



Summary of the Ministry of Education and Research's **Annual Report for 2018**

Overview of the implementation of
the Estonian Lifelong Learning Strategy,
the Youth Field Development Plan,
Strategy "Knowledge-based Estonia",
the Development Plan of the Estonian Language
and Archiving Programme



Prepared by: Analysis Department of the Ministry of Education and Research. Performance field reports are based on programme reports and the annual analysis for 2018 (as of April 2019).

References: Ministry of Education and Research (2019). Summary of the Ministry of Education and Research's annual report for 2018. Tartu: Ministry of Education and Research.

<https://www.hm.ee/et/tegevused/uuringud-ja-statistika-0>

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The Ministry of Education and Research is a government agency whose main task is ensuring the efficient and proper development of education, research, youth and language policies, and high-quality and competitive research and development activities.

The ministry's mission **is to create opportunities for lifelong learning and development for all**. We design education, research, youth and language policies to ensure that Estonia is a favourable environment for the creation, acquisition and use of knowledge, and where people are able and willing to learn throughout their lives. Our aim is for **people to be responsible for their learning, to be creative, entrepreneurial and open to innovation, and to contribute to the creation of a cohesive and democratic society**.

The governance area of the Ministry of Education and Research contributes to achieving the aims of the Government of the Republic in four performance areas: **education; research; Estonian language and mindset; and state governance**. We are responsible for implementing the following strategies:

Estonian Lifelong Learning Strategy 2020
Knowledge-based Estonia 2014–2020
Youth Field Development Plan 2014–2020
Development Plan of the Estonian Language 2011–2017 (2020)

We contribute to the area of state governance through archiving activities.

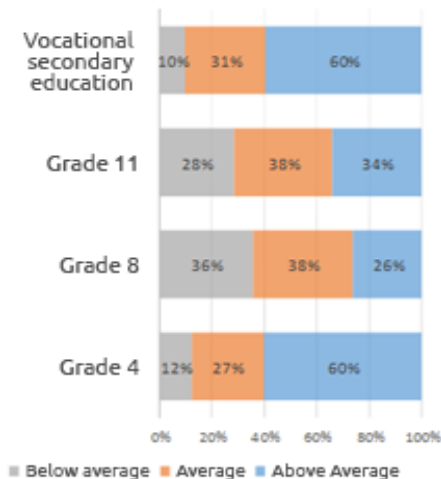
EDUCATION

General goal of the Lifelong Learning Strategy:

Learning opportunities that are tailored to people's needs and abilities are provided for everybody in Estonia throughout their lives in order to ensure opportunities for dignified self-actualization in society, work and family life.

Satisfaction with lifelong learning is one key indicator of the strategy. In 2017, the first comparative survey of the satisfaction of different parties (students, parents and teachers) was carried out at kindergartens, general education schools and vocational schools.

Satisfaction of students at school 2018



The level of satisfaction varies by stage of study and is highest among the youngest students and those in vocational secondary education; the satisfaction of one in every three students from Grade 8 is below average.

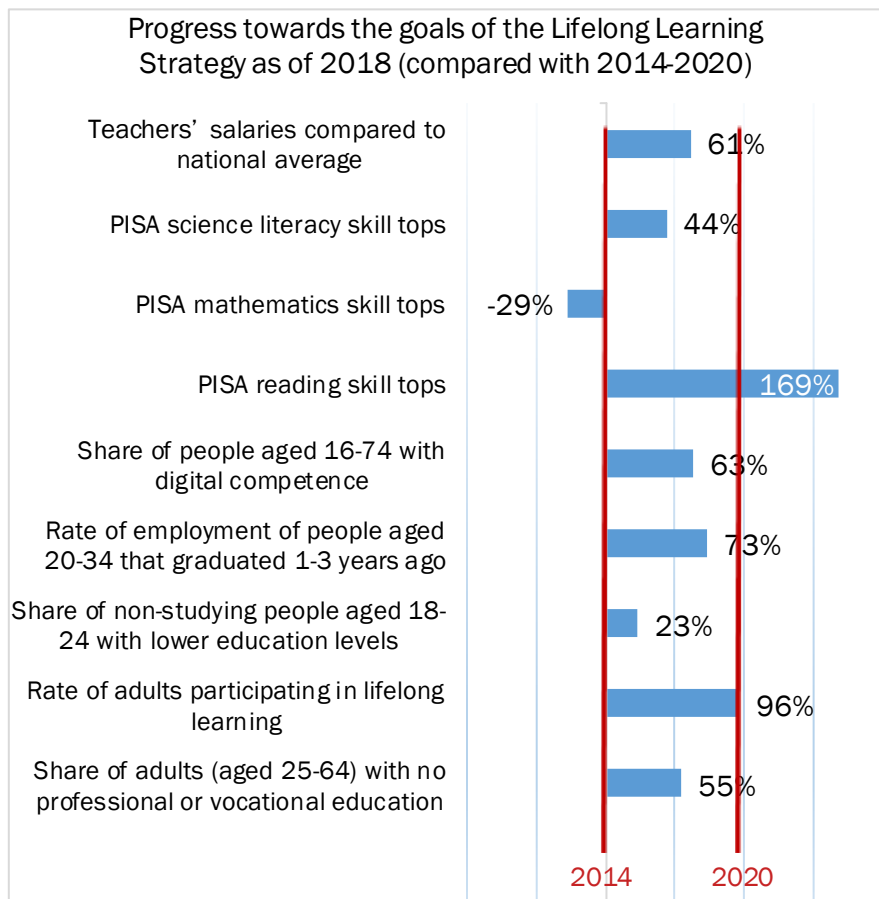
Students that are more satisfied with the school are also more interested in the studies.

From satisfaction-related aspects, general education students gave lower ratings to physical activity opportunities at school, meaningfulness of studies and collaborative teaching.

General assessment

There are **10 key indicators** that have been set to measure the general goal of the Lifelong Learning Strategy. **For eight of the 10 key indicators, we have made progress towards the set goals.** It is too early to assess the changes for one specific indicator (satisfaction with lifelong learning). In the case of six indicators, progress has been as expected, i.e. half the distance (at least 50%) towards the 2020 goal has been covered.

The employment and salaries for graduates of both higher education and vocational education indicate an upward trend, which shows a labour market need for specialists with professional skills. The participation of adults in lifelong learning is increasing, and people with lower levels of education are becoming more and more involved in learning. As a positive trend, the share of people with no professional or vocational education is decreasing. The average gross monthly salary for teachers in general education schools has been higher than the Estonian average gross monthly salary since 2014 and has increased faster than the Estonian average salary.



The figure indicates movement towards the key indicators of the Lifelong Learning Strategy in 2018, or as of the last measured year (the results of the 2018 PISA test will be released in December 2019), compared to 2014 (level 0); the level for 2020 is 100%.

The Lifelong Learning Strategy has set **five strategic goals**:

1. Change in the approach to learning:

3/7 – in the case of three out of the seven indicators we have moved in a positive direction compared to 2014: school dropout in general and vocational education has decreased. At the same time, the number of students with lower skill levels has increased.

2. Competent and motivated teachers and school leadership:

2/3 – the share of young and male teachers has increased compared to 2014.

3. Concordance of lifelong learning opportunities with the needs of labour market:

2/4 – the share of STEM graduates and the short-term mobility of university students has increased in higher education, while the share of those opting for vocational education after basic school has decreased and the popularity of vocational secondary education has not increased among the students at the secondary education level.

4. Digital focus in lifelong learning:

most indicators cannot be measured in the agreed manner; in 2018, for the first time, the level of digital skills of basic school graduates was assessed.

5. Equal opportunities and increased participation in lifelong learning:

4/6 – participation in pre-school education and the share of people with higher education has increased and the indicators of used space and educational cost efficiency have improved, but Estonian as a second language skill at the end of basic school remains a concern.

Good or very good development:

- children's participation in pre-school education is high, the share of children whose mother tongue is not Estonian participating in Estonian pre-school education has increased year by year, including the number and share of participants in language immersion; the pre-school teacher curriculum is one of the most popular among applicants;
- drop-out rates from daytime studies in general education schools are relatively low;
- after the transition of instruction to Estonian in upper secondary schools to Estonian, Estonian language skills of upper secondary school graduates have improved;
- basic school graduates have good basic skills in ICT;
- the increase in teachers' salaries in Estonia has been one of the fastest among OECD countries and continues to be the country's strategic goal;
- the share of people without professional or vocational education is decreasing;
- employment and salaries for graduates of both higher education and vocational education indicate an upward trend, which also shows a labour market need for specialists with professional skills;
- over the last three years, the share of adults participating in lifelong learning has rapidly increased; it is pleasing to note that this growth is faster among people with lower level of education;
- the number of STEM graduates is increasing; the ICT field is promoted;
- both the number and share of foreign students have increased, especially in doctoral studies, where one in every three students is a foreigner.

More attention needs to be paid to:

- the share of young people aged 18–24 with a low level of education who are not studying is more than 11% and has increased in recent years; the increase in the share of people without upper secondary education in younger age groups and gender gaps in learning pathways after basic school (the share of non-studying women with a low level of education is about 6%, the respective indicator for men is 16%);
- drop-out rates from vocational and higher education, as well as non-stationary general education are high;
- the share of young teachers has made a minor positive change in the past year (from 10.6% to 11.0%) but the attractiveness of teaching profession and the competitiveness of teacher salaries still pose a challenge. The competition to teacher training curricula is low (as a ratio of 0.9 to the average of all curricula);
- the Estonian language skills of students with non-Estonian native language have not improved at the expected pace by the end of basic school. Access to support services for children with other native language and Estonian language skills of teachers remain a problem;
- the unequal changes in the number of students in different geographical areas have set high expectations for the continuation of the school network reform. Over the past decade, the number of basic school students has grown in Harjumaa and Tartumaa counties only. The largest decreases in basic school student numbers have been seen in Hiiumaa, Jõgevamaa, Võrumaa and Põlvamaa counties.

The Lifelong Learning Strategy considers it a significant issue that the approach to learning adopted in theory and confirmed in documents **and the valuing and identification of different types of talents and special needs have not become an integral part of the learning process.**

Society focuses too much on state examination results in terms of education and school quality. Additionally, the high dropout rate (especially among male students) could be reduced at all educational levels and segments with learning methods that are more individualised, practical and problem-based.

The aim is to apply an approach to learning that supports the individual and social development of students and develops their creativity and enthusiasm at all educational levels and in all segments.

The following programmes contribute simultaneously to achieving this aim: competent and motivated teachers and school leadership, the learning and career counselling programme, the vocational education programme, the higher education programme and the general education programme.

Indicators:

Share of students with lower skill levels:
functional reading – **10.7%**
mathematical literacy – **11.2%**
science literacy – **8.7%**

Dropout rate from basic school – **0.3%**
Dropout rate from general upper secondary school – **1%**
Rate of interruption of studies in vocational secondary education – **23.4%**
Dropout rate from vocational secondary education – **11.7%**
Rate of interruption of studies in higher education – **21.6%**

1. Changed approach to learning

Good or very good development:

- increase in the openness of and readiness for cooperation of educational institutions – the community's expectations are being considered more and different methods are being applied to ensure a physically and mentally safe learning environment for students;
- ensuring students' well-being, appropriate and equal learning opportunities in schools have received a great deal of attention – for children in need of support, the state budget contribution to local governments and owners of private general education schools was significantly increased in 2018;
- satisfaction surveys show that most students feel good at school and think that school is interesting. School satisfaction is highest among youngest learners and lowest among students of Grade 8;
- vocational secondary education students are satisfied with their education, and adults in vocational training also have a high level of appreciation for the overall well-being of the school.

More attention needs to be paid to:

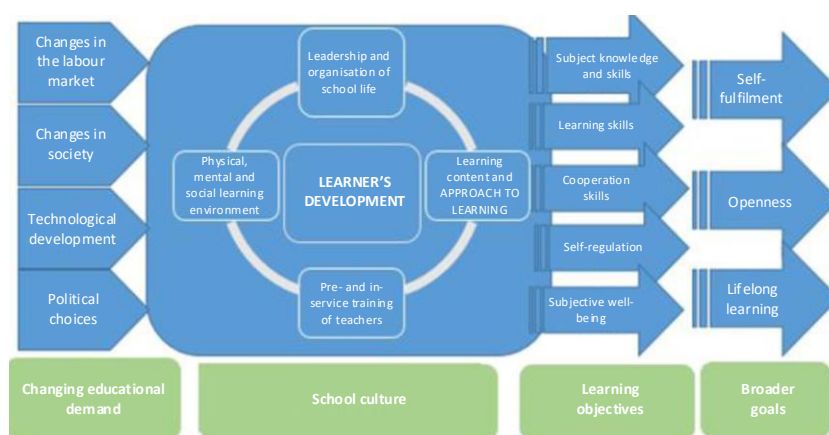
- Satisfaction surveys point to a continuing need to prevent school bullying, to ensure better physical activity opportunities, and to pay attention to the meaningfulness of studies and collaborative teaching. Boys and students with Russian as their mother tongue experienced more school bullying. Children with special educational needs and from families in worse economic situation are also more likely to be bullied at school;
- In satisfaction surveys, teachers gave lower ratings to the reputation of the teaching profession and to funding of education; similarly to students, teachers also experience bullying in schools, both by students and by other teachers and parents;
- Absenteeism is still quite common in basic schools and even more so in general upper secondary schools;
- There continue to be differences in learning outcomes of students between urban and rural areas and in different counties; the differences are reflected in the learning pathways. Learning outcomes in basic school have the strongest impact to the probability of obtaining upper secondary education – the better the average grade, the higher the probability to reach upper secondary education;
- There are major regional and gender differences in learning pathways after basic school in Estonia. In Ida-Virumaa county, 42% of basic school graduates continue in vocational education, while in Tartumaa, only 20% of basic school graduates do so. The largest gender-dependent selection differences are in Valgamaa and Võrumaa, while the smallest is in Tartumaa;
- Obstacles to the application of the principle of inclusive education are the excessive burden on teachers, the lack of specific know-how and the consequent inability to give the necessary attention to pupils with special educational needs. The uneven availability of specialist support services continues to be of concern.

What can be taken from the studies and analyses of the approach to learning?

- More cooperation across education levels; we need to increase the flexibility and harmonise the quality at all levels and fields of study.
- Different learning pathways in upper secondary education must be equally valued and provide access to higher education.
- The area of inclusive education still needs attention, including the development of support services to create the system that supports lifelong learning.
- In developing curricula and organisation of studies, more attention must be paid to 21st-century skills and competences, including cultural competence, communication skills, entrepreneurship, learning capacity, digital skills, etc.
- Alongside good knowledge and skills, it is necessary to pay more attention to the application of contemporary learning approaches in Russian-language schools as well as to quality assurance in schools that need support.
- The school leaders in cooperation with the school owners should contribute more to the development of teachers and school teams, provision of support and counselling, to ensure attractive working conditions and foster the willingness of school teams to support changes in education and to be a leader in educational innovation.

In 2017, the Ministry of Education and Research and Tartu and Tallinn universities developed **a framework for the changing approach to learning, with the aim of offering a background system and overarching support to educational institutions** and their partners to help understand the wider landscape and position of their activities.

In 2018, nationwide satisfaction surveys were carried out for the second time to measure aspects of the changes in the approach to learning. These surveys make it possible to monitor how students feel about their involvement in the learning process and the extent to which they perceive receiving feedback that supports development. Among teachers, the areas of collaborative teaching, diversification of studies and support for learners' activities were assessed. In 2018, a survey of the evaluation systems used in Estonian general education schools was completed, which showed that there are already several good practices in Estonian schools regarding one aspect of the changing approach to learning – feedback that supports the development of the learner – but also the survey highlighted a number of challenges in updating the evaluation of support for learner development.



The framework is available at www.hm.ee/opikasisus

Significant actions and decisions in 2018:

- Preparations were made for updating learning outcomes in all subjects, general competences and transferable themes, organisation of studies and evaluation in national curricula;
- in the period 2014–2018, support was provided for teachers' participation in in-service training in approximately 16,400 cases, and in 4,500 instances of in-service training for heads of educational institutions;
- for children in need of support, the state budget contribution to local governments and owners of private general education schools significantly increased in 2018; from 2018, support specialists can apply for benefits from beginners' incentive scheme;
- counselling teams are operating in every county, making recommendations to support the development of students, to organise studies, and to implement support services;
- in the period 2014–2018, a total of approximately 120,000 children or youth and 70,000 parents and members of school teams received education counselling and career services in Rajaleidja centres;
- VUNK!, the network of schools calling for more physical activity Coordinated by the physical activity laboratory of the University of Tartu, had over 80 general education schools as members as of 2018;
- There is still strong interest in a number of other programmes and networks aimed at increasing the student focus of school culture and the well-being of students, such as KiVa, which as of 2019 has enrolled more than 70 schools, including 26 schools in 2018;
- At the end of 2018, the Estonian Parliament approved the amendments to the Vocational Educational Institutions Act, which changed the principles for financing vocational educational institutions and assessing the quality of vocational training, and created the basis for drawing up vocational orientation curricula. The target groups for these curricula are both basic school and secondary school leavers, basic school graduates who are unsure of their future learning choices in vocational training, persons with special needs, foreign learners and other groups of learners.

The changes in society and student numbers that have occurred and are currently occurring also affect teachers, academic staff and heads of educational institutions. Discussions focus on the teaching profession, professional development opportunities for teachers and school leaders, decent salaries and appreciation of the positions of teacher and school leader.

The Lifelong Learning Strategy outlines the key issue in this area, namely the unattractiveness of the teaching profession, which explains why schools lack both young and male teachers, the weak competition for teacher training programmes, and why those who have completed teacher education do not start working in schools.

The aim is to ensure that the assessment and salaries of teachers/lecturers and leaders meet the requirements set for these jobs and the results these positions produce.

The prerequisite for increasing the attractiveness of the professions of teacher and school leader is a **decent salary**. The state's aim is to set the average teacher's salary at 120% of the Estonian average salary, i.e. equal to the average salary of a specialist with higher education.

This aim will be achieved with the help of the competent and motivated teachers and school leadership programme.

2. Competent and Motivated Teachers and School Leadership

Good or very good development:

- Teachers' salaries have risen by almost 60% in the past five years: the average gross monthly salary of a municipal school teacher was just over 800 euros in 2012, but had increased to 1475 euros by 2018, totalling 113% of the average Estonian salary. The salary of teachers in vocational educational institutions came close to the average salary of teachers in general education schools (EUR 1439);
- In 2018, local governments raised the salary of kindergarten teachers to 85% of the minimum wage for teachers in general education school, i.e. to 978 euros, and by 2019, the salary of kindergarten teachers should be at least 90% of the school teacher's minimum, i.e. EUR 1125 per month, and the salary of teachers with MA degrees should be 100% or EUR 1250 per month;
- the number and proportion of young teachers is growing: in the 2018/2019 academic year, there are 1698 young teachers in Estonian general education schools, making up 11% of all teachers. The share of men among younger teachers has grown: among teachers aged 39 and less, men make up a fifth on average.

More attention needs to be paid to:

- Alongside securing wage growth, the big challenge is ensuring a stable supply of professional teaching staff across the whole country. Although the total number of teachers has increased by about 5% in the last five years, sufficient number of subject teachers cannot be found everywhere. The number and proportion of teachers aged between 40 and 49 is consistently decreasing;
- Problems are caused by the uneven distribution of workloads in different schools and regions. A total of 34% of teachers, including 42% in general education schools, 57% in vocational educational institutions and 16% in pre-school education institutions, have a part-time workload;
- The interest in teacher training curricula (competition in 2019 – 0.9) is not sufficient to guarantee the new generation of teachers. The number of students planning to become subject teachers is insufficient to cover age-related replacement needs, and there is a shortage of science and mathematics teachers. In addition, a large proportion of teacher training graduates will not start working as teachers or will be employed for a short period of time;
- there is an issue with higher education financing: regardless of the increase in the state financing following the higher education reforms, the lecturers' salaries still cannot be maintained at a competitive level. According to the Board of Association Universities Estonia, the average basic salary for academic staff at public universities for full-time work in 2017 was €1417–2169 per month depending on the institution. In posts where, as a rule, a doctoral degree is required, the salary for professors was €1965–3724, for associate professors €1430–2569 and for lecturers €1207–1775 per month. The salary of teachers in higher education is €1102–1353 per month.

Significant actions and decisions in 2018:

- In 2018, an amendment to the Education Act entered into force, allowing the recognition of education workers with a lifetime achievement award and the annual national awards and scholarships. In 2018, for the first time, the Government of the Republic granted nine national annual awards to education workers and one lifetime achievement award. In addition, up to five scholarships are awarded each year to teachers to support development activities that are relevant to education policy;
- Initiatives to enhance the reputation of the teacher's profession were continued: *Hariduse tulevikutegijad* (the Education Future Makers), *Õpetaja – hariduse kõneisik* (Teacher – Spokesman for Education) programmes, inspirational days and seminars, etc.;
- The possibility of using coaching support was created to support the heads of educational institutions in implementing the changes. A development programme for head teachers was launched.

Indicators:

Share of teachers aged 30 or younger - 11.0%

Competition for place in teacher training programme - 0.9

Gender structure of teachers female/male - 85.5/14.5

To ensure the sustainable functioning of society, it is important that every individual finds a place in the labour market according to their skills and is able to react to changes on the labour market quickly and flexibly.

According to the Lifelong Learning Strategy, the key issue in this area is the excessive difference between what is offered as part of lifelong learning and what the labour market actually needs. Educational institutions and the world of labour are not cooperating actively to develop the lifelong learning system, information regarding the labour market and the development of the economy is not systematic and career counselling services are uneven in terms of quality and accessibility. Moreover, an insufficient number of workers with the necessary skills are being prepared for the labour market.

The aim is to create high-quality, flexible and diverse learning opportunities and career services that take the development needs of the job market into account in order to increase the number of people with professional qualifications across various age groups and regions.

The following programmes contribute simultaneously to achieving this aim:

the general education programme, the school network programme, the study and career counselling programme, labour market and education cooperation programme, higher education programme and the vocational education programme.

Indicators:

Share of STEM graduates in higher education – 27.7%

Rate of basic school graduates that continue full-time studies in vocational education – 25.8%

Division of upper secondary school students (%) between general upper secondary education and vocational upper secondary education – 73.2/ 26

Students' short-term learning mobility – 3,4%

3. Concordance of lifelong learning opportunities and labour market needs

Good or very good development:

- As a whole, the employment of people that have completed higher education and vocational education studies has increased over the years. Data from the "Success in the Labour Market" study (registry data) show that the employment rate for 2016 vocational education graduates was 77% in 2017 and unemployment was 6%; in 2017, 82% of people who completed higher education studies were employed, with an unemployment rate of 2%. Vocational and higher education alumni assess their competitive advantage in the labour market in general as good;
- The number of vocational education students carrying out apprenticeship-based study is increasing: in the 2017/18 and in 2018/19 academic year, slightly more than 1700 students were engaged in apprenticeships, which is approximately 7% of all vocational training students;
- The completion of vocational training through a vocational examination has increased significantly. 60.5% of all vocational training graduates passed the vocational examination in the 2017/18 school year;
- A positive trend in recent years has been the rapid rise in adult learners (25+) in vocational training: in 2018, the number exceeded 9,000 and the share of all the students in vocational training had increased to 40%;
- Short-term student mobility for Estonian university students is still low compared to the target of 10% (3.4% in 2018), but has increased steadily in recent years. In the 2018/2019 academic year, the share of foreign students increased by 11% and there is a high probability that growth will continue as foreign students accounted for 13% (and up to 37% in doctoral studies) of admitted students. The contribution of students of international backgrounds to the Estonian labour market is also growing: in 2017, about a quarter of graduates from Estonian higher education remained in Estonia.

More attention needs to be paid to the following:

- Taking a long-term view, 10 years after graduating 17% of graduates (22% from vocational education and 14% from higher education) are "lost" to Estonia because they leave the country or for some other reason. By specialty, the greatest number of people "lost" among vocational education graduates are in the fields of manufacturing, construction, personal services and health, while in higher education it is in the field of social and behavioural sciences, health and in languages and arts;
- Among young people, the popularity of vocational training has not significantly increased. The distribution of basic school graduates between vocational and general upper secondary education has not changed in the last 10 years. The results of a survey of Grade 8 and Grade 11 students showed that awareness of vocational training opportunities among students is low and that information about the opportunities and benefits of vocational training do not reach young people. However, the data show that a significantly increasing number of young people are finding their way into vocational education three years after completing basic school – around 37–38%;
- In the last ten years, the share of upper secondary school graduates continuing studies in Estonian higher education has decreased by almost 10%, from 61.6% in 2010 to 52% in 2018. In the same year, 40.1% of upper secondary school graduates did not continue their studies in Estonia. The lower continuation rate of upper secondary school graduates to higher education results both from their going abroad (including for studies) and from taking up employment;
- The share of people that have completed vocational upper secondary education and continue their studies in higher education is still very low – 9% of graduates in one year on average. On average, 8% fewer young people with Russian as their mother tongue continue studies in higher education than young people with Estonian as their mother tongue, while graduates of upper secondary schools further away from the centres will also be less likely to continue in higher education.

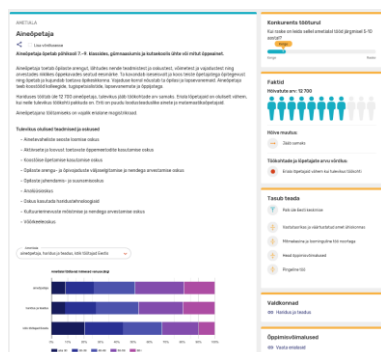
The economy is divided into 24 OSKA sectors. Every year, analyses are conducted and proposals made for the better integration of the needs of the labour market and training offer in five or six OSKA sectors.

2016–2018 sector analyses:

- accounting
- ICT
- metal and engineering industry
- forestry and timber industry
- social work
- construction
- energy and mining
- production of chemicals, rubber, plastic and construction materials
- agriculture and food industry
- health care
- transportation, logistics, repair of motor vehicles
- education and research
- trade, rental and repair
- accommodation, catering and tourism
- HR, administrative work and business consultation
- apparel, textile and leather industry

In 2019, a new OSKA 2020+ vision will be developed.

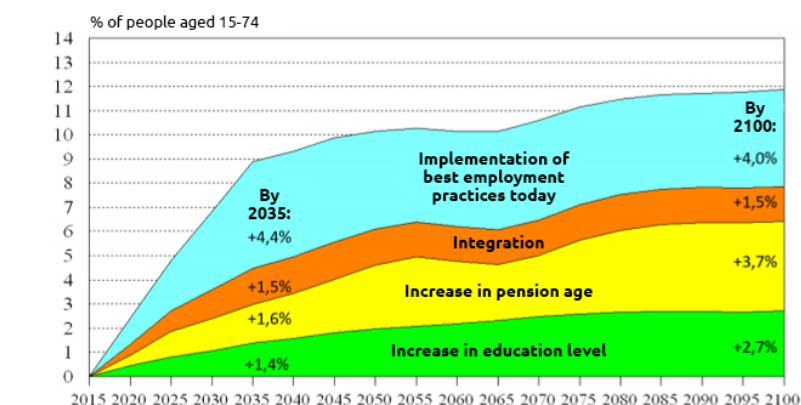
In 2019, a visual environment will be launched to present the survey results and proposals.



OSKA visual environment:
<https://haridusportaal.edu.ee/oska>

Significant actions and decisions in 2018:

- Apprenticeship options have been expanded. As of the end of 2018, 4,141 students (the aim by 2021 being 7,200) had participated in apprenticeship with the support of the labour market and education cooperation programme. Apprenticeship students make up 7% (5.5% in 2016) of all vocational education students, and three-quarters of vocational educational institutions offer this type of learning; pilot programmes for work-based learning in higher education have been started – three higher education institutions apply these programmes (Estonian Entrepreneurship University of Applied Sciences (EUAS), Tallinn Health Care College and Tallinn University of Technology);
- OSKA reports were prepared in 2018 with labour need forecasts in five areas, as well as a survey report entitled "The Estonian labour market: today and tomorrow," which provides an integrated overview of future employment changes in general and by economic sector.
- As a result of the entrepreneurship programme, the readiness of schools to teach entrepreneurship has increased – 367 schools across Estonia have already been enrolled in the entrepreneurship programme; 2,225 teaching specialists participated in in-service training;
- the number of specialties for professional mastership competitions has increased to 34, with 31 competitions taking place under the banner of the Noor Meister 2018 event. A professional mastership competition strategy for 2019–2022 was drawn up for further development of competitions. The proposed measures and the change in the format of the competitions will help to attract media attention to the professional mastership competitions, which will in turn increase the awareness and interest of the target groups in vocational education;
- A quality assessment of the practical training process was piloted to streamline activities related to practical training in schools and to highlight best practices and problem areas. Ten vocational and higher education institutions participated in the quality assessment, in seven of which the practical training process was of good quality;
- In 2018, 16,498 adults acquired new skills in the courses of the state-commissioned education for in-service training in vocational training institutions, and 15,451 (93.7%) of the participants were certified. In order to ensure the quality of the courses of the state-commissioned education, training of trainers was carried out in fields of andragogy, curriculum development for in-service training and assessment methods in outcome-based learning (a total of 857 trainers were involved);
- The second call for proposals to develop key competences was announced. Together with the first-round projects, the aim is to train more than 9,600 adults in key competences development projects by 2020;
- The methodology for drawing up professional standards has been updated, with a key change in the description of future skills; a model for describing future and digital skills in professional standards has been developed, on the basis of which the specifications for digital skills have been supplemented in professional standards;
- Work on higher education legislation continued, in order to simplify and streamline higher education regulations and prioritise students and their rights and obligations. The laws were adopted in February 2019;
- In 2018, administrative contracts with universities for the period 2019–2021 were prepared. The main purpose of the negotiations with universities was to clarify areas of responsibility and to reduce the acceptance of students outside the areas of responsibility.



Possible increase in employment rate due to different components. Source: Puur et al. (2018).
 Employed in the background of employment scenarios and EIA population forecast.
 Figure: OSKA survey "The Estonian labour market: today and tomorrow 2018"

The Lifelong Learning Strategy highlights the most significant issues in this area as being the fact that nearly a third of Estonia's working-age population lack the minimum digital skills and ICT skills necessary for work and that students' access to digital infrastructure and digital learning materials is lacking and unevenly provided.

The aim is to use modern digital technology more expediently and proficiently in learning and teaching, to improve the digital skills of the population as a whole and to ensure access to next-generation digital infrastructure.

The digital focus programme has been established to achieve the digital focus aims.

In 2018, the Information Technology Foundation for Education (HITSA) has begun monitoring technology trends in education. Monitoring will help keep Estonian education workers informed about the evolution of technology and related teaching methodologies around the world.

Each year, the board of experts focuses on selected technology trends and examines their link to education.

In 2018, the focus was on five fields:

artificial intelligence
internet of things
analytics and big data
virtual and augmented reality
privacy



Virtuaal- ja liitreaalsus

Virtuaal- ja liitreaalsus on digitaalsed tehnoloogiad, mis võimaldavad luua virtuaalseid keskkondi, mis võimaldavad kasutajatel kogeda reaalse maailma sarnaseid kogemusi.



Technology compass for education:
<https://kompass.hitsa.ee/>

4. Digital focus in lifelong learning

Good or very good development:

- The first standard-determining test in digital competences showed that 84% of Grade 9 students have at least an average level of ICT skills;
- About 30% of students in general education schools take courses on advanced ICT skills (e.g. programming, robotics, 3D design, cyber security). Through the ProgeTiiger programme, an initiative to support ICT education, ICT learning takes place in nearly 90% of Estonian general education schools and in 60% of kindergartens;
- The vast majority of teachers in general education schools use digital solutions in lessons. According to 2018 satisfaction surveys, only 5% of teachers did not do so. Students' access to both computers and smart devices has improved in schools compared to the previous school year, while the trend of using computers in lessons is in decline and use of smart devices is increasing;
- The number of ICT graduates has increased 150% in five years, but last year decreased slightly compared to 2017. According to the OECD, in 2017, Estonia had the highest proportion of students studying ICT among OECD countries, though it is still important to integrate ICT skills more into studies in other specialties and areas of life.

More attention needs to be paid to the following:

- Depending on the age group, 30–50% of students are of the opinion that there is too little or no teaching in schools of the digital skills necessary for learning (information search and communication on the internet, storing information, etc.);
- Organisation of teaching of digital skills differs from school to school in Estonian general education schools: a fifth of all schools start teaching digital skills as an independent subject during the 1st stage of school, while around half also teach digital skills as a separate subject during the 2nd and 3rd stages of school. (National Audit Office Memorandum, 2017);
- There are no complete data on teachers' digital skills in Estonia, but it can be said that the need for digital skills training among teachers remains high;
- The learning outcomes of digital skills need to be defined in national curricula in order to ensure that these skills are taught equally in all schools;
- The availability of studies on more sophisticated ICT skills (programming, robotics, etc.) must be ensured for all students and in every kindergarten.

Significant actions and decisions in 2018:

- A standard-determining test for digital competences was carried out, which allowed students' digital skills to be measured for the first time. Further development of the test was continued for the 2019 test;
- Digital learning material has been developed to a large extent, including digital learning material for courses in the national curriculum for upper secondary education in the fields of nature, art, social sciences and mathematics, as well as digital textbooks for ICT education in basic schools. There are about 10,000 digital learning objects in the e-Schoolbag;
- A support measure for basic school digital textbooks was introduced, under which about 350 basic schools used digital textbooks;
- The national standard-determining tests for basic schools are all digital. Digital tests for teachers' self-determination competence, communication competence and learning competence have been completed for the lower school stages, and mathematical literacy and functional literacy tests have been developed;
- Approximately 150 educational institutions were supported with specific equipment needed to teach ICT education, including educational robots;
- In cooperation with school owners, a sufficient number of computers has been ensured in schools for teaching purposes;
- The promotion of more practical teaching and interschool cooperation was supported through projects on the organisation of joint use of learning materials (Klass +);
- A programme to support the creation and use of digital services and products supporting educational innovation was launched in cooperation with the Kredex Foundation.

Estonia must guarantee to all people equal opportunities to obtain a high-quality education that is proportional to their abilities. However, there are a number of social, linguistic, gender-related, economic and regional barriers that set limits to these opportunities. Ensuring equal educational opportunities for children and young adults with special needs continues to be a problem.

In Estonia, the share of education financing from the public sector budget is comparable to that of successful countries. In order to boost participation in lifelong learning, financing should take the possibilities, needs and characteristics of the target groups into greater consideration.

Goal: Everyone enjoys equal opportunities in regard to lifelong learning.

The following programmes contribute simultaneously to achieving this aim:

general education programme, school network programme, study and career counselling programme, higher education programme and vocational education programme.

Indicators:

Share of children from age 4 to school age in pre-school education, including 6-year-olds in basic schools – 91.8%

Share of Russian-speaking basic school graduates with Estonian language skills at B1 level – 61.4%

Share of basic school graduates with a mother tongue other than Estonian whose Estonian is at least the B1 level – 69.2%

Share of people aged 30–34 with tertiary education in age group – 47.2%

Share of labour force costs in government sector general education expenditure – 67%

Optimisation of use of space in education field – 3.4 million

5. Equal opportunities and increased participation in lifelong learning

Good or very good development:

- According to Eurostat, 90% of children aged 4-6 participate in pre-school education, which is slightly below the EU average. Based on data from the Estonian Education Information System, participation in pre-school education has increased over the past five years by 1–2%.
- The share of children studying in Estonian in pre-school education institutions is growing, which will, in the long term, support the achievement of the goal for acquisition of Estonian language skills by the end of basic school;
- The number of schools with an upper secondary school stage has fallen to 160 (the number being over 200 in 2013). The aim is to reach 100 schools.
- The transition to studies in Estonian, which started 10 years ago, is clearly showing positive results, and attitudes towards it have improved. A large number of Estonian residents are in favour of early education in Estonian;
- Compared to 2012, the share of people aged 30–34 with tertiary education (higher education) has increased – in 2018, this was 47.2% of the age group (39.5% in 2012).

More attention needs to be paid to the following:

- The share of basic school graduates with a mother tongue other than Estonian with B1 level in Estonian has not changed, making it impossible to reach a goal (90% B1 by 2020) that was already difficult enough to achieve.
- Different topics relating to students with special educational needs still pose a problem, including communication of information about students' special needs, or legal transgressions and counselling in the case of difficult situations (depression and addiction); There is an increasing number of students in need of support being included in regular schools, with between 40% and 60% of teachers feeling that school-based support services are not available;
- The share of school leavers in the 3rd stage of basic school has decreased, while in upper secondary schools and vocational training institutions it has remained more or less at the same level. In vocational training institutions in particular, the share of interruptions of studies continues to be worryingly high and could be reduced by advice and support.

Significant actions and decisions in 2018:

- The concept of childcare and pre-school education has been drawn up, and activities will continue. The objective for 2019 is to adopt a new Pre-School Education Act and to make organisation of the pre-school education more coherent and flexible;
- New experimental approaches were started to improve the learning of Estonian as a second language, including the pilot project Professional Estonian Teacher in the Russian Speaking Group, +1 Teacher programme, etc.
- A total of 15 state gymnasiums have been established and started work (totalling 24 overall). The occupancy rate for state gymnasiums is generally good. The school network is also being improved by region – the interest of municipalities in establishing state gymnasiums and organising the school network has proved to be greater than expected;
- In 2018, 12 projects were approved as a result of the second round of basic school investments measure. The objective of the support is to contribute to the organisation of the school network by bringing the number of study places in the general education school buildings into conformity with demographic changes;
- The amendments to the Basic Schools and Upper Secondary Schools Act that have entered into force make it possible to provide operationally appropriate support to all students with special educational needs, irrespective of the type and form of school ownership;
- The projects that were implemented in order to bring adults with lower education levels back into formal education and support their participation in learning, are being continued. The intermediate results are positive: in most schools, intake increased, drop-out rates decreased and the number of graduates increased.

YOUTH

The general aim of the Youth Field Development Plan:

young people have ample opportunities for self-development and self-realisation, supporting the formation of a cohesive and creative society.

The development plan has set **four strategic goals:**

1. Young people have more choices to foster their creative and developmental potential:

The involvement of young people in youth work has grown from 37% to 57% compared to 2010.

2. Young people are at lower risk of exclusion:

Both the services of hobby schools and youth centres are more available to young people than they were in 2014.

3. The participation of youth in decision-making is more supported:

Options for organised forms of participation have decreased compared to 2014: by the end of 2018 there were 37 local municipality youth councils and 22 active youth groups.

4. The youth field functions more efficiently:

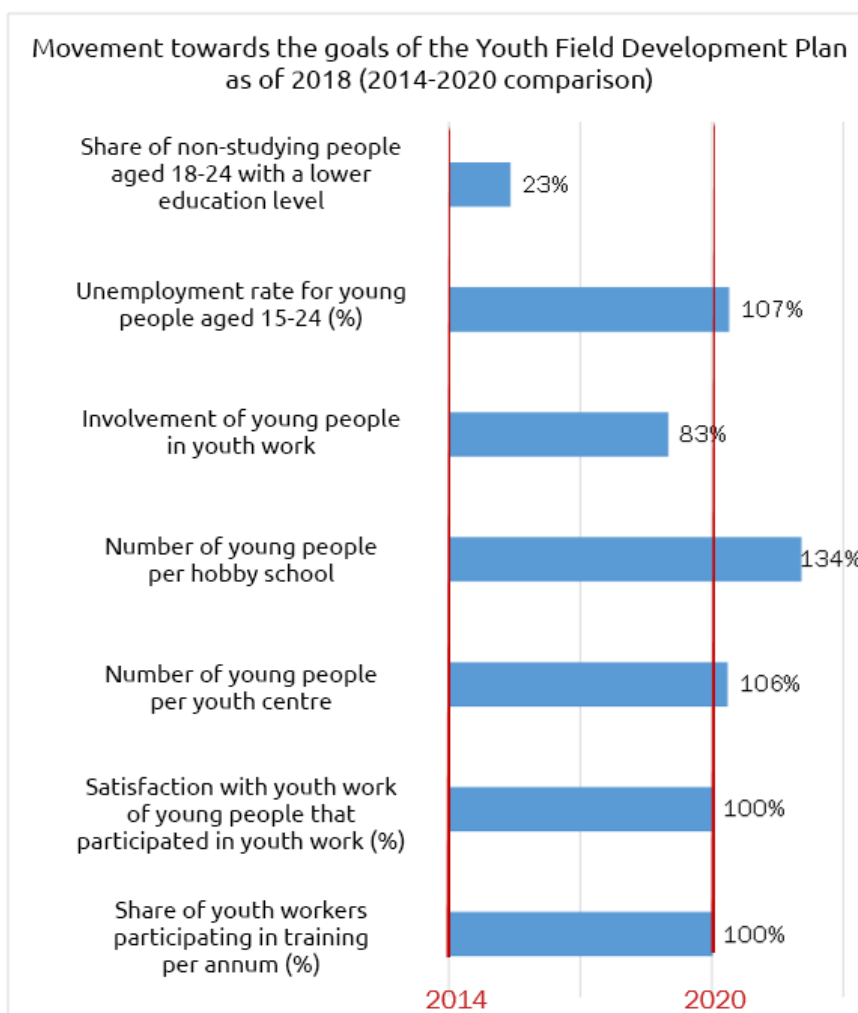
Young people's satisfaction with youth work is high – 87%; youth workers' participation in training is 15%.

General assessment

In order to measure the effectiveness of the Youth Field Development Plan, **eight indicators have been set**. When assessing the current situation in the youth field, it is important to bear in mind that the number and share of young people among the population is in decline. The number of young people living in Estonia in early 2012 was around 303,000, but this figure had dropped to 276,800 by early 2018. **According to forecasts from Statistics Estonia, the share of young people among the total population will continue to decrease until 2020.**

In all indicators of the Youth Field Development Plan, we have moved towards the set target.

Due to the administrative reform, the number of local governments decreased to 79, meaning that the initially agreed indicator of youth participation opportunities is no longer measurable. In the future (from 2018), the targeted level of youth participation opportunities will be measured as a proportion of the total number of local governments. The achievement level of the updated indicator for 2018 is 74.4% (the indicator is not shown in the figure).



The figure shows movement towards the aims of the Youth Field Development Plan indicators as of 2017 or the last measured year compared to 2014, which is level 0. The level for 2020 is 100%.

In 2018, the NOORUM youth work forum was held for the 6th time. The main messages of the forum were as follows:

The inclusion of young people in all matters concerning young people's lives is important for the country; it must be systematic in order to allow young people to develop informed views in a suitable format and time;

Estonia is one of the OECD countries where activities aimed at young people have been strategically organised and planned in aware and stragic manner, and Estonia is one of the few OECD countries where young people's trust in government is higher than in the age group 50+. Such success must be maintained and further developed;

The core values of youth work, that also support the development of young people's values, are important both for young people and for society as a whole;

The challenges faced by young people need specific attention – in order to achieve effective outcomes, a comprehensive approach to young people as an age group, without defining young people in a specific action-based target group (students, unemployed or other), as well as knowledge of the situation of young people and their changing trends are needed;

Youth work supports young people substantially and offers diverse opportunities for youth participation, active citizenship, joint and community activities, future skills development and, as a whole, positive self-development; it is necessary to increase the availability and quality of youth work in order to continue this development. The work done by youth workers must be more visible in society and their salary must be at least equal level to teachers.

Back to the future!?

We are creating a future vision for youth with young people!



Good or very good development:

- Young people's participation in youth work, that is to say, the proportion of young people that took part in hobby education, camps, youth work camps, or in the activities of national youth associations receiving annual support, or who participated in youth councils and active youth groups, has increased. In 2010, the respective indicator was 37%, in 2018 it was 57%; and the goal for 2020 is 60%;
- The availability and quality of hobby education and hobby activities has improved in all respective fields (music, art, sport, dance, general culture and STEM) thanks to the supplementary state support. The most new opportunities have been created in the area of general culture, but a positive change has also taken place in the STEM field – new opportunities have been created and new educational materials have been acquired;
- The regional availability of youth work, measured by the number of young people per hobby school (369 young people) and youth centre (989 young people), has significantly improved;
- While youth workers competences are improving, more attention needs to be paid to the recognition of youth work profession (according to OSKA, 90% of youth workers have higher education, but 60% of them do not have special education or have not gained a professional youth work qualification);
- The average level of satisfaction with all youth work activities is 87% (proportion of people that are satisfied or very satisfied), 91% of young people are satisfied with hobby education (including 64% very satisfied).

More attention needs to be paid to the following:

- The number of young people not in education, employment or training (NEET) has decreased more than half since 2010, but in 2018 there was a slight increase in the number of NEET youth; it is estimated that there are 12.300 young people in Estonia that do not study, work or participate in training; regional differences are worrying, e.g. in North-East Estonia, the share of NEET youth is 13.7% (the Estonian average is 9.8%);
- The number of organised participation opportunities (e.g., youth councils) is a challenge. The administrative reform that took place in 2017 resulted in a significant decrease both in the number of youth councils and young people taking part in the activities of youth councils. The 2018 Youth Monitoring Analysis reveals that the civic participation of Estonian youth is average compared to other European countries – Estonian youth are less active than young people from the Nordic and German countries, but more active than young people from Central and Eastern European countries.

Significant actions and decisions in 2018:

- As a result of the implementation of the local government cooperation groups, by the end of the year, 79 local governments were involved in the course of action following the administrative reform. As a result of the cooperation of local governments, 893 new opportunities have been created for young people to participate in youth work and approximately 86.000 young people have taken part in these opportunities; the largest number of new activities have been launched in the field of STEM, sport and culture. In the next phase, local governments will focus on innovation in order to develop innovative youth work service models for local youth work;
- Approximately 3.000 Estonian youth and youth workers participated in Erasmus+ youth field projects abroad and approximately 3.000 young people and youth workers participated in Erasmus+ projects in Estonia;
- The Youth Prop Up programme (Noorte Tugila) aimed at supporting NEET youth was implemented in 47 youth centres in 56 local governments (calculated after the administrative reform), and support services have been offered to 7.893 young people. 68.1% of NEET youth have started working and/or studying six months after leaving the programme;
- In order to ensure the development of high-quality youth policies and youth work, the participation of youth workers was supported through various training activities (including training for camp staff and youth work camp organisers and for team leaders of youth work camps, development programmes, thematic training and training supporting regional development of youth field, training supporting internationalisation, etc.). In total, approximately 2.500 youth workers participated in these courses;
- As in 2017, a smart approach was introduced in 2018 for various activities to be carried out in the youth field.

RESEARCH

The general aim of research and development and innovation development:

to create favourable conditions for growth in productivity and standards of living, good education and culture and the preservation and development of Estonia.

The strategy has set **four strategic goals:**

1. Research in Estonia is of high quality and diverse:

3/3 – we have seen positive movement in all three aims: the amount of publishing activity and the number of doctoral theses being defended have increased.

2. Research and development (RD) functions in the interests of Estonia's society and economy:

2/2 – the share of private-sector investments in public-sector RDI has increased (decreased in 2017), as has state-financed applied socio-economic research.

3. R&D makes the structure of the economy more knowledge-intensive:

2/2 – the involvement of the high (and medium-high) technology sectors and export share are increasing.

4. Estonia is active and visible in international RDI cooperation:

2/2 – the sum per capita of contracts won in Horizon 2020 and the share of internationally coordinated research in state-funded R&D have increased.

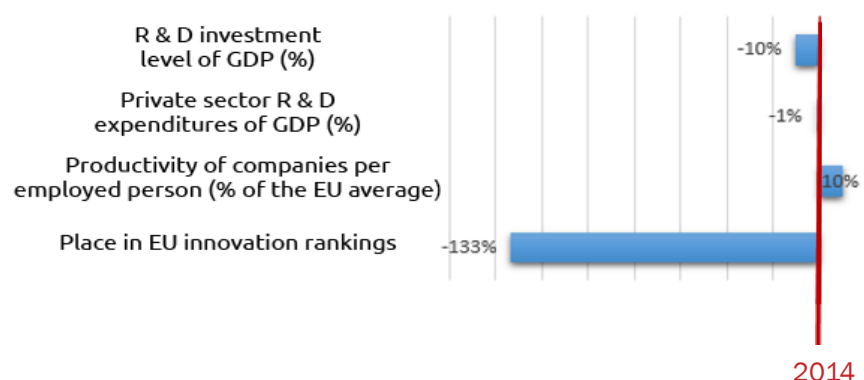
General assessment

To measure the performance of the Estonian Research, Development and Innovation Strategy 2014-2020 Knowledge-based Estonia, four key indicators and nine result indicators have been set.

Several indicators reflect the high quality research in Estonia. A well-functioning and developing research, development and innovation (henceforth RDI) system based on quality competition has been developed in Estonia. The participation of researchers in international cooperation is growing, as is publishing activity, which indicates the high level of research and success in Horizon, the EU's research and development (henceforth R&D) framework programme. The number of doctoral theses being defended has increased in recent years. This is the result of the high admission rate around 2010. Estonia is increasingly attractive for foreign researchers. The number of foreign researchers in Estonian public research institutions has risen steadily.

The biggest challenges in the field of research are the involvement of companies in research and development and the financing of research. Estonia's specificity is the high level of project-based activities and the large share of foreign sources in research financing, especially in the case of public sector R&D. R&D for the benefit of Estonian society and economy is modest. Cooperation between universities and companies is low – Estonia clearly lags behind EU innovation leaders in terms of the number of joint publications between business and research institutions. The private sector's share in the financing of public R&D institutions has increased and reached 5.1% in 2017, but remains well below the target of 7%. The decline in the innovation capacity of Estonian companies in comparison with EU Member States and excessively slow growth in productivity is worrying.

None of the four indicators of the overall objective of the strategy (productivity, investments in RDI, etc.), which are closely related to macroeconomic indicators, have seen considerable improvement since 2014 (see Figure below). At the level of the strategic objectives of Estonian RDI development, however, the developments are rather positive (see panel on the left).



The figure depicts movement towards RDI strategy indicators as of 2017 or the year last measured, compared to 2014 (level 0), the level for 2020 is 100%.

Regarding public-sector RDI expenditure, **a cross-party research agreement** was concluded at the end of 2018 with the approval of the President of the Republic of Estonia, stipulating that also the target level of public-sector R&D investment of 1% of GDP would be reached in three years.

In 2018, the Government of the Republic entrusted the Ministry of Education and Research and the Ministry of Economic Affairs and Communications with the task of drawing up a joint **Estonian Science, Development, Innovation and Entrepreneurship Development Plan 2021–2030**.

When formulating the general objective of the Development Plan, the decision of the Research and Development Council will be taken into account:

The main focus of the new Development Plan to be drawn up will be growth in productivity and added value in the short, medium and long term by encouraging the growth of private-sector R&D investments.

The Government of the Republic approved the Science Infrastructure Investment Plan of National Importance in October 2016. The Plan includes 13 objects, with a total grant amount of 19.1 million euros.

All projects are underway with the active building of infrastructure. Some examples:

In the Smart Industry Centre (Industry 4.0) project, the metal 3D CT was acquired for the computer tomography laboratory of the Estonian University of Life Sciences and the metal 3D printing system to the Tallinn Technical University Laboratory, ProtoLab.

Within the framework of the **NATARC** project, the demo version of the new biodiversity portal was opened to the public, giving users the opportunity to search for **machine-readable open data on Estonian biodiversity** in one place. This is the first information resource to connect the data from the state and researchers.

Good or very good development:

- There has been an increase in publishing activity (1669 high-level articles per million inhabitants in 2017), which shows the activity of researchers and the high level of science;
- In Horizon 2020, Estonia's current revenue is both in relation to GDP and per capita among the best in the EU (264% and 145% of the EU average in 2018, respectively);
- The share of employment in high-tech and mid-high-tech sectors in total employment has increased from 6.7% to 8.3% in the last five years (2017) with a target of 9% in 2020;
- Estonia is more and more attractive for foreign researchers. The number of foreign researchers in Estonian public research institutions has risen steadily; 402 foreign researchers is working in Estonia, which constitutes approximately 8% of the number of researchers. The number and share of foreign Doctoral students are increasing: in the 2018/2019 academic year, 37% of the enrolled Doctoral students were foreign students.

More attention needs to be paid to the following:

- The level of research and development (R&D) investments in Estonia has been declining since 2014: from 1.43% of GDP (2014) to 1.29% (2017), incl. a decrease in business sector investments from 0.84% to 0.63%.
- Estonia's place in the European Innovation Scoreboard as of 2017 is in the group of so-called moderate innovators. In the calculation of aggregated indicator, we have fallen in recent years (2017 – 17th place) in the ranking of countries, while in international comparison we are lagging behind in terms of innovation indicators for entrepreneurship;
- A research career is not attractive in Estonia, nor are Doctoral degrees valued. There is a high rate of interruption of studies in Doctoral research (2017/2018 – 301 persons). The number of researchers per 1,000 employees is low in Estonia (2017 – 7.4) compared to the Nordic countries, and we are particularly lagging behind in terms of researchers working in the private sector; career models for researchers are too rigid and instable, do not promote cross-sectoral mobility or contribute to knowledge transfer outside of academia;
- The model for the management of modern research infrastructure (laboratories, equipment) is unsustainable, and the opening up of infrastructure to the private sector for joint use is uneven;
- The role of science in solving the challenges facing Estonian society is modest; the science-based approach is not sufficiently valued in either sectoral policy-making or the development of entrepreneurship.

Significant actions and decisions in 2018:

- As a result of budget decisions, the ratio between research grants and base financing reached a proportion of 60:40 by 2018. In 2019, a continued increase in base financing up to a share of 52:48 is planned; the financing of the research programme will increase in 2019 by 18,9 mln and reach 171 mln in total;
- The draft Higher Education Act and the draft Act to amend the Research and Development Organisation Act were prepared and approved by the Government of the Republic. The new laws support the modernisation of career models in higher education institutions, which would motivate young people to choose to become researchers and allow the creation of tenured posts for the involvement of top professionals. To improve the relationship between higher education and society, non-university members are involved in the management of universities; the standards for quality assessment of academic staff and science have been revised;
- In 2018, applications for the renewal of the road map for Estonian research infrastructures were assessed, and the updated road map was approved by the Government of the Republic.
- Estonia signed a declaration of accession to a joint venture of European supercomputers.

LANGUAGE

The general aim of the Development Plan of the Estonian Language:

to ensure the functioning of Estonian as the state language in all areas of life, the teaching of Estonian, the study, development and protection of Estonian and, through all of this, the preservation of the Estonian language over time.

Four strategic directions have been selected:

1. To support the sustainable development of the Estonian language among speakers of Estonian as a native language:

3/4 - we have seen progress in three of the four indicators set: there have been improvements in the average result in the upper secondary school exam in Estonian as mother tongue and also in the share of top results. The share of students with low skills has decreased. The number of inquiries made to language advice services has decreased.

2. To improve the options to learn Estonian abroad:

The participation of Estonians living abroad in Estonian language learning and language events has remained at the same level compared to the previous years, but access to Estonian language learning has improved through e-learning opportunities.

3. To improve and expand the Estonian skills of Estonian residents with other native languages:

4/4 - we have seen progress in all four indicators: the share of those who passed the Estonian language proficiency test has increased.

4. To increase motivation among people in Estonia to study different languages:

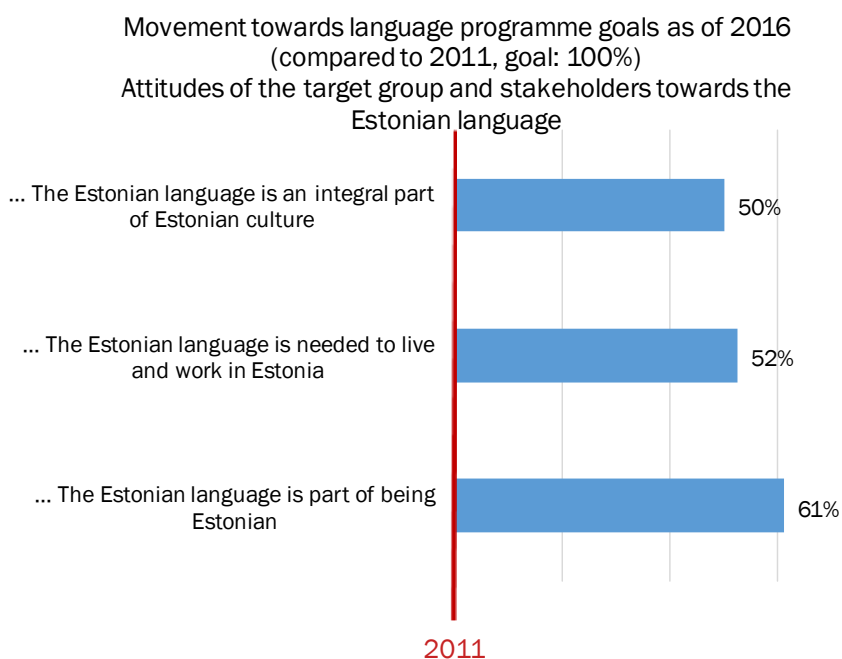
In 2018, 67% of young people who passed the foreign language state examination achieved at least level B2, which is 18% more than in 2016.

General assessment

In 2017, an overview of the implementation of the Development Plan was commissioned, highlighting a number of topics that need attention, including Estonian language education in higher education, the lack of Estonian teachers, early (national) language training as an opportunity to achieve a very good level of language skills and the development of terminology and language technology. It was decided that, in view of the forthcoming **renewal of a wide range of strategies, the development of the language field should be continued in the context of the Estonian Lifelong Learning Strategy and, until the new strategy is completed, the language activities would be a part of the language programme.**

To measure the effectiveness of the Development Plan of the Estonian language, three key indicators and 10 result indicators in four areas have been set in the language programme. The key indicators measure the attitudes of the target groups and stakeholders towards the Estonian language. As a result of the language preferences survey (2017), it was found that **Estonian people place the most value on the Estonian language as a part of the Estonian identity.** For Estonians, functions related to them personally and Estonian identity matter most, while for non-Estonians, the instrumental function matters most. **More than 70% of Russian-speaking respondents agree that Estonian is necessary for living and working in Estonia.**

We have made progress in 10 of the 13 indicators of the language programme, and all key indicators have moved in a positive direction (see figure below).



The figure shows movement towards the language programme's key indicators as of 2016 (last measured status). The result is compared to that of 2011 (level 0), which was the starting point of the Development Plan of the Estonian Language. Target level is calculated to be 100%.



The Ministry of Education and Research declared 2019 the Year of the Estonian Language in order to celebrate Estonian with numerous events and activities and to celebrate the proclamation of Estonian as the national language a century ago.

On 27 September 2018, the Government of the Republic instructed the Ministry of Education and Research to work together with the Government Office during the first half of 2019 to develop the fundamentals of the Estonian language policy.

The general principles of policy are a development document in which the Riigikogu defines the long-term national objective and priority development directions of one or more related policy areas.

The general principles of policy will be taken into account when drawing up development plans.

The eighth **language forum** was held in 2018, summarising the important developments in the language field in Estonia, Latvia and Lithuania and gathering thoughts to develop the fundamentals of Estonia's language policy.

Solutions were sought to address language-related challenges, such as the challenges of internationalisation and the development of Estonian in higher education, possible development models for the general education school to exit language-based segregation, the enhancement of multilingualism, and so on.

Good or very good development:

- The results of the Estonian language final examination have improved over time in both general upper secondary school and basic school. In recent years, the share of those achieving 80 points and more in the state examination for Estonian as a mother tongue has also increased, and the proportion of graduates who score less than 20 points has decreased;
- The self-assessed Estonian skills of people of other nationalities have gradually improved. While in 2008, 19% of people of nationalities other than Estonian did not know any Estonian, in 2017 the same figure was just 10%. In 2018, 4,369 adults sat the Estonian language proficiency examinations. A total of 56.4% of all adults that sat the examination passed. Compared to 2017, the proportion of those who passed the exam increased at almost every level in 2018;
- The activities and principles of plain language are becoming increasingly popular, and the number of followers is steadily increasing;
- Being multilingual is valued in Estonia. Knowledge of several foreign languages pays off in the labour market. Approximately 40% of all children start learning a foreign language before the age set out in the national curriculum.

More attention needs to be paid to the following:

- Significant migration away from and back to Estonia requires increased attention to offer studies of Estonian as a first language and a second language in Estonia and abroad. Maintaining language skills abroad and offering language support to those that return is key if we want to make it as easy as possible for children with multinational backgrounds to grow up as Estonians;
- The share of non-Estonians that speak Estonian has increased in the last 10 years overall, but has remained at more or less the same level in recent years. The foreign language skills of this group also need attention. In the youngest group surveyed (ages 16–24), only 4% of Estonian-speakers have no English language skills, compared to more than one in four (27%) among Russian-speakers;
- In the 2018/19 academic year, the total number of teachers in general, vocational and pre-school education institutions whose Estonian language skills did not meet the requirements is around 1900 (7.8% of all teachers);
- At the first level of higher education it is possible to study almost entirely in Estonian in all curricula groups, but there are fields at the 2nd level of public universities where the number of curricula in Estonian has decreased;
- Information on the Estonian language is spread across different web pages and is difficult to find; there is no central user-friendly language portal.

Significant actions and decisions in 2018:

- Administrative contracts were negotiated with six public universities for the period 2019–2021. These agreements will ensure that in all curricula groups in the area of responsibility of a university, Estonian-language learning is offered at the first two stages of higher education, i.e. Bachelor's, applied higher education, and Master's studies. Universities are also responsible for developing Estonian terminology and shaping the attitudes of students toward valuing Estonian. Universities have an obligation to provide instruction on Estonian language and culture to foreign students enrolled in English-language programmes;
- The Estonian language technology programme 2018–2027 was launched, which supports research and development in language technology to create new Estonian language technology applications, increase the quality of existing applications and introduce them in as many areas as possible, in the private, public and third sectors;
- A new e-course, Keeletee (www.keeletee.ee), has been opened. The Estonian language course for independent language users (B1 level) based on English and Russian is free for people that need Estonian language training in Estonia and abroad;
- The Sõnaveeb dictionary portal (www.sonaveeb.ee) is now complete. The appendices to the portal are Õpi eesti keelt (Learn Estonian) and Keelemängud (Language games). It is possible to perform voice searches on the portal and to use the read-out option;
- The Dictionary of Standard Estonian ÕS 2018 was published on paper and on the web;
- The B2- and C1-level Estonian language training for education professionals in Ida-Virumaa County has continued, and support will be provided for the local government language learning projects in areas such as Narva, Paldiski, Pärnu, and Valga.

NATIONAL ARCHIVES

Aim of programme:

sustainable preservation and use of the documentary memory of society and proving citizens rights.

In the centenary year of the Republic of Estonia, several scientific and thematic exhibitions were prepared under the leadership of the National Archives.

The monograph of Konstantin Päts (Toomas Karjahärm, Ago Pajur) was published at the beginning of 2018, and the monograph of Jaan Tõnisson (Krista Aru) will be published early in 2019.

Reviews of the century-long history of both the Ministry of Education and Research and the Government Office were compiled, and a phonograph record with the oldest recordings of the Estonian anthem was solemnly presented.

The mass digitisation of cultural heritage is related to Estonia's centenary, where the National Archives coordinates the areas of documents, films and photography.

At the end of 2018, the archive digitisation project **Let us remain Estonians, but let us also become Europeans (1860–1920)** was successfully launched.

Thanks to extensive work, the visible part of this cultural and historical heritage will be made available to the public and, understandably, mass digitisation will also be one of the main tasks of the National Archives in the coming years.

General assessment

All of the programme aims for 2018 were achieved:

- The number of institutions that have submitted digital archival documents to the National Archives has increased (from five in 2014 to nine in 2018);
- The share of records kept in the required vaults in the National Archives has grown (from 58% in 2014 to 89% in 2018);
- Access to records online has improved significantly, to a total of 19.5 million images (compared to 13.4 million in 2014).

Good or very good development:

- The field for archives pedagogy is developing: 1.202 people participated in archives pedagogical activities in 2017, while 1.758 people took part in 2018. For the period 2019–2022, the number of participants is estimated to be around 2.000 people per year;
- In 2018, key functionalities of the National Archives' electronic collaboration environment were developed with authorities providing archival-value information;
- In the medium term, there is a very good plan to improve the situation of the film archive: all of the archive rooms in Tallinn will be moved to the premises of the National Library of Estonia;
- The ability of the National Archives to adopt and retain digitally created matter has grown, several new specialists have been recruited and investments have been made in infrastructure. In the coming years, the Archives will contribute more than ever to the digitisation of documents, photographs, films and maps, and this work will be supported by modern scanners.

Key activity indicators for 2018

- As of the end of 2018, there were 536 institutions whose work may generate archive-worthy documents. This is 160 fewer institutions than a year ago. This was due to the country's administrative reform, which significantly reduced the number of municipal and city authorities. As a result, from 2018 onwards, the share of institutions whose work may generate archive-worthy documents will be less than one quarter (22.4%) of the public agencies operating in the country (a total of 2.394 agencies). In the past, this indicator has been close to 30%. Most of the documents of the institutions whose work may generate archive-worthy documents have been evaluated;
- At the end of 2018, the National Archives' records will be housed in seven buildings with 9.493.598 storage items (including photographs and sound recordings) and 34.722 titles of film documents. A total of 89% of the National Archives' records are preserved in modern archive buildings. There is a total of 16.907 shelf metres of free shelf space;
- The total number of web visits also totalled around 1.2 million in 2018.

- Statistics concerning all schools and learning: students, graduates, applicants, students interrupting their studies, teachers, teaching staff per level of education, education type, school, age, gender, etc.;
- Efficiency and effectiveness indicators and strategy indicators;
- Ability to compare schools based on different indicators: background data, learning environment, results, etc.;
- Ability to compare statistical reports and to compare educational indicators.



The Haridussilm portal gathers its main data from the Estonian Educational Information System (EHIS) as well as from Statistics Estonia, Eurostat, the Thomson Reuters Web of Science database and elsewhere. Time series since 2005, regular data updating. We have a wide-ranging user community, from parents and school directors to analysts and journalists.



ANNEX 1. EXECUTION OF STRATEGY PROGRAMME BUDGETS IN 2018

Programme	Measure	Budget 2018, thousand euros	Execution in 2018, thousand euros*	Execution % **
Competent and Motivated Teachers and School Leadership	Measure 1 Designing a training system for teachers and school leaders, incl. developing competence centres at the University of Tartu and Tallinn University responsible for teacher training and development of pedagogy	7,112	5,898	83%
	Measure 2 Raising the attractiveness of, and rewarding, the professions of teacher and school leader	361,814	363,170	100%
	Total	368,926	369,068	100%
Digital focus programme	Measure 1 Integrating digital culture into the learning process	3,102	2,628	85%
	Measure 2 Creating prerequisites for integrating digital culture into the learning process	5,906	14,054	238%
	Total	9,008	16,682	185%
Labour market and education cooperation programme	Measure 1 Linking studying with labour market needs	11,165	9,647	86%
	Total	11,165	9,647	86%
School network programme	Measure 1 School network organisation	50,101	44,874	90%
	Total	50,101	44,874	90%
Study and Career Counselling Programme	Measure 1 Providing a career and study counselling service for children and young people, its coordination and ensuring its availability	7,012	6,858	98%
	Measure 2 Developing educational support services and ensuring their quality	695	579	83%
	Measure 3 Raising the public's awareness of the services and ensuring the availability of relevant labour market and training-related information	129	125	97%
	Total	7,836	7,562	97%
Vocational education programme	Measure 1 Conformity of lifelong learning opportunities with the needs of the labour market and increase in participating in studies	57,410	57,892	101%
	Total	57,410	57,892	101%
General education programme	Measure 1 Ensuring the quality of general education	8,651	8,189	95%
	Measure 2 Ensuring equal opportunities and reducing drop-outs in general education	6,361	6,012	95%
	Measure 3 Ensuring access to general education	92,423	92,729	100%
	Total	107,435	106,930	100%
Higher education programme	Measure 1 Equal opportunities for higher education and implementing principles of changed approach to learning	178,531	181,147	101%
	Measure 2 Conformity of higher education with the current needs of the labour market	7,900	7,900	100%
	Measure 3 Promoting the international competitive advantages of higher education	2,887	3,672	127%
	Total	189,318	192,719	102%
Adult education programme	Measure 1 Bringing adults who quit their education back into the formal education system and creating conditions for them to remain there and obtain an education level	1,736	1,150	66%
	Measure 2 Increasing access to informal training and raising the quality of training	8,392	7,218	86%
	Measure 3 Developing a professional qualifications system and creating cooperation formats that execute the lifelong learning vision and supporting these in adult education	2,373	2,232	94%
	Total	12,501	10,600	85%
Youth field development programme	Measure 1 Increasing opportunities to develop youth's creativity, initiative and joint activities	4,061	3,946	97%
	Measure 2 Increasing the involvement of youth and improving youth employment	20,071	19,951	99%
	Measure 3 Supporting the active participation of youth in the community and decision-making	666	666	100%
	Measure 4 Ensuring quality youth policies and youth work development	2,693	2,437	90%
	Total	27,491	27,000	98%
Research and development and innovation programme	Measure 1 Ensuring the high level and variety of research	114,818	136,596	119%
	Measure 2 Increasing the public and economic profit of RDI	15,305	13,624	89%
	Measure 3 RDI changing the economic structure is based on smart specialisation	14,450	9,632	67%
	Measure 4 Making Estonia active and visible in international RDI cooperation	10,408	9,077	87%
	Total	154,981	168,929	109%
Language programme	Measure 1 Ensuring the sustainability of the Estonian language	3,004	3,063	102%
	Measure 2 Creating Estonian language learning options in Estonian communities abroad and in foreign universities	975	983	101%
	Measure 3 Ensuring the teaching of Estonian as a second language and supporting studies	315	285	90%
	Measure 4 Supporting foreign language and multilingual skills (Estonian foreign language strategy 2009-2017)	131	125	95%
	Total	4,425	4,456	101%
Archiving programme	Measure 1 Sustainable preservation and use of the documentary memory of society and proving citizens' rights	8,464	7,657	90%
	Total	8,464	7,657	90%

* Accrual costs. All economic activities which are recognised in the period that they take place, regardless of when they are paid for, are accrual costs. Prepayments are not accrual costs. Recognising grants depends on whether the grant in question is an activity grant or a project-based grant. Activity grant: grants in the case of which the body issuing the grant does not provide strict limits for using the grant or require detailed reporting about the costs incurred when using the grant. Issued and received activity grants are recognised on a cash basis at the moment of payment of the grant. Project-based grants: grants with a very limited purpose and for which the body issuing the grant requires reporting. Project-based grants are recognised as costs at the moment the costs are incurred for the purpose for which the grants are meant, thus the basis is the report received from the grant recipient, where the recipient indicates the periods in which the expenses were incurred.

NBI in the State Budget Act, the educational grants of local governments are recognised in the State Government budget; in this table they are indicated among programme budgets. Therefore, some programme amounts may differ compared to the state budget.

** Execution above 100% generally means that expenses were also incurred with resources carried over from previous year, which are not recognised in the budget.