



Estonian Education and Research Strategy
2021–2035

SMART AND ACTIVE
ESTONIA[🌱]2035

**Summary of the vision
documents of three expert groups**

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INTRODUCTION

“The Estonian people have faith in education,” President Toomas Hendrik Ilves said in 2015. “We really sincerely believe that the best thing that parents can give their children is a good education. Not land, houses, woods or bank accounts.” In 2018, the University of Tartu’s Development Plan expressed the same idea regarding research: “The Estonian people have faith in research,” bearing in mind that research is valuable, useful to Estonians and fulfils a key role in searching for the “truth”. Faith in the value of education and research is also the reason why we think that the major challenges facing Estonia can be solved primarily through education and research, language policy and youth work. Although strong buildings and faster connections are also important, they have no value without the right knowledge, skills and attitudes. The Ministry of Education and Research (MER) is currently preparing strategies for 2035, but its goals are much broader than more beautiful schoolhouses or smarter children. The joint vision for 2035 for the MER’s four areas of responsibility looks beyond education and research. The goal is an inclusive society of welfare and shared values, a competitive and sustainably growing economy, and a viable and growing Estonian culture and language.

This summary is based on eight months of work by three broad-based working groups.¹ The Expert Group on Values and Responsibility was led by Margit Sutrop, the Expert Group on Welfare and Cohesion by Marju Lauristin and Krista Loogma, and the Expert Group on Competitiveness by Raul Eamets. Ideas presented in this summary come from the vision documents of these working groups and are thus a joint creation. There is no reference behind each sentence to facilitate reading. Certainly, not every member of the working groups agrees with every individual thought and sentence. The aim was to highlight the most important ideas presented. Some of them overlapped in different vision documents, some were different, and some were in conflict. This is the author’s choice, agreed with the leaders of the working groups. The aim of the summary is to provide the reader who is interested in education, research, language and youth policy with a more concise overview of the work done by the expert groups. It is worth reading all three vision documents to obtain a thorough picture. In the further strategic planning process, the vision documents prepared by the expert groups serve as input that is used as the basis for setting final goals for the policy fields and agreeing the course of action by the working groups that also involve different stakeholders. Policy field strategies will be completed by 2020.

¹ More about working groups:

<https://www.hm.ee/et/kaasamine-osalemine/haridus-ja-teadusstrateegia-2021-2035/visiooniloome>

1. WHAT KIND OF ESTONIA DO WE WANT?

VISION OF ESTONIA 2035

The future is uncertain and unpredictable, but we must be open and ready for it. The “Smart And Active Estonia 2035” Vision sets the goal of increasing the material, social and mental welfare of Estonian society as a whole and of every Estonian person through education and research as well as youth and language policy, to ensure the sustainability of the Estonian language, culture and natural environment and the competitiveness of the Estonian economy. Although good education and top-level research are values in themselves, in formulating the 2035 vision, we focus on how, in the future, to make better use of Estonia’s current high-quality education – in comparison with other countries – for the benefit of the people, society and economy of Estonia. We are boldly stating that we have many things that we do very well when compared globally and without regard for the difficulties of the past.

The vision of Estonia in 2035, which we think is possible to design through education, research, language and youth policy, is as follows.

1. **The welfare of the Estonian society and people is growing.** The basis of growth is the self-realisation of every person – the opportunity to develop and use his or her abilities and to be the master of his or her own life. In a society, commonality is created by shared values and equality of opportunities for different people and groups, and the freedom to choose and take responsibility both as a person and as a state. Welfare is not based on increasing consumption, but on the way of life in line with the natural environment and the balanced and meaningful application of technology.
2. **The Estonian language and culture** are also of value in an increasingly multicultural environment. The Estonian language is sustainable, developing and reputable, while Estonian residents learn and know foreign languages. Culture is one of the most important cornerstones, facilitators and binders of self-realisation, commonality and freedom – for us, the Estonian culture and language with shared core values. It gives our activity a longer course and goal as well as a base we can rely on in a rapidly changing world.
3. **The competitiveness of the Estonian economy is increasing** thanks to the economic development that is gaining momentum from R&D and innovation, widespread adoption of the latest technology in all sectors, increase in education and innovativeness, better application of skills and knowledge, smart and prudent migration policies, and sustainable use of Estonia’s special characteristics / unique natural environment.

2. WHERE ARE WE NOW? THE MAIN STRENGTHS AND PROBLEMS FOR ESTONIAN EDUCATION, RESEARCH, LANGUAGE AND YOUTH

This chapter is largely based on Chapter 3 of the Values and Responsibilities Vision Document, as well as Chapter 3 of the Competitiveness Vision Document.

Estonian research is world-class in many areas, considering the size of Estonia. We have good research infrastructure, while the internationality of the research community and our ability to successfully participate in international project competitions have grown. The problem is ensuring continued development or even remaining at current levels with current resources. Funding for both research and higher education has fallen in the last five years as a share of GDP. Due to lower funding, the wages of Estonian researchers and lecturers are not competitive. In addition to the fact that public R&D funding is scarce in Estonia, project-based research funding also dominates, increasing uncertainty for researchers. The number of researchers per thousand employees is low and decreasing. In the perspective of 2035, the number of doctoral degrees is not enough for the renewal of academic positions or sustainable knowledge-intensive business and public development needs. The State and companies are not yet able to be demanding and knowledgeable clients in the field of R&D.

In Estonia, **high-quality pre-school education** is available for most children. The level of **basic education** in Estonia is rated among the best in the world and educational inequality is low. At the same time, ISCWeB, the international child welfare survey of last year, indicates that the quality of education is, according to pupils, better than social relationships in the school environment. According to pupils, they do not have

enough autonomy at school. Basic schools do not support the integration of children from different cultural backgrounds and do not provide sufficient knowledge of the Estonian language to children with a different mother tongue.

General secondary education also gives our young people very good skills in comparison to other OECD countries, based on the international PIAAC. Estonian **teachers** are highly qualified and there are no major differences between schools. At the same time, the shortage of teachers, especially teachers of mathematics and natural sciences, is worsening, while teachers have little cooperation and low self-efficacy. Few teachers come to school after graduating from university and nearly a third of new teachers leave after their first year of work. A major problem is the lack of **support specialists**, especially special education teachers and psychologists working at school. So far, we have been relatively good at supporting weaker pupils, but children with special educational needs related to talent do not receive enough attention. There is no system for evaluating and recalling **school directors**, who focus too much on administration, and not on development and change management.

The opportunities for cooperation between schools and universities have improved, but there is room for development in terms of counseling, research and training, etc. There is a need to increase the inclusion of education with society at large and the links between each school and its community in social, economic and cultural terms.

Vocational education infrastructure is good and vocational education is increasingly popular among adults. At the same

time, vocational secondary education is not available to adults nor is it attractive for basic school graduates. Selection of vocational over general secondary education is heavily skewed, depending on the region, the learner's gender, nationality and past learning results. For example, young people from Tallinn and Tartu, girls, ethnic Estonians and young people with better learning results are under-represented in vocational secondary education. Only half of pupils complete vocational secondary education within the nominal time. Career paths through vocational education are not valued in society and there is also a lack of awareness among parents, learners and teachers.

Based on the analyses of the Estonian Higher Education and Vocational Education Quality Agency, it can be stated that the quality of **higher education** in Estonia is good. The same is also true according to the PIAAC study, comparing the skills of our recent graduates with graduates from other OECD countries. In their reports, external experts acknowledge up-to-date infrastructure, strategic management of higher education institutions, qualification and dedication of lecturers and the level of research work. Curricula are of good quality, teaching methods are diverse and student counselling systems are developed. Higher education institutions' cooperation with employers and the competitiveness of graduates are highlighted. The disadvantages are the duplication of learning in different institutions, the shortage of foreign lecturers and a lack of learning mobility for students and teachers. Little attention is paid to the development of key competences, including practical skills; there are problems in evaluation and the planning of workload; and dropout rates are very high. The achievement over the last five years can be attributed to the increase in the share of admissions and graduates in science, technology, engineering and mathematics (STEM), primarily at the expense of ICT learners. The share of foreign students has increased rapidly.

More than half of the working-age population participates in **adult education** each year, and participation has increased in recent years. The strengths of the system are the diversity of learning opportunities and funding sources, the directing of training offers to target groups in need of state support, and the participation of employers in funding the training. Problems include very unequal participation in learning, depending on nationality, employment status, education and age; and low contributions by people themselves. Compared to other OECD countries, the need and readiness to learn is relatively high among Estonian adults, but labour market demands and regulations do not support learning. The adult education market is fragmented, and quality is uneven. Most of the courses offered are short and do not support major changes in learners' skills.

The current strengths in the **youth field** are the high participation of young people, diversity of activities, long traditions of youth work and high levels of satisfaction among participating young people. Improvements in the quality of youth work are hampered by the lack of recognition of youth work (including low wages for youth workers and high labour turnover) and unequal availability based on region. More attention needs to be paid to the development of active citizenship among young people and to the preventing the risk of youth exclusion.

The Estonian language has a strong position, including as an official language of the European Union and as a technologically developed language. The main problems are inadequate knowledge of Estonian by the non-Estonian population and the expansion of the use of English in society. Language technology will require significant investments in the future so that in 2035 we could speak with machines in Estonian. Both kindergartens and schools need many Estonian language teachers and teachers teaching in Estonian.

3. CHANGES IN THE WORLD AFFECTING EDUCATION, RESEARCH, THE ESTONIAN LANGUAGE AND YOUTH WORK

In general terms, global trends affecting education and other key vision topics can be broken down into the fields of technology, demography and geopolitics. In addition, there are also independent labour market and educational changes. Global trends are more specifically discussed in the Competitiveness document and less in the two other vision documents. These are briefly summarised in the following, focusing not so much on trends in themselves, but rather on their (complex) impact on the fields we focus on and, if possible, considering Estonia's special characteristics.

- Accelerating technological development and automation, the emergence of new forms of work and jobs², and the disappearance and transformation³ of several work tasks require greater flexibility and new skills from employees. On the one hand, technology-related skills are involved, and, on the other hand, soft skills relate to being human.⁴ At least a few widespread but in-depth professional competencies (the so-called T-shaped skills model) help people to re-orient themselves in the labour market. This skill profile reduces the risk of being left behind due to rapid changes and labour market polarisation. Growing uncertainty and the associated risk of mental health problems necessitate the development of self-regulation, tension tolerance and similar personal skills. New skills are increasingly being developed outside school, in informal and non-formal learning.
- Rapid changes in the economy, internationalisation and acting in global value chains increase the importance of teamwork and cooperation with external (international) partners in companies. The number of mobile workers is increasing. The ability to acquire, adapt and apply new knowledge in the context of your business model is important. This requires a very good domestic training and retraining system. Schools, in turn, need to include more people with entrepreneurial experience in their learning to stay competitive and keep up with the latest trends. If demand for new skills is constantly changing, skills mismatches will also increase. This leads to the need for refresher training and retraining and for breaks needed for self-improvement during working life. A possibility for this is provided by concentrated and short-term learning modules, leading to “nano-degrees,” and learning paths where shorter modules form a comprehensive learning path that helps to adapt to the changing needs of the labour market.
- E-learning is expanding, supported by machine learning and learning analytics. E-learning is definitely an opportunity for Estonian universities/schools to sell their top-level knowledge and skills. However,

2 Increasingly important jobs include e.g. machine and artificial intelligence specialists, big data experts, process automation experts, digital security specialists, user experience managers, human-machine interaction experts, robotics engineers and blockchain specialists (World Economic Forum 2018, Competitiveness Report).

3 According to McKinsey's Future Work Report, nearly half of the work tasks in 2016 will be automated by 2030, including nearly 60% in low- and medium-skill jobs, and a quarter of high-skilled jobs.

4 These include e.g. empathy, creativity, initiative, critical thinking, persuasion and negotiation skills, detail perception skills, resilience, flexibility, and the ability to solve complex problems. In addition, emotional intelligence, managerial skills and social influence are mentioned as more important than before. (World Economic Forum 2018, Competitiveness Vision Document).



the expansion of e-learning will lead to increased competition in education.

- In Europe, including Estonia, the proportion of working-age population is falling in relation to dependents, which increases the need for lifelong work and education.
- Europe's aging population and the rapid growth of the number of young people in Africa, as well as the growing income gap, also increase migratory pressure. Migration by climate refugees is increasing alongside economic migration. Estonia's attractiveness as a destination for migration is increasing. From an educational perspective, greater migration means the need to learn different languages, to learn about different cultures and religions, to be prepared to teach and integrate people from different cultural backgrounds, and to prevent radicalisation and instability through education and youth work.
- The education market is internationalising, and there is increase in Estonian students moving abroad and students from other countries moving to Estonia. The challenge for Estonia and higher education institutions in Estonia is to find ways to bring Estonians that have studied abroad back to Estonia after the end of their studies and to link foreigners studying here with the Estonian labour market.
- In the global labour market, countries and cities compete for talent. Estonia must hit the right moment to create an ecosystem suitable for global talent in Estonia and to

grow our position in global value chains. If we want to see a structural change in the economy and move towards more complex jobs, the skills and knowledge of the workforce need to be developed in the way of advance for some time, thus increasing mismatches of skills to the needs of the labour market.

- In parallel with real migration, a global virtual labour market and platform economy are emerging, increasing the need to work in multilingual and cultural virtual teams and develop the skills required for this.
- Changing geopolitical power lines in the world are increasing instability across the entire international system. In such a situation, it is important, on the one hand, to see the possibilities for Estonia and, on the other hand, to be alert to the dangers. Uncertainty is exacerbated by the rapidly changing technical environment, the risk of natural and social disasters and information pollution. This, in turn, leads to threats of the growth of protectionism and extreme nationalism. In order to maintain the cohesiveness of society and a democratic state based on the rule of law, it is important that education addresses value development – seeking common values and promoting critical thinking and a responsible attitude towards society. Value development is not just about the content of learning, but also about school culture and management, the learning environment and learning methods.

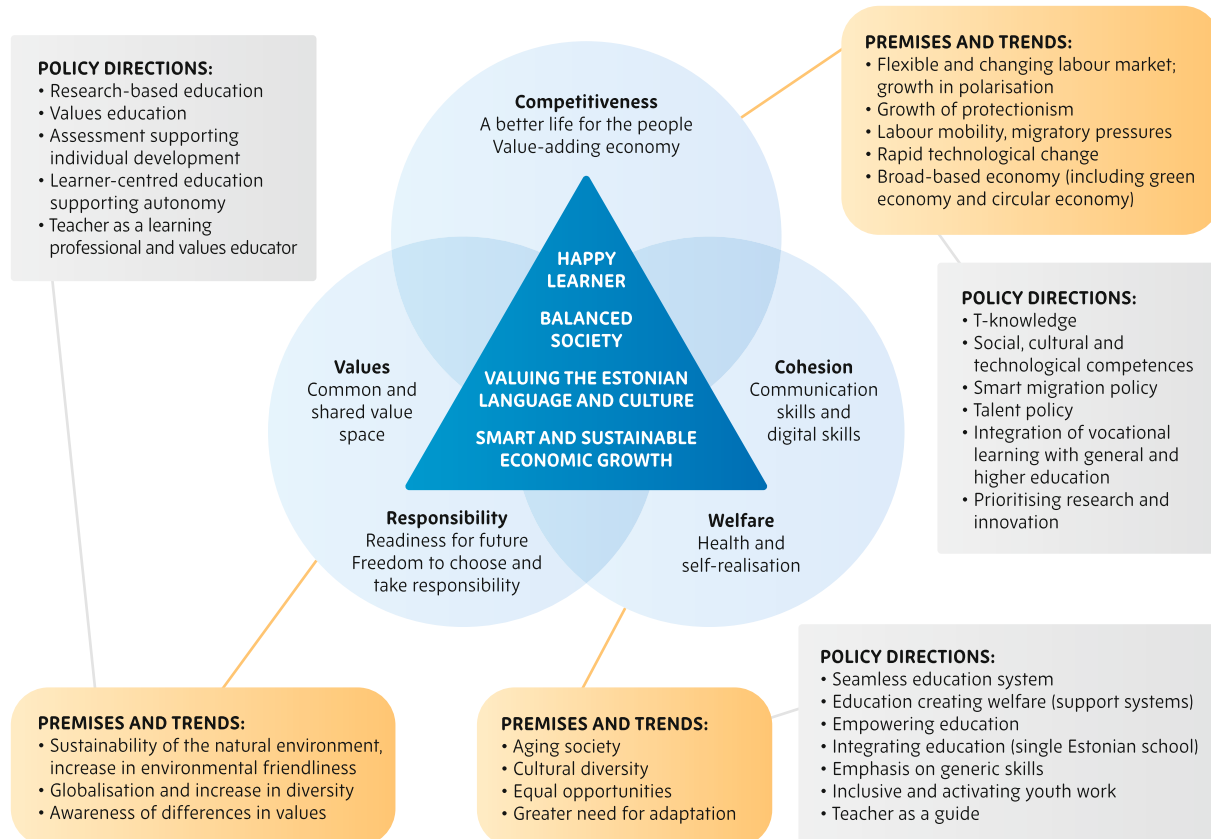
4. WHERE TO GO? DIRECTIONS AND GOALS IN EDUCATION, RESEARCH, LANGUAGE AND YOUTH POLICY

Considering the changes that are taking place around the world and our current strengths and weaknesses, five main goals have been formulated for 2035:

- a “seamless” educational system that supports individual choices, i.e. smooth transitions;
- valuing the Estonian culture and language and a cohesive society;
- new skills and better use of existing skills;
- learning as collaboration, and the teacher as a guide;
- research-based mindsets and top-level universities.

Figure 1 summarises the image of the future Estonia from the three expert groups (competitiveness, values and responsibility and cohesion and welfare) in aspects that can be influenced by education, research, youth and language policies, trends affecting Estonia’s development and major new policies.

Figure 1. Smart and Active Estonia 2035: ultimate goals (in the middle), main topics (blue background), premises and trends at both personal and national level (orange background) and main policy directions (grey background)



A SEAMLESS EDUCATIONAL SYSTEM THAT SUPPORTS INDIVIDUAL CHOICES

In the Estonian education system, the flexibility of all study levels and directions is increased and quality is harmonised. Education is seen as a continuum in the human life cycle and a system of life-long learning is created that motivates people to maintain their learning habits. The education system supports fast retraining and provides (refresher) training for people of all ages. There is no obstacle to continuing a learning path regardless of the time or reason for the interruption in education. Learning pathways have become more individualised from kindergarten to postgraduate refresher training. This is due to the lengthened study times and work paths and increasing job mobility. The topics and activities that are important for fulfilling the vision are as follows:

- **Flexible individual learning and a community approach to education.**

Children, young people and adults of one region are offered diverse learning opportunities. The learning environments of general education and vocational schools, adult education institutions, cultural and youth institutions, workplaces, etc. are thus combined, and local businesses and civic organisations are actively involved. Individual learning paths are developed by combining these and considering the learning in different environments. The curriculum can be (partly) completed in a virtual Estonian-wide or international study environment. The involvement of parents in school life and the capacity of local governments to organise the educational landscape grows significantly.

- **More attention to early awareness of learning difficulties and other special needs** and networking between education,

youth, social and other fields to find and implement interventions for welfare. Talented pupils have the opportunity to complete several school years in one year, participate in university courses and work in research groups while still at school.

- **(Mandatory) secondary education that integrates vocational education and general education**, takes into account the individual characteristics of both the duration and content of learning, and allows the most talented to proceed to higher education. This requires the nationalisation of secondary education and a thorough overhaul of basic and secondary education curricula. A small proportion of young people who are not able to complete secondary education will receive a short (6 months to 1 year) internships from companies or a company and an educational institution to learn a simpler profession. Vocational training will be organised in 2035 on a large scale in cooperation with companies and in companies.
- **Vocational/professional education is not understood as a separate education sector, but as part of learning at different levels of education and learning environments**, starting from secondary level and ending with an industrial master's / doctoral degree. In order to develop vocational fields and update learning, it is expedient to establish **vocational development centres – competence centres** where all relevant training in the field is concentrated – that combine the competences of vocational education institutions, professional higher education institutions and universities. The centres analyse training needs and future trends and carry out applied research for companies in the field.



Photo: Renee Altrov

- **The boundaries between professional higher education and post-secondary vocational education, and professional higher education and academic higher education are redefined.** Increasing the level of post-secondary vocational education to the same level as professional higher education and continuing to increase the share of internships will improve job opportunities. At the same time, short courses for the acquisition of vocational skills are maintained.
 - In higher education, the **requirements for different degrees should be diversified** and a legal framework should also be created for nanodegrees, to be received upon the completion of 3- to 6-month study modules.
 - **Various forms and ways of youth work support greater participation of young people in society.** Youth work helps young people to best realise their development potential by providing a trustworthy, supportive and secure environment for young people. Those who leave school or work are brought back to school or work in cooperation with educational, youth and social work institutions. The state creates **more flexible legislation to support young people starting work after their studies.**
- Young people are informed and provided with knowledge, and opportunities are created to enable them to speak, above all, in decisions concerning them.
- **It is possible to learn not only at school, but increasingly also in other environments:** at work, in youth work (including hobby education), acting in different communities and by gaining experience. The share of learning in the work environment increases in lifelong learning. It is agreed between the social partners how responsibility (including financial responsibility) for workplace learning is divided between the learner, employer, school and state / local government. **Learning in different environments is acknowledged and recognised and the competence of instructors in the workplace is increased.**
 - **The skills demand and supply evaluation system is further developed,** which allows the state to obtain an overview of the profile and skills of the labour force. It also gives people knowledge of what skills are worth learning. In addition, a lifelong learning system with financial support is developed, which also provides retraining opportunities at a later stage.

VALUING THE ESTONIAN LANGUAGE AND CULTURE AND A COHESIVE SOCIETY

Global mobility in both the labour market and private life is increasing and the impact of the digital environment on culture, intrapersonal communication and equality of opportunity is increasing. Top-level research and higher education are international. All this presents a challenge to the Estonian language and Estonian cultural space. It is important to see language and culture as, on the one hand, consistent and, on the other hand, constantly changing – alive and evolving. The goal is that in 2035, the Estonian language will continue to be reputable, protected, researched and developing. Estonian is flexibly adapted to the rapid development of science and technology. The Estonian language skills of people with Estonian roots living abroad have been preserved. The teaching and skills of different foreign languages have expanded.

The cohesiveness of society is manifested in the ability of people from different backgrounds and cultures to work together, in the adherence to common goals and rules, in social responsibility and in support to each other. Cohesion is enhanced by a common language and identity, but also by knowledge of other languages, shared values, mutual trust, universal human rights, and equal access to different services and benefits. The topics and activities that are important for fulfilling the vision are as follows:

- **Estonian residents mainly use Estonian as the language of communication and of study, administration, information and work.** At the same time, foreign languages are learned and there is tolerance for speakers of other languages. Estonia also has a place for the languages and cultures of national minorities. Lifelong learning provides high-quality education in Estonian and learning of the Estonian language.
- **The transition to the single Estonian school/kindergarten reduces national segregation and increases the future competitiveness of children.** The single Estonian school can work according to different models, but it is important to provide a primarily Estonian-language environment based on early integrated subject and language learning, to support multilingualism (i.e., mother tongue and other languages), and to value the state identity of Estonia and the preservation of cultures of origin as well as the capacity for intercultural mediation. The challenge for a school that combines pupils with different home languages and cultural backgrounds is to create a new kind of school culture and to unite the parental community, considering the interdependence of relationships, cultures and identities and preventing conflicts.
- **In addition to the Estonian-language school, (paid) English-language and other language schools based on international curricula operate in major centres** to support transnational mobility and make Estonia an attractive place to work and live for highly qualified workers.
- **In higher education, internationalisation grows primarily through the increased involvement of foreign lecturers and short-term learning mobility.** Estonian is the main language of learning at the first two levels, but teaching in several languages is normal. Foreign students are taught the Estonian language and culture and are encouraged to integrate into the Estonian labour market. The requirement to acquire Estonian language at a level that allows participation in the daily activities of the university is established for full-time foreign lecturers.

NEW SKILLS AND BETTER USE OF SKILLS

The Estonian labour market currently places little value on top skills. Our people have more skills than they use in the labour market, according to the PIAAC study, which compares the information processing skills of adults in different countries. It is a message for the education system, where, in addition to good knowledge and skills, the application of skills and entrepreneurship should be taught. It is also a message for a labour market that is based on cheap rather than smart labour. Management and work organisation skills are becoming increasingly important. Three topics lie at the heart of the OECD's skills strategy: developing the right skills, using skills effectively, and involving people with skills, through both wider employment and migration. The main directions of the strategy are: increasing people's involvement through health promotion and active citizenship, increasing work efficiency, high employment in good jobs, supporting skills development with a clear division of responsibilities, and information based on demand and supply for decision makers. The topics and activities that are important for fulfilling this vision are as follows:

- **Learning focuses more on the acquisition of skills and on the willingness and ability to apply (independently) what has been learned**, not just on the acquisition of knowledge. It is important to increase operational capability and this allows a person to be the master of their own life: to understand the nature of the problems, to set personal goals, to plan activities to achieve the goals, to make the planned happen.
- **The future education system must “produce” technologically literate people** that implement and create new opportunities for social development and are familiar with modern methods of data collection and analysis. New technologies are acquired as separate skills and as integrated into other subjects. In addition to technological skills, curricula strike a balance between the artificial and natural, humanitarian and social.
- **Adaptation and self-management capability, social skills, critical thinking skills and creativity, entrepreneurial attitude and perseverance** are important at every level of education, as the environment is changing at an ever-increasing pace. In order to acquire these skills, it is important to change teaching methods and environments and find opportunities to evaluate skills. The increasing importance of these skills in the future indicates that, in addition to learning in the work environment, training courses, including courses that integrate specialised and general skills, are still needed.
- **Estonia manages labour resources wisely**, considering both maintaining and increasing the labour market activity of the Estonian population and better application of their skills, as well as targeted recruitment of highly qualified labour from abroad. This is done by setting targets for the internationalisation of higher education and supporting remigration. In order to better apply the skills of our people, attention is paid to job opportunities for young people, to retraining older people and to integrating other native speakers. Flexible forms of work and remote work are widespread and the ability to create virtual teams, work in and manage them becomes important.

LEARNING AS COLLABORATION AND TEACHER AS A GUIDE

The lifelong learning strategy for 2020 aims to renew the learning concept. Learning is learner-centred and collaborative, focused on empowering and supporting each learner, self-realisation and coping in different roles. Significant keywords include the meaningfulness of learning, learner and teacher autonomy, close cooperation, and conscious and systematic feedback between all participants in the learning process. Joy in school – the subjective well-being of learners and teachers in the learning process – is more valuable than before. As the learner's freedom of choice and responsibility increase, the risk of exclusion of the weaker will also increase. The ability of the teacher to be a tutor, to mentor pupils, to contribute to forming the learning path and support its successful navigation, is important. The topics and activities that are important for fulfilling the vision are as follows:

- **By 2035, national curricula for pre-school and general education will be redesigned.** The goals of a modern learning concept are thus used throughout to support the development of self-directed learners that are open and ready for lifelong learning, are motivated, and are able to find opportunities for self-realisation. One of the major challenges is a profound change in national syllabi based on the values and competences described in the general part of the basic and upper secondary school curriculum, and the introduction of **more collaborative and problem-based learning methods**. Learners move on their learning path at their own pace, which could be “normal,” “faster,” or “slower.” The curricula for all grades and types of education have room for close-to-life choices to develop some professional or vocational skills.
- **The teacher's profession is becoming more diverse.** The teacher is a learning professional that possesses modern knowledge of learning and teaching. When working in different learning environments, the teacher can independently evaluate and decide, in collaboration with colleagues and parents, how best to support and develop each learner. **The teacher is also increasingly a value educator** that consciously develops the learner's attitudes through communication, choice of methods, and so on. Methodological and assessment tools for learning are developed to focus on the development of skills and value attitudes alongside the acquisition of knowledge. The focus of the content of the teacher's work moves towards guiding learners, directing information choices and activities, and feedback. On the other hand, **there are more people in the teacher's profession that do not have pedagogical education**, but who bring practical skills and work experience to the general education system as well as to higher education. Movement between the teaching profession and entrepreneurship, for example, must be supported by a variety of support schemes, one of which aims to develop teaching skills.
- **One of the most important goals of collaborative learning, while taking individual differences into consideration, is to increase the teachers and learners' welfare**, both physical and mental. Welfare at school also affects overall satisfaction with life, academic success of students, probability of graduation and continuing education.
- **In a technology-rich and individualised learning environment, the teacher's work becomes data-based.** By using data on pupils' choices and progress on their study



paths, and the quality and speed of solving tasks, the teacher can monitor student progress, provide personal feedback, and guide further action. To be able to operate successfully in a technology-rich seamless educational space, the teacher is assisted by educational technicians and educational logistics if necessary. Teachers' reporting burdens are reduced through e-solutions.

- **Teacher training** focuses more on how to develop teachers' skills to develop learners' key competences and values, to guide the learner-centred individualised learning process, to develop learners' self-management skills, and to create an empowering and integrative educational environment.
- **The learning process focuses more on developing a personal learning path.** The learner must receive effective support for learning and career choices, to discover and develop talent and to develop self-management skills. The assessment provides motivational feedback to support the learner in taking further steps. In a learning environment that brings together different learners and yet follows individual differences, **the role of support specialists and their collaboration with teachers increases.** Support specialists are also involved in
- supporting the life skills of learners and take care of mental and physical health.
- **In 2035, the professions of teachers, school directors, support specialists, youth workers and lecturers are prestigious and well-paid,** and include continuous opportunities for self-improvement and feedback.
- **Regional teacher shortages can be alleviated** by reorganising school and education networks and by creating flexible forms of work, expanding virtual learning and rotation of teachers. This requires an infrastructure that allows for working even at relatively long distances.
- **In a changing education system, the school director has a key role** in creating an evidence-based learning culture that supports autonomy and welfare in an organisation that supports learner-centred and collaborative learning. School directors must be evaluated and, if necessary, recalled. The capability of educational institutions to analyse their activities increases, and the critical analytical bystanders are used to better notice the strengths, weaknesses and development resources of educational institutions.

RESEARCH-BASED MINDSET AND TOP-LEVEL UNIVERSITIES

Research has several major and irreplaceable roles. Research is part of culture, providing a scientific way of thinking and understanding of how the world works. Research is the basis for research-based education, both in content creation and in shaping the educational process, and a precondition for innovation and economic competitiveness. The role of research and related innovation in the future will grow both in the economy and in other areas of life, including organising health and education. The major challenge soon is to turn the scientific mindset and evidence-based world view into a universal value that actually guides us. Research-based, fact- and evidence-based approaches are essential for the development of society's competitiveness, health and welfare as well as education.

High-quality higher education is expensive, international and competes globally for talented students as well as lecturers. At the same time, Estonian universities have a leading role in the development of the Estonian language and culture. If we want to be among the world's leading countries, we need to find ways to increase funding and improve the organisation of higher education. There is no higher education without research, and without the natural replacement of Estonian academic staff, higher education cannot be offered in the Estonian language. The topics and activities that are important for fulfilling the vision are as follows:

- In order to reduce the duplication of specialties taught, promote the pooling of research infrastructure, use existing financial and human resources efficiently and increase the competitiveness of our researchers and research institutions, the **consolidation of higher education continues**.
- The funding of research and higher education is based on the integrity of universities as institutions of teaching, research and development, and motivates cooperation between universities. In order to solve the funding problems in higher education and for the fairer allocation of the responsibility of the individual and the state for the choices made in higher education, **the inclusion of private money and the learner's contribution for higher education studies are increased**. The system includes state-guaranteed student loan and conditional repayment schemes.
- The state ensures the training of specialists to provide public services. On the other hand, uncertainty and the range of choices increase and learning paths are individualised. How should responsibility for educational choices be divided between the state, universities and people? **In the future, specialty choices will be directed by providing better information on demand for skills and labour market developments and by supporting learners in evaluating their skills**. In addition, the choices can be directed through tuition fees and related credit policy.
- **Public expenditure** on R&D accounts for 2% of GDP in 2035. The private sector finances R&D at least on the same scale. The share of project-based funds has decreased. Funding takes into account the fact that it also supports research-based higher education.
- In addition to increasing public funding and reducing project-based funding, support is also given to cooperation and networking between businesses and research institutions. Skills in adapting research results and applying them outside the

academy must increase significantly. Technology transfers and the intensification of development cooperation is supported, for example, by a **mobility support system** that supports researchers in a company for a certain period.

- To support business ideas emerging from entrepreneurship training and research projects and their pre-market

development, a **system is created to help provide bridge funding for the financial gap between the education system and private capital.**

- As a prerequisite for and consequence of cooperation between universities and businesses, the **development units of large corporations are attracted to be established in Estonia.**



In summary, we are aiming for a balanced and cohesive society in Estonia by 2035, and for inequality to decrease and welfare to increase. In terms of economic development and productivity growth, it is essential that it is broad-based, knowledge-based, and respects Estonia's special characteristics – that it values and adds value to our environment and nature. We value every human being and his self-realisation, and we maintain and develop Estonia's language and culture. In order to achieve these goals, education, research and innovation must be prioritised not only in words but also in actions and budgets, and to develop a smart skills policy and a seamless education system that leverages the development of every person.

