Summaries

EDITOR IN CHIEF'S COLUMN

Estonians Believe in Education

MART RAUDSAAR
Editor-in-Chief of Riigikogu Toimetised

The development of the Estonian language, culture and identity has been strongly connected with education. Issues of good education are also relevant today. The world is evolving rapidly, and we have to be able to keep up with the skills we need for that, and our education system must be able to provide them to learners. This issue of *Riigikogu Toimetised* offers a range of views on the state of our (higher) education system, on the quality we should demand from it, what it costs and what we should expect for our money.

Kadri Männasoo, Professor at the School of Business and Governance of the Department of Economics and Finance of Tallinn University of Technology, writes about investing in higher education and its potential expected rate of return in Estonia.

Kaire Põder from the Estonian Business School and Uku Varblane from the Foresight Centre examine the funding of higher education and whether students really have to work during their studies. The second article by Uku Varblane looks at possible scenarios for higher education in Estonia, using materials from the Foresight Centre's study "Future of Higher Education", sectoral reports and academic literature.

The central contribution in Focus section comes from Professor Margit Sutrop, who also participated in the discussion panel. She gives a summary of the main part of the report of the Higher Education Support Group of the Riigikogu.

Member of the Academy of Sciences Jaak Aaviksoo writes in the RiTo essay: "First, we might consider whether it is sensible to increase quantitative expectations for the whole education system when society becomes more complex. All this burden ultimately falls on the shoulders of teachers, leaving neither time nor energy for what is really important."

As usual, in addition to the focus topic, the new issue of RiTo also features contributions on other topics. We publish the second part of a study by Piret Tipner (Avarmaa) on the dangers of modern warfare and how to protect oneself against them. In the second part, the author also focuses on places for shelter, looking at the situation in East Viru County in Estonia.

From the RITA research projects, we publish the survey on the financial literacy of the Estonian population conducted by the market research company "Turu-uuringute AS", which will be continued in the future, and which is indirectly related to the focus topic of education. For four years now, Turu-uuringud have been studying how our people can handle money.

As regards political commentaries, former politician Peet Kask recalls how the

rules of procedure of the Parliament were set up in 1990–1992.

And last but not least – the Riigikogu Building celebrates its centenary this year. Head of the Library of the Estonian Academy of Arts Mait Väljas gives an overview of the birth of this magnificent building and the architectural details that can be found in it. Happy reading!

CONVERSATION CIRCLE

Estonians Should Continue Believing in Education

RIIGIKOGU TOIMETISED PANEL DISCUSSION

Toomas Jürgenstein (Social Democratic Party), Priit Sibul (Isamaa), Margit Sutrop (Reform Party), Marko Šorin (Centre Party) and Jaak Valge (Estonian Conservative People's Party) discussed education, its funding and what could be expected for it in the discussion panel of Riigikogu Toimetised on 9 November.

MARKO ŠORIN: Speaking of education and our history, I will borrow the words of Chairman of the Cultural Affairs Committee Professor Aadu Must that Estonians believe in education. He always justifies it by saying that when we were serfs and belonged to an oppressed class, one of the ways to get out of those frames or to have a better life was to get a better education. Nowadays the quality indicators of education should be understandable, unambiguous, measurable and analysable or comparable.

Naturally, we need the kind of education that ensures that each member of society will be able to cope in their life. And not only cope, but also steadily improve their quality of life. After all, the principle is that an educated person is a person who can cope better in life. It is also cheaper for society or the state, if it is allowed to put it this way. If we know in which direction we want to go, we will find the money.

JAAK VALGE: Besides my work in the Riigikogu, I am also Associate Professor at the University of Tartu, although at present my workload is very small. There are three nations in Europe that have their own state but have never had their own aristocracy – Estonia, Latvia and the Czech Republic. This means that in Estonia, the role of the nobility had to be played by the intellectual aristocracy – the top of the pyramid of society, from where the ideas on the basis of which society was to develop were to emerge.

Today, the process of learning has changed to a certain extent, but the aim of learning is still the same – to acquire knowledge, skills and understanding. The notion of quality is currently very important for education in Estonia. Quality and money are not mutually exclusive, quality and quantity are certainly not mutually exclusive, but perhaps our education has become a little too quantity-based. With indicators based on quantity, it may happen that the quality side, especially in the evaluation of higher education institutions, starts to suffer.

In universities, quantitative measures are the most common. They can also undermine the quality of learning if, for example, universities are assessed by the proportion of students who graduate in the nominal time. Obviously, this does not improve quality. The level of university graduates can be assessed indirectly by a variety of indicators, in particular by the proportion of graduates who realise their potential in their profession after graduation. Again, of course, this is very differentiated, sometimes it fits and sometimes it does not.

TOOMAS JÜRGENSTEIN: I have been a teacher most of my life. Estonian education needs to be flexible. Flexibility and diversity are certain things that are reflected also in the history of our education. As a schoolteacher, I can assure you

that the belief in education and the desire to educate oneself is really lifelong today.

The focus on the results of national exams and school rankings was clearly too much. It did nothing good for the internal climate of schools. I dare say that the situation has improved considerably. Now, when the ranking tables are published at some point, they cause a day or a day and a half of excitement, but nothing more. In the case of pre-school education, it is clear that it has to be playful, it has to lead the pupil to the path of education, it has to create in the pupil a feeling that intellectual activity is something enjoyable.

For me, it is important that, if we have a well-educated person coming out of higher education, who should have a broader picture, then alongside that there should be vocational training, where we have perhaps not highlighted enough the importance of being a master, the pride in being a master. Those who have acquired vocational education are not service workers, they are masters. When we talk about the quality of education, we should try to understand the extent to which we have been able to achieve either playfulness or openness at the various levels of schooling, as well as selectivity and responsibility, and being a master.

PRIIT SIBUL: Education is a set of skills, knowledge and experiences that can be used to describe both a person and a society. It is a very complex system. In the history of our country and our nation, education has had a very important place and role both in society and within families. Think, for example, of the families of the generation before last, where the economic situation was complicated, but still, if the eldest son inherited the farm, then it was tried to send other sons to school to get an education, even up to university.

What should the education system be like, or how can its quality be measured? There should be a sufficient range of different criteria and characteristics. The system will change and we will get what we measure. If we only watch the school ranking tables, we could start cramming for national exams again.

Surely it is possible nowadays to find more facts and knowledge, and more easily. Alongside knowledge and facts, developing attitudes and values is important in the education system. The education system should provide the basis for us as human beings to be able to understand each other. On the other hand, it should be personalised to such an extent that it would be interesting for us to interact with each other. The issue of values and attitudes is becoming increasingly important in order to understand and cope in the world and to enjoy being in society.

MARGIT SUTROP: In measuring quality, we should first ask what kind of education we want. What are the aims of education in general, and what the educated person we want to develop and whose development we want to support through education should be like? In my opinion, in this respect Estonia has moved much closer to an agreement by drawing up the Vision of Education 2035.

Two very important central concepts in education are lifelong learning and learner-centred education. Education is important in three roles: in professional life, in social life and in personal life. Education must equip individuals with competences consisting of three components: knowledge, skills and attitudes. The shift of focus in Estonian education should be more towards on how we think.

What is good education? First, we should try to assess whether education is built on lifelong learning. We can assess teachers, i.e., how teaching takes place, who teaches and how they teach, and what kind of environment to support learning they create. Another way is to assess learners and see whether they acquire the necessary competences. And the teacher should also enjoy teaching.

Wilhelm von Humboldt said that education is getting connected with the world. I have tried to develop this further in my philosophical discussions. In order to connect with the world, a person must know themselves and must know the world.

FOCUS

Looking for Sources of Good Education

JAAK AAVIKSOO
Member of the Estonian Academy of Sciences

The aim of this essay is to try to find a way to understanding good education. The starting point is the recognition that in a fast-changing world, the organisation of education seems to stand still, and it is explained by arguing that the real qualities of good education remain unchanged through time.

At the heart of achieving a good education is the teacher's ability to help students understand the subject – to move from saying it to understanding it. Who can do this is a good teacher; a person who reaches understanding is an educated person. Another quality identified is the challenge of maintaining and fostering pupils' inherent curiosity, which ideally should grow rather than wane throughout the school years. A third quality is the importance of accessible challenges that offer all pupils, regardless of their abilities, an experience of success and motivating but objective feedback.

Based on this, the central element of education is the teacher and the learning environment they create, where all the qualities pointed out above are born. The head of school is responsible for creating and maintaining such environment.

In the concluding section, an attempt is made to formulate the conclusions that can be drawn from the views presented for the purposes of education policy choices. Teacher empowerment holds the central place.

The Role and Quality of and the Bases for Funding Higher Education

MARGIT SUTROP
Higher Education Support Group of the Riigikogu, Chairman; University of Tartu, Professor

There are 18 institutions of higher education in Estonia. Their task is to offer higher education based on cutting-edge scientific knowledge, to train specialists and managers with higher education in specialities necessary for the state and society, to be innovation engines, to engage in ethnic sciences, to make a contribution to world science, and to carry out a knowledge transfer into society. Estonia's global competitiveness, the sustainability of the Estonian language and culture, and the future of the statehood of Estonia will depend on the quality of the Estonian higher education.

The Estonian Education Sector Development Plan 2021–2035 sets the target of increasing the proportion of people with a tertiary education among 25–34-year-olds to 45 per cent. The starting level in Estonia was 43 per cent in 2020. A high proportion of countries in the world are ahead of Estonia.

Higher education has a value for people and culture as well as for society. Higher education is a major guarantee for a happy life for every citizen, the sustainability of culture and national competitiveness. Higher education, as a general rule, ensures material and spiritual well-being and a longer life. People with higher education are therefore lower cost to the social system.

Higher education in native language creates a national intelligentsia, shapes and secures cultural identity, and gives an impetus to the establishment of native-language (research) terminology, and

a language in which to think and communicate. Higher education institutions help create a cohesive, safe, peace-minded, entrepreneurial and developing Estonia that is mindful of the natural environment, that upholds and promotes the linguistic and cultural heritage of its ancestors but also looks boldly to the future. Through higher education, increasing competitiveness of a country is ensured: the capability to establish and implement new technologies for both economic development and increasing people's wellbeing.

The principle of free Estonian-language education is beautiful but the prerequisites for it have not been fulfilled. First, students need to have sufficient income even to study for free. The current student loan and allowance system does not ensure that. Second, a prerequisite to providing high-quality free education is to determine a fair price for it.

On 26 October 2021, concern for the future of higher education in Estonia brought together 30 members of parliament who established the Higher Education Support Group in the Riigikogu with the aim of developing a cross-party solution to ensure the sustainability of higher education. On 10 November 2021, the support group organised a public seminar on higher education.

The Management Models of Universities, and the Next Generation and Salaries of Teaching Staff

HANNA KANEP
Universities Estonia, Executive Secretary

A person can become a member of the teaching staff with a doctoral degree after a 21 years' worth of education investment. Low income and the status of student, and a poor salary perspective as a member of teaching staff have been dragging down the attractiveness of doctoral study for years. A half of the plan to break this trend is in the Riigikogu and will hopefully be implemented from this autumn. Doctoral students will become junior research fellows with the average salary in Estonia. Universities have shown that an ensured income and more demanding evaluation yields results – the proportion of those who complete their degree in six years has increased from one fifth to one third.

We do not know how much this picture is affected by the increasing demand in the private sector and the low salaries in the higher education sector. The salary perspective in universities is the lowest especially at the beginning of the career and on posts with a focus on teaching which is also connected with general discontent with working conditions and workload.

The baseline funding for research accounts for 2–9 per cent and national research grants account for 0–13 per cent of the revenues of various universities. Universities with a significant volume of research (University of Tartu, Estonian University of Life Sciences, and the Tallinn University of Technology) can mitigate the salary problem from the increase in research funding by replacing study with research. This has been done partially. For example, in the new career model of the University of Tartu, the posts of associate professors were redefined, and this involves a greater research obligation and a responsibility to bring in project money.

An increase in public funding of research gives the state a greater role in directing domestic research activities. In the Estonian higher education, the state as the only big investor has a determining responsibility for the education of nearly every second Estonian inhabitant, as well as for the next generations of teaching staff and researchers. In terms of the higher education funding, it is worth discussing whether the volume of the

current doctoral study is in line with our objectives.

Estonian Student: Work, Allowances, and Mental Health

ALLAN AKSIIM
Federation of Estonian Student Unions, Public Policy Advisor

The majority of the Estonian students work; most of them do so in order to cover their living costs (78% of students). Since the higher education reform that came into force from 2013, the employment rate of students has largely remained unchanged.

However, there are more reasons for working than the need to cover living costs. A student may wish to obtain work experience and to raise their quality of life.

In Eurostudent reference countries, students work and study for an average of 47 hours per week, but in Georgia, Malta and Estonia they study and work for an average of 53 hours and more in total. Estonian students dedicate an average of 39 hours per week to their studies, and the students work for seven hours less, that is, for 32 hours. It is also significant that Estonian students also receive a considerable proportion of their income from the work they do – the income from work per month in Estonia is higher on the average (64%) than the pan-European average (52%); as regards neighbouring countries, the indicator is at an approximately equally high level in Lithuania (65%).

Students can generally receive three types of financial support from the state during their studies: a need-based study allowance, a specialty scholarship or a performance scholarship, and a study loan.

Student allowances and scholarships have the greatest visible impact in doctoral studies. In spite of this, the small amount (660 euro from the state plus an additional allowance depending on the university) and the fact that doctoral students are too often employed in jobs unrelated to their doctoral theses has been considered a sufficiently big problem so that a reform of doctoral studies is being implemented under the leadership of the state and with the support of universities. The relevant Bill is currently in the Riigikogu.

Higher Education and the Labour Market in View of OSKA's Projection of the Need for Labour and Skills

TIIA RANDMA
Estonian Qualifications Authority, Member of the Board
YNGVE ROSENBLAD
Estonian Qualifications Authority, Head Analyst / Development Manager

The future labour and skill projection system OSKA prepares projections of the need for labour and skills in a ten-year perspective for the economy as a whole and in all areas of life and compares them with the training offered in higher education and continuing education. Projections are prepared, taking into account the future trends, development objectives, and competitiveness. After surveys are completed, the development of sectors, economy and society, as well as the short- and long-term impact of extraordinary factors, such as the COVID-19 crisis, are monitored.

The sustainability of the higher education system is affected by the number of university-age people having fallen by two times, as the birth rate fell from 25,000 to 12,000 in the 1990s. This means that the current variety of curricula is complicated to maintain, and the number of students can be increased or even maintained at the same level on account of adult students and foreign students.

The same tendency where new generations are up to two times smaller than the earlier ones will also have a noticeable effect on the labour market in the coming decade. By 2030, there will be 47,000 fewer working-age people in Estonia in comparison with 2019, while working-age people under 40 years of age will number less by as much as up to one third.

The young generation will not be able to cover the need for new labour neither in vocational nor in higher education in the coming decade. The gap will be bridged by better employment of working-age people, a longer working life, and foreign labour, as well as automation, digitalisation, and structural changes in the economy which will increase the need for flexible study options reconcilable with work and family life.

Although the modern and future economy and society require good general skills, digital skills, and understanding of related specialities, in addition to professional competence, the need for professional deep competence will not decrease. The growing need to acquire and improve skills alongside work and private life across the lifespan is requiring universities to also offer shorter, compact and modular study units (including micro-degrees) alongside flexible forms of study and traditional curricula.

The Strengths and Weaknesses of Higher Education Funding Models

AUNE VALK
University of Tartu,
Vice Rector for Academic Affairs

In a knowledge-based society, the number of students and people with higher education is considered one of the main indicators of the competitiveness of a region. Ben Ansell (2008) points out that, in higher education funding, countries face a choice where only two of three aspects of critical importance can exist at the same time. These aspects are a high university enrolment rate, fully national higher education funding, and a low total cost of higher education.

Today we are finding ourselves in a revolutionary situation in Estonia as we are having all of the three above-mentioned aspects in place. The Estonian Education Sector Development Plan 2021–2035 approved by the Government last November is planning to increase the proportion of people with higher education in the age group of 25–34 years from 41 per cent to 45 per cent. The OSKA future reports are also projecting the need for an increase in the number of people with higher education. The first preference for both universities and students is for the state to find the estimated *ca* 100 million euro per year (1.5% of GDP) lacking from the Estonian higher education, and for us to preserve the Nordic free high-quality education model.

In the classification of higher education funding models, it has been said that, essentially, we can speak of two models: the free "Nordic model", and the Anglo-American model which is also in place in Japan and Korea and where the cost-sharing of students is relatively high. A more social version of the latter model is used in the Netherlands where the cost-sharing of students is universal, but the amount is on the moderate side – 2,400 euro. The rest are using intermediate variants to mitigate underfunding. From Estonia's point of view, the "Eastern European model" that was in place in Estonia before 2013 should also be discussed.

Funding of Higher Education Studies from Students' Perspective: How to Cover Living Expenses

KAIRE PÕDER
Professor, Estonian Business School
UKU VARBLANE
Expert, Foresight Centre

Education is special. Sociologists of education have known this for a long time. This means that students from high socio-economic backgrounds are more likely to benefit from generously and universally funded education. Although financing students is primarily an issue of educational equity, or access, the organisation of the financing of students is not without significance for universities either, since tuition fees (their size, who pays, and other organisational aspects) have an impact on the university's revenue base, and student grants also do not operate without leaving their mark on the activities of universities. Student allowances have an impact on drop-out rates, on working during studies and on completion of studies in the nominal period, i.e., they have a direct impact on the so-called production process of universities.

We show that there are four worlds of financing of students, and Estonia is swaying between them – while low average tuition fees point to a Nordic orientation, low study allowances make us more like continental Europe. In this comparison, however, our needs-based study allowances remain very poor. Thus, it is necessary to make a political decision about where Estonia's higher education system wants to belong. However, we must also consider the context, or the welfare state model we have chosen, in which education as a whole is generously publicly funded against a background of social spending, while state spending on primary, basic and secondary education takes precedence over higher education, and private funding is scarce in the system.

We recognise that if no more money is provided to the system, policymaking will have to focus on the issue of distribution, or to whom and how to distribute the scarce money. As long as students are legislatively *de jure* part of their families and *de facto* independent, there will be a contradiction. If the purse is not opened to support the students, or no money is added to the system, the options are to abolish performance-based support, to consider partial "defamilisation" and/or to make the distribution arrangements more efficient in order to reduce the transaction and agency costs of awarding bursaries, which may also be indirect and social in nature, for example encouraging the creation of fictitious families or reducing trust in state institutions. The alternative is to accept need-based intensive working of students, which is biased towards those with weaker background characteristics, thus penalising them with a higher risk of dropping out and postponing graduation.

Another option for financing students is to take a "private deal" approach, and create loan systems that support learning and tax the subsequent salary bonus. However, such an approach would require a major change of mindset and a reorientation of public funding, as well as of supervision and institutional support.

Investment into Higher Education and Its Projected Profitability in Estonia

KADRI MÄNNASOO
Professor at the School of Business and Governance, Department of Economics and Finance, Tallinn University of Technology

Countries are not defined only by their population numbers and territory, but also by the level of human development they exhibit and the quality with which this is managed. Higher education plays a major role in contributing to both. The accumulation of human capital in higher education is a time consuming and expensive process that can be measured as a long-term investment from the perspective of both the individual and the society. Despite the fact that public opinion places a high subjective value on higher education, there are three crucial factors that obstruct sufficient state funding for universities: the lack of compelling evidence about the positive returns to higher education; the unforeseeable future risks of investing into higher education; and the allocation of costs and benefits of public higher education in a way that counteracts the redistribution and may even widen the income disparities in the society.

By concurrently optimising the revenue from the investments into higher education made by the individual as well as the government in its capacity as the representative of the society, we see that the expected rate of revenue is positive for both sides and that its volume, 7.5 and 8.6 percent respectively, surpasses the long-term performance of international stock markets. By adding to the direct income and tax interests of higher education also indirect benefits from the healthier, more conscious, democratic, and secure individual and society with a higher potential for development, the expected profit rate of higher education increases to nearly 20 percent for the individual and to nearly 17 percent for the government and the society. Simulation analysis shows that the profitability of higher education depends largely on the efficiency with which universities contribute to the value creation abilities of the students. The more profitable the knowledge and skills capital of a university graduate and the higher its price as expressed in the salary bonus on the labour market, the higher is the revenue from higher education both for graduates as well as the society – and particularly to the latter. The more efficient higher education is and the more it creates value, the higher is the contribution of new students themselves in terms of time and finances, and the more the society wins in terms of saving public funds and receiving higher tax revenue from the higher future salaries. This shows that a well-functioning higher education that does in actual fact offer a new quality is an asset for the whole society. The objective of the policy on higher education is to create incentives that motivate new students in higher education to fully apply themselves and concentrate on their studies, while motivating the universities to share their knowledge and skills in the best way they can but demanding a lot in return as well.

Trends and Possible Scenarios in Higher Education

UKU VARBLANE
Expert, Foresight Centre

Reforms in education are provoked by four main development trends – new technologies, personalisation, internationalisation, and change in societal expectations. Technology-based business models are coming to the forefront, complementing the contemporary education landscape but

also competing with it. The broader introduction of non-academic certificates blurs the lines between higher education and other types of post-secondary education.

The growing importance of lifelong learning also leads to diversification among students. An increasing percentage of students do not come straight from the secondary school – in Estonia, the 25+ age group has grown among the students by more than ten per cents in ten years. This creates the expectation that higher education should mould itself to a variety of lifestyles and preferences. However, more tailored approaches lead to additional costs, at least at the outset.

Despite the setback of the corona pandemic, higher education is turning increasingly international. Elevated prominence in given to partnerships between higher education institutions and curricula of different countries, and to international massive open online courses, or MOOCs. Internationalisation opens market opportunities for Estonia's higher education institutions but also intensifies competition from the online courses and learning environments of top universities.

Higher education institutions are expected to lend a hand in managing the response to massive social changes and in problem solving – both when faced with global challenges, such as the climate crisis, or in evolving local economies and living environments.

The two factors that have emerged as the most instrumental in shaping the face of Estonia's higher education are the role of digital technology in teaching and the role of the higher education institutions in lifelong learning. There are possible different development avenues available to both, which partly depend on the choices of the state. These key factors were taken as the basis for three possible scenarios.

In the national lifelong learning scenario, the government creates advantages for higher education institutions on the continuing training market, the institutions diversify learning opportunities, and receiving an education will become easier for working students. Fee-paying continuing training brings in additional revenue and leads higher education institutions to growth both in terms of the numbers of students and teachers.

In the elite higher education scenario, competition on the lifelong learning landscape is strictly market-based; other providers of education respond more flexibly, gain a market share, and fill the tasks of higher education institutions in several fields. This causes the higher education institutions to contract, and the sector as a whole to shrink.

In the virtual university scenario, learning becomes digitised both in content and in form, and its reach is considerably more global than today. Higher education institutions offer courses to digital platforms but their profitability is restricted by the rules of play of the platform. Public funding for higher education remains at the current level, ensuring only essential studies and studies that are more difficult to digitise.

Social Ecology of Vocational Education

KRISTA LOOGMA
Distinguished Professor of Vocational Education, School of Educational Sciences, Tallinn University

The article analyses the issue of the reputation of vocational education through the prism of social ecology. Vocational education is often viewed in school-based systems, like Estonia, as little more than basic vocational training after the basic school, which leads students down a separate educational path and incorporates a conflict between the general and the vocational education at the level of secondary education. The lower status of vocational education compared to

the general education is reflected in the educational choices after the basic school, whereby traditionally two out of three basic school graduates have chosen an academic path (secondary school – higher education) and one in three have opted for vocational training; furthermore, vocational training is often viewed in popular opinion as something that is meant for the academically less capable students. This attitude is linked to the selection aspect in secondary education and can potentially lead to the polarisation of skills on the labour market.

Signals and feedback from the labour market refer to the different options available to the graduates from basic vocational training and those who have chosen academic education, particularly those with a higher education degree. Differences are clear in salary levels but another crucial aspect is their ability for mobility on the labour market. This last aspect has also become painfully obvious during crises. It is difficult to improve the reputation of vocational education because it involves various institutions and agents with their particular interests and interdependencies, which is why the problem keeps regenerating.

Vocational education reform in Estonia, which has been ongoing since the mid-1990s and has been strongly influenced by the EU vocational education policy, has not fixed the problem. The key factors that keep the social ecology unchanged are founded, firstly, on the Soviet historical and cultural legacy; secondly, on signals from the labour market that describe the key competences of vocational education graduates as inadequate, which in turn impedes flexibility in education and career; and thirdly, on the institutional separation between the general and the vocational education. Although great examples exist in Estonia on integrating vocational and general education, and despite the fact that the current education strategy objectives include the dismantling of institutional barriers, this has not yet become a general practice and may not lead to hoped results without the simultaneous and systematic support of general competences. The latter in turn create the base for the students' ability to construct their own individual learning paths by integrating components from general as well as vocational education. We need to keep in mind that it is extremely difficult to directly influence public opinion which furthermore has historical roots, but it could be influenced by a simultaneous application of the above opinion-shaping factors. Efficient solutions should deal with all the listed factors systematically and simultaneously.

POLITICS

Formulating the Parliamentary Rules of Procedure in Estonia 1990–1992

PEET KASK
Physicist

How did parliamentary procedural rules develop over the two years after the first free post-war elections in Estonia in March 1990? Right behind the restoration of national independence, the second priority of the elected Supreme Council was to make the shift towards democracy. The earlier procedural rules were unsuitable for a democratic parliament and needed replacing. The final outcome of the shift would also depend greatly on how successful the parliament would be in getting its work up and running. Some of the former socialist countries never made it to the free world at all.

During the first weeks, the Supreme Council's work went anything but smoothly. At times it took several hours of valuable working time to adopt the week's agenda alone. Parliamentarians were

highly motivated to overcome the obstacles, and the first steps to eliminate gross flaws in the procedural rules were made in a relatively unanimous atmosphere.

By the second half of 1990, the legislators had collected a sizeable library and a great number of examples of procedural rules in developed democratic countries. A permanent working group was set up for improving procedural rules, and frequent amendments were indeed introduced during the first and the second year.

An important rule that was established relatively quickly concerned the impartial role of the Speaker. The descriptions of the procedure for submitting and debating items on the agenda were soon elaborated in great detail. One of the crucial new rules said that the plenary would not debate an issue before the lead committee had completed thorough preparation work. Even issues like defining the working time or forming committees required a massive reorganisation of the work of the Supreme Council during its first months.

A typical example of a procedural rule that was incompatible with democracy was the unnaturally high quorum requirement. Another example was the requirement for an unreasonably high majority during a vote. When a choice needs to be made between the available alternatives, the simple majority is the only way to get anywhere at all, which is why the rules on voting were amended unanimously. However, the Supreme Council failed to apply the simple majority rule to itself in passing legislative acts because of the numerous opposition.

It was difficult to update the role of the Presidium of the Supreme Council, which was very much of the previous era. The Presidium was a body for discussing political questions and this it remained – out of its depth in organising the work of the Supreme Council. In April 1991, the Supreme Council received a Board in addition to the Presidium, with the sole task of organising the work of the Council. Indeed, the Board did a more efficient job of it than the Presidium had.

The topic of procedural rules is occasionally still raised in the Riigikogu today, three decades later. Formulating the rules in the Supreme Council was thorough and painful but it did ensure the Riigikogu a much smoother sailing in this respect.

STUDIES

Financial Literacy Survey in Estonia

KARIN REIVART
Research Manager, Turu-uuringute AS

The survey results show that the theoretical financial literacy of Estonians did not improve between 2019 and the previous survey in 2015. However, over the nine years that this survey has been conducted, there has been an improvement in comprehending the nature of investment risk and in the interest rates calculation skills.

Less than one in five responders qualified their knowledge of finances as high, including two percent who saw it as very high, over one half as above average, and one fifth as low. Higher than average self-assessment came from younger responders, university graduates, entrepreneurs, high-income earners, and residents of Tallinn.

A major shortcoming is that a large part of the population does not plan their finances well enough (43 % compile a budget and this percentage is very slow to rise). Only 12 percent of the population makes long-term plans and investments. A great number of individuals are still not putting money aside or their savings are inconsequential. However, the share of non-savers is decreasing each year, although slowly.

The most popular form of saving is still putting money on a checking account

(42%), followed by keeping a stash of cash (28%). Savings accounts are used by about one responder in seven, which is slightly higher than in 2015. Investment options are still used by a relatively small percentage, only 13 in total, with four percent of the population owning shares or stocks. Although the key criterion for choosing financial services has been the comparison of services offered by different service providers, there are financial services (credit cards, opening a checking account, or mobile payments) where different options are not considered.

Various loan options, insurance, and savings accounts are clearly the most popular financial services, while investment products continue to attract relatively few clients.

The 18–19 age group names investing into real estate as the most complicated issue, followed by starting a business, while cryptocurrency poses significantly less problems than on average. This age group shows even more indifference towards financial topics than the population on average – only a little more than one in five expressed their interest. Responders in the 50–59 age group considered the second pillar pension scheme as complicated more frequently than others. The oldest age group (60–80 years) referred to saving options and lending/borrowing as complicated more frequently than others, although they listed cryptocurrency as the most complicated topic.

The general financial situation and financial security have improved in Estonia over the past nine years, and most of the population is in a place where they would be able to put money aside. Unfortunately, the results show that although financial topics are not felt to be overly complicated, the general public is not applying their knowledge into practice, which means that we need to continue awareness raising.

We can conclude that the Estonians are relatively well informed and have sufficient basic knowledge to organise their financial affairs in a sensible way. As this knowledge is mostly left untapped when creating financial security for the family, we need to continue the activities that help turn this behaviour around.

Values of Young People are Reflected in their Migration Behaviour[1]

ANDU RÄMMER
Associate Professor of Youth Studies, Narva College of the University of Tartu
REIN MURAKAS
Analyst, Institute of Cultural Research, University of Tartu
TERJE TOOMISTU
Research Fellow in Ethnology, I nstitute of Cultural Research, University of Tartu

Opportunities for people of Estonia to move internationally for work or study purposes have increased significantly over the past few decades, affecting the migration behaviour of the younger generation in particular. It is important to pay attention to east-west migration in the context of the brain drain and youth drain, as mass emigration of educated people has negative economic consequences for the countries of origin. This article focuses on the relationship between the value orientations and migration behaviour of Estonian young people aged 20–35 who have long-term experience of living and/or studying abroad.

Values refer to desirable goals or ways of achieving them, they transcend situations, shape behaviour in different situations and are ordered according to importance. Interrelated values are known as value orientations, which can be categorised as extrinsic, intrinsic and social values. A

1 Peer-reviewed article. The research was funded by the Postimees Foundation under the Young Estonia POST23 and POST214 research grants.

person's values develop through socialisation, based on the experiences acquired at a young age, and remain relatively stable throughout their lives. The values of young people are studied more often, because according to the socialisation hypothesis the dominant values in society change slowly, primarily through generational replacement.

In a survey (N=2022) conducted in the framework of the interdisciplinary study "Young Estonians Abroad" at the Institute of Cultural Research of the University of Tartu, young adults with longer experience of living abroad rated the importance of various work values in their lives. While after the transition to a market economy young Estonians attached the highest importance to the possibility of earning a good salary, and having a secure job and career opportunities were also considered more important than before, the importance of intrinsic work values has increased since then.

The results of our survey research show that the respondents who have returned to Estonia as well as the respondents who have stayed abroad both rated intrinsic and extrinsic values higher than social work values. A closer analysis of extrinsic values reveals their connection with dissatisfaction with the living and working environment in Estonia. Attaching importance to intrinsic values is associated with various development opportunities. The importance of social values is linked to social interaction and sociability.

At the same time, the results also point to a significant divergence in value orientations between those who have returned or intend to return and those who have stayed abroad and do not intend to return. Those who consider extrinsic work values important tend to prefer to stay abroad, while those who appreciate intrinsic and social work values tend to prefer to return.

Depopulation Patterns – Impact of Population Decline on Estonia's Living Environments and Housing Stock

KRISTI GRIŠAKOV
Head of Policy and Analysis, Spatial Planning Department, Ministry of Finance
LAURI LIHTMAA
Expert, Nearly Zero Energy Buildings Research Group, Tallinn University of Technology
DAMIANO CERRONE
Head of Urban Research, Spin Unit OÜ
TARGO KALAMEES
Professor of Building Physics, Tallinn University of Technology
LILL SARV
Researcher, Academy of Architecture and Urban Studies, Tallinn University of Technology

The purpose of the research into depopulation patterns was to determine which settlements and building types in Estonia were experiencing depopulation, based on data from power consumption and the Population Register. The research culminated in a detailed analysis and a map on the empty dwellings and socio-spatial dynamics related to the reasons behind their vacancy, which should be used in planning specific steps, decisions, and support instruments to strategically manage the spatial depopulation of living environments in Estonia.

The power consumption data indicated that over 50,000 dwellings were vacant in Estonia in 2019. Three out of five of these were in apartment buildings. Large apartment buildings (at least 31+ habitable rooms) from 1960–1980 have remained populous although the data indicates a steady trend towards depopulation. The data points to small towns and villages being most at risk from depopulation, but we must also keep up the quality of spaces in central towns and invest in these. Just as carefully as we are

planning the growth, we must also learn and be willing to direct the decline from the spatial standpoint.

Three Years with COVID-19: Which Way Forward?

TOIVO MAIMETS
Professor of Cell Biology, Institute of Molecular and Cell Biology, University of Tartu
MAIT ALTMETS
Senior Doctor, Head of the Infection Control Department, North Estonia Medical Centre
JAANUS HARRO
Head of Chair of Neuropsychopharmacology, Professor of Psychophysiology, Institute of Chemistry, University of Tartu
RUTH KALDA
Professor of Family Medicine, Institute of Family Medicine and Public Health, University of Tartu
PÄRT PETERSON
Professor of Molecular Immunology, Institute of Biomedicine and Translational Medicine, University of Tartu
MARGUS VARJAK
Associate Professor in Medical Virology, Institute of Technology, University of Tartu
TRIIN VIHALEMM
Professor of Communication Studies, Institute of Social Studies, University of Tartu

The authors have studied the analyses published so far in international research literature as well as the Estonian research data to present the key conclusions on the success achieved in responding to the three-year long COVID-19 pandemic as well as the possible lessons to be learned in preparation of potential future pandemics.

Global cooperation in scientific research, which has resulted in relatively efficient vaccines being developed with unprecedented speed, has proven successful during the COVID-19 pandemic. COVID-19 posed a medical challenge only during the first year, until the vaccines were fully developed. During the second and third year of the pandemic, the key focus shifted to social distrust, opposition to masks and vaccines, and the conflict between the interests of the individual and the society. Countries with higher levels of prosociality fared better during the pandemic. Prosocial behaviour must be systematically developed in the Estonian society in anticipation of future crises; however, this cannot be achieved by isolated campaigns but requires consistent daily dialogue with citizens and offering support to vulnerable groups.

The COVID-19 pandemic has strongly affected the state of public health in Estonia. Our life expectancy fell in 2020, and even more so in 2021 (21.5 months). The steady decrease in life expectancy during the second year of the pandemic can be explained by one of the lowest vaccination rates among the European nations (64%), particularly in the older age group (78%). By October 2022, 92% of Estonian adults have developed antibodies for the coronavirus. The high rate of antibodies among the Estonian population permits the assumption that most people would be protected by a certain degree of immunity should new virus strains emerge, which should keep the pressure on the Estonian hospital system within its current capabilities. However, COVID-19 affects the general state of public health in a negative way because severe symptoms (as shown by hospitalisation) cause new afflictions or aggravate the existing chronic illnesses in around 40.3% of the patients. This in turn will increase the need to treat these conditions or offer care services, which is something we need to prepare for. In addition, COVID-19 causes long-term health problems to around 22% of Estonian adults, regardless of the severity of their coronavirus symptoms. Post-COVID-19 health care would benefit from a broader exchange of experiences between GPs, school physicians, and occupational health

doctors. Vaccination of risk groups against SARS-CoV-2 should be included in the national immunisation plan. Sequencing of the coronavirus and research into the changes to the immune response must be continued.

Any plans for public health and communication measures should recognise that there is a noticeable trend towards increased social opposition to pandemic control measures, especially concerning vaccines.

VARIA

Threat Posed by Development of Military Equipment to Civilian Population and Their Options for Sheltering II[2]

PIRET TIPNER
Government Media Adviser, Government Office

The purpose of using expert interviews as the method for this case study was to receive responses to the research question: "What dangers associated with combat activities in Estonia must be met by a shelter suitable for the protection of the civilian population?" The responses outlined both the threats from combat activities as well as the expectations to suitable shelters.

All the interviews were conducted in February 2021, i.e. exactly one year before the start of the war in Ukraine.

The results from the interviews served as a basis for conducting the next stage of the study, which consisted of mapping the public premises that could be used for sheltering in Ida-Viru County.

The interviewees were selected using the so-called snowball sampling method, which allowed us to involve the experts with the most valuable knowledge of the field. In total, twelve experts took part in the study, with expertise on the impact and use of the weapons systems available to Russia's armed forces, professional daily knowledge of explosives, or experience with real life military action.

It is impossible to foresee which weapons would be used in combat or which objects could be hit or how. The biggest risk to the population is posed by random hits by various weapons systems that cause damage to buildings and lead to a high likelihood of civilian casualties. This means that adequate shelters must be of sufficient protection level to provide protection from all the threats of combat activities.

The study showed that a significant capability gap in the way of planning suitable shelters is the lack of data in national as well as local data bases. Considering the fact that the first criterion of a shelter is its underground location, data bases should at least reflect information on objects that are (partially) underground. There is a definite need for further studies on shelters in major Estonian towns and the southeast region which could serve as another entryway for Russian troops.

Based on the findings of the study, the author has made suggestions to institutions responsible for providing sheltering options and organising sheltering, and institutions responsible for defence planning.

2 This is the second part of the article based on the master's thesis defended by Piret Tipner (formerly Avarmaa) in the Estonian Academy of Security Sciences (Avarmaa 2021). The first part of the article was published in the previous issue of *Riigikogu Toimetised* (Avarmaa 2022).

Tallinn University of Technology Is Heading for the Top with EuroTeQ

HENDRIK VOLL
Vice-Rector for Academic Affairs, Professor, Tallinn University of Technology

Tallinn University of Technology uses three key levers to take our teaching to the top European level. Firstly, we joined the technical universities network EuroTeQ, which is used by the participants to develop new cooperation formats as well as common learning formats and services. This means that TalTech is reducing the programmes taught in English and is instead focusing on strong English modules within programmes taught in Estonian, to inject these with international experience and promote mobility with European top universities.

Secondly, Tallinn University of Technology established departmental didactics centres which allow the University to offer networking opportunities to teachers for broader discussions and exchange of experiences, and also a door that is open to anyone experiencing any issues while teaching.

Thirdly, new Study Track Associate Professorship positions are being created. These are specialists at the top of their fields: highly distinguished and well known to students, colleagues, and experts of the field; they are always welcome to speak at events, act as respected spokespersons, and carry out training courses.

What Is the Point of Doctoral Studies When All We Need Are "Regular Workers"?

JAAK VILO
Member of the Academy of Sciences, Professor of Bioinformatics, Head of the Institute of Computer Science, University of Tartu

When we consider the development of higher education and research in Estonia, or the social and economic development in general, we depend directly on well-educated people who develop new solutions and increase the added value produced in the country. The work of universities is centred around creating knowledge in mutable conditions and transmitting this ability to all the graduates who will get involved with developing businesses and fulfilling other roles that serve the nation in the future. The capability of universities, the development efforts in the business and the public sector, and the ability to innovate depend on university teaching staff, researchers, and engineers who have been trained at the first stage of research work, i.e. their doctoral studies. Active teaching staff and researchers must have acquired a doctoral degree to know how to transmit the skill of creating new knowledge. Creators of more complex technical solutions in businesses, staff of research and development units, developers of key solutions in the public sector also need to be highly skilled. University itself should employ only one third, or definitely no more than one half of doctoral graduates. To ensure this, however, doctoral programmes should admit enough students to supply both universities and businesses. It goes without saying that doctoral studies must prepare the graduates to adapting better to their other expected roles in the business sector and the society; relevant reforms have already been initiated.

Sadly, only rare disciplines have

managed to turn out enough doctoral graduates to fill the need. Universities are not able to fully provide even for themselves when it comes to teaching staff in fields like IT where only a small fragment of the needs of the labour market are met for employees with either a bachelor's, a master's, or a doctor's degree. If more than half of graduates with a doctoral degree make the completely rational decision to choose a job in business and if the universities keep the bachelor's, master's, or doctor's studies at the current volumes, they could be lucky to recruit maybe just one graduate into their teaching staff for every fifty students. And yet we should ensure that there is a lecturer or a researcher with a doctoral degree for every 10–12 students. The business sector could easily employ two or three doctoral graduates in developmental positions for every one hundred employees. This massive gap has been partially filled by recruiting teaching and development staff from abroad. Big public developmental centres, defence and other vital services could also use more people with relevant competences, and this is where we cannot rely on foreign recruits.

One clear conclusion to be drawn from the current volumes of doctoral programmes and the needs of the state and businesses as presented in the article is that the volumes of doctoral programmes should be increased decisively in Estonia. We can start with the disciplines and fields where the gap between the volume of doctoral programmes and the expectations of the business and public sector is the widest. In order to increase the volumes of teaching staff, research, development, and innovation, we need to review each discipline individually and give their evolution the desired direction by developing doctoral programmes.

We need Young People Who Have Faith in Science

HANDO SUTTER
Chairman of the Board, AS Eesti Energia; Head of Working Group on Education, Estonian Employers' Confederation; Leader of "Lae end" ("Charge Yourself") programme

Today, an important role in economy is played by such sectors as energy, ICT, construction, industry, etc., that cannot function without an increase in the number of suitably educated young people. Without engineers, it will be impossible to achieve climate mitigation goals. At the same time, employers and higher education institutions are watching with great concern the steady decline in interest in mathematics and physics among the next generation, as the education system fails to make sciences interesting for them.

According to the OSKA Education and Research Report, one in four physics teachers and one in five maths, chemistry, geography and biology teachers in Estonian schools are over 60 years old. When these teachers retire, it will be difficult to find replacements, as only ten percent of teachers in general education are under 30.

Tallinn University closed its master's programme in physics in 2018 because in 2013 and 2014, one student started the studies, and after that, there were none.

Demand for workers is growing in renewable energy, environmental technologies, hydrogen production, waste management, ICT. The transition to a carbon-neutral economic model requires expertise in the implementation and development of green energy solutions. Implementing the principles of circular economy requires technical skills. There is also a growing demand for people who know how to analyse the ecological and social impact of companies.

The OSKA report also shows that the

more successful companies and public authorities are in introducing digital technologies, the better we will be able to improve people's lives and achieve the goals of national green and digital agenda.

I call on businesses, politicians and government agencies to make decisions that support science education in order to motivate young people to find challenges in learning science and building a career.

"Lae end" ("Charge Yourself") programme

- The programme was launched by ABB, LHV, Fermi Energia, Eesti Energia, Nordecon and Metrosert, and offers students an inspiring experience in learning physics, regardless of the teacher's qualifications.
- The programme will bring together the brightest development-minded teachers from Estonian schools, start-ups from the education landscape and representatives of the physics teachers community.
- Based on the recommendations, ten teachers were selected for the programme. They will become role models and their stories will be used to reach other teachers and students.
- Through the programme, teachers and education start-ups will create learning tools that can be used by all schools and teachers.
- More information: https://laeend.ee/

RIIGIKOGU BUILDING – 100

Riigikogu Building – First Among Equals

MAIT VÄLJAS
Head of Library, Estonian Academy of Arts

The importance of the Riigikogu Building (built in 1920–1922) in the history and architecture of Estonia in the 20th century cannot be overestimated. Only the Tallinn Song Festival Stage designed by architect Alar Kotli can be considered its equal. Like the Riigikogu Building, it is not just a brilliant work of architecture, but has a strong symbolic meaning in its historical context. Building a home for its Parliament was a brave undertaking for the newly independent country: there were many more urgent problems in the young state and the resources were also scarce. The Parliament Building was designed by young architects Herbert Johanson (1884–1964) and Eugen Habermann (1884–1944), and it presents a rare synthesis of traditionalism and expressionism that has no counterpart in Europe or anywhere else in the world. Herbert Johanson was also commissioned to draft the furniture designs for all the main rooms, together with working drawings.

The traditionalist features of the building are, above all, the robust overall form, the high hipped roof of red tiles and the small windows with many panes. Expressionism can be seen in the colour scheme of the façade (according to descriptions, originally steel grey, which was restored in 2012, in the meantime it was pale yellow), enlivened by the dark frames of the openings, the inverted pyramidal cornice and, most forcefully, the black granite framing of the hall windows. Expressionism is even more pronounced in the interior, where the decorative zigzag geometry is the connective element of the whole building. Here, two rooms dominate: the lobby, where a mystical

atmosphere is created by the light of uncovered bulbs set into the hollow pyramids of the concrete ceiling, and the main hall, with its vaulting folded ceiling and strikingly bright colour scheme. The architects were assisted by sculptor Jaan Koort in designing the details.

The Riigikogu Building has withstood the test of time well, preserving much of its interior details and furniture, and fortunately survived the Second World War without major damage. The furniture has mainly been rearranged in connection with the changes in the organisation of the Parliament's work. During the restoration works in 1997–1998, it was attempted to restore the original appearance of the Riigikogu building as much as possible and to modernise the building technically. The work was led by Leila Pärtelpoeg, an interior architect who approached the historic interior with respect. When the Estonian Association of Architects was celebrating its 100th anniversary in 2021, they selected the ten best architectural projects of the century. The Riigikogu Building was the first on the list – *primus inter pares*.