to different diplomas, the majority of which could be completed in less than a year as part-time studies. In recent years, the project has also been accessible for the employed, partly subject to a fee.

THE CANADIAN GOVERNMENTAL CANCODE PROGRAMME

In 2017–2019, Canada will invest approx. EUR 33 million every year in developing children's, young people's and teachers' coding and digital skills. An estimated one million Canadian children and young people will participate in this programme.

Learning assisted by technology

At best, technology can even out opportunities for learning and improve the quality of teaching.



The Future Competences Panel considers technology-assisted learning the only realistic way of coping with the immense challenge of continuing training, which is already here.

Technology already plays an important role in supporting smart activities and human learning. Good digital learning environments address the needs of different learners and offer opportunities for studying whenever and wherever the student are. E-learning makes it possible to train large numbers, even entire nations. Technology will improve the impact and quality of contact teaching, as some of the learning takes place online. For example, students can watch lectures online and discuss them face to face in the classroom.

However, technology is not limited to being used as a platform for teaching, online courses or virtual learning contents. At best, it helps us become better learners. The Future Competences Panel believes that more research is needed in technology-assisted learning to find out precisely in which situations technology genuinely serves learning.

At the same time, we should remember that technology is not a universal remedy when it comes to supporting learning. Competence related to interpersonal interaction, for example, cannot be fully transferred onto technical platforms, and there will be an increasing need for interaction and communication skills in the future. Practising learning-to-learn skills is also important, as they give pupils capabilities for coping with learning situations both inside and outside the school.

Professor at the University of Oulu

SANNA JÄRVELÄ:

“The latest research is already throwing light on how technology could be used to activate and assist human learning. However, more research is needed to help us understand the learning process better. For instance, what do humans feel or think about while learning? What will change when they are assisted by a machine rather than another human? Humans are socially sensitive and feeling beings, and this affects learning in ways that are not yet well known.”

Agile experiments with access to training

A number of different online services responding to the challenges of continuous learning and competence development have already been launched, and more are being designed.

MOOC (massive open online course) Koski

MOOCs are online courses organised for great masses. These courses are usually open. They are made available by higher education institutions, in particular, but private operators have also added to the course offer. An example of a successful MOOC is the free artificial intelligence course of the University of Helsinki and Reaktori, which has already attracted tens of thousands of registered students from around the world. The full potential of MOOCs has not yet been leveraged in Finland. A French digital university, for example, has a wide range of free courses in a variety of fields offered by different educational institutions around the world.

Koski is a service that brings together Finnish people's educational history from individual study attainments to qualifications. The web service also contains information on study rights as well as the key contents and competence requirements of the qualifications completed. The information is gathered from existing data reserves. The Koski service helps to perceive how continuous learning could be realised and what the obstacles to it are. Koski is part of the public sector's Studyinfo.fi service package maintained by the Finnish National Agency for Education and the Ministry of Education and Culture. It became available in spring 2018, and its full-scale launch will take place in 2019.

ECOLE 42

Ecole 42 is a free programming school maintained on private funding. Anyone aged between 18 to 30 can apply, regardless of their educational background. The first Ecole 42 in France in 2013 attracted 80,000 applicants, of whom 3,000 were admitted. The school has no lecturers or teachers; the instruction is based on project and peer learning. Student assessment and progressing in the studies are also based on peer assessment, and the competition is tough. During the three-year programme, the students evolve into top-class coders and implement different projects, retaining the IPR rights to their work.

Compleap

The Compleap project improves the match between the demand and offer of competence, especially for immigrants and NEETs. The objective of the project is to build a digital ecosystem in which learners can find suitable education and training services. This project, which was launched in December 2017, is being implemented by the Finnish National Agency for Education together with CSC, the Dutch Dienst Uitvoering Onderwijs (DUO), the University of Oulu and Jyväskylä Educational Consortium Gradia.

Aurora

Aurora, a national network of artificial intelligence and autonomous applications, is currently under construction. In connection with Aurora, life event pilots were initiated, which strengthen society's ability for anticipation. One of the pilot projects explores gaining access to working life through continuous learning. The project is led by the Ministry of Finance.

Job Marketplace

The Job Marketplace is a web service launched by the Ministry of Economic Affairs and Employment and the ELY Centres, which will over the next few years gather all services for jobseekers and employers in a single location. This web service will have a broad range of services related to recognising and developing an individual's competence provided by public and private actors. The objective is to use artificial intelligence for recognising competence and offering tailored options.

Osaamisbotti

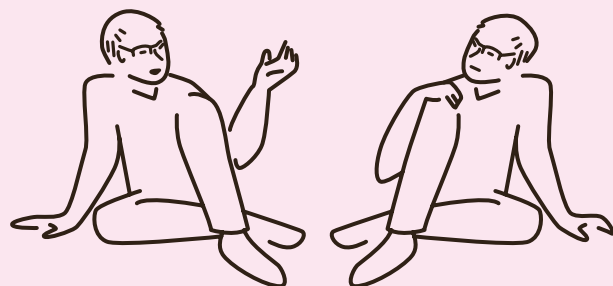
Osaamisbotti, a successful participant in Sitra's Ratkaisu 100 competition, is an online tool which offers coaching and services for finding employment, career guidance and personnel development. In the employment services of Tampere sub-region, for instance, the tool has been used in interviews to scrutinise a new applicant's competence.

VISIONS OF THE FUTURE COMPETENCES PANEL:

Digital twin

A competence database based on artificial intelligence would make visible all types of competence and different skills possessed by an individual. It would also show competence that is difficult to verify. A large share of human competence is indeed acquired in non-formal learning, and these skills are extremely valuable in the era of rapid changes. A competence database powered by artificial intelligence would also be able to serve as a learning coach: advise individuals about aspects they should next pay attention to, and even offer suitable training services.

In the years to come, the competence database could evolve into a "digital twin", serving as an individual's competence bank, competence coach and interactive learning partner.



Recommendations of the Future Competences Panel

THE FUTURE COMPETENCES PANEL PUTS FORWARD THE FOLLOWING PROPOSALS:

- In order to secure continuous learning and future competences, a comprehensive model should be created, in which all funding for education and training is pooled.
- More attention should be paid to the adult population in the distribution of funding.
- Finland should set the goal on a model where a learner can find the offer of continuous learning and funding for it at a single location.
- In the future, labour market training should have closer links with continuous learning. The integration of digital learning with electronic labour force services should be improved.
- Technology-assisted learning is the only realistic way of coping with the on-going challenge of continuing training. More research is needed in technology-assisted learning, however, to find out precisely in which situations technology genuinely serves learning.
- In technology-assisted learning, and in the promotion of continuous learning in general, special care should be taken to realise equality, and efforts should be made to reduce inequality.

Sources

Aurora: <https://vm.fi/ihmiskeskeinen-yhteiskunta>

Koski service: <https://www.oph.fi/kehittamishankkeet/koski>

Compleap: <https://www.oph.fi/kehittamishankkeet/compleap>

OECD: Education at a Glance 2018, <https://doi.org/10.1787/eag-2018-en>

Osaamisbotti: <http://osaamisbotti.fi/>

Job Marketplace: <http://tyomarkkinatori.fi/>

Sitra report Millä rahalla?: <https://www.sitra.fi/julkaisut/milla-rahalla/>



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