education
estonia

# Estonia: Co-constructing the future we need now

AUTHORS:

**Peeter Mehisto,** University College London Institute of Education

**Maie Kitsing,** Estonian Ministry of Education and Research

CO-AUTHORS:

**Pille Kõiv,** Estonian Ministry of Education and Research

**Merike Kull, Leene Korp, Kärt Leppik** and **Mari–Liis Nummert,** University of Tartu

**Katrin Kivisild, Kerli Požogina, Aimi Püüa, Keiu Tamm,** Education and Youth Board of Estonia

CONCEPT AUTHOR:

**Pille Liblik,** Estonian Ministry of Education and Research

REPUBLIC OF ESTONIA
MINISTRY OF EDUCATION
AND RESEARCH

**Tartu 2021**

# Document overview and a focus on equity & improvement

## Introduction

This document offers some examples of innovations in education in Estonia. These innovations have enabled and encouraged stakeholders, in particular teachers, school leaders, academics, social partners and other interested parties in working together and learning from one another in order to improve student learning. They have also supported teachers and school leaders in building their own capacity to lead change in education and take greater responsibility for it. Most importantly, the innovations have had a substantial positive effect on enhancing student agency, learning and well-being.

These innovations have to a great extent become an integral part of the education system. At the same time, they continue to co-evolve and be reinterpreted by those taking part in them. This sample of innovations is introduced through the following chapters:

- Voluntary, yet attractive and powerful low-stakes assessment
- Professional Learning Communities: Co-agency in action
- Schools in Motion: Extending thinking and enhancing well-being through movement
- Entrepreneurship Education: Developing a sense of initiative and entrepreneurial mindsets
- Digital Competence: Empowering teachers and students
- Values: Consciously developing values to enhance learning and well-being
- Interesting Schools: Making learning more engaging through co-agency.

These examples of innovations were chosen as they:

- support the achievement of national strategic goals as reflected in the *Lifelong Learning Strategy* and in its successor strategy *Education 2035*
- have had a substantial impact in the majority, or in some cases a large number of general education schools
- have helped integrate contemporary approaches to teaching and learning
- have been possible due to prior investments into stakeholder cooperation and ongoing education reform efforts.

Ultimately, teachers and school leaders are, or at least should be, the primary agents of educational change. As such, the initiatives described in this publication aim to stimulate both teacher and school leader as well as other stakeholders' initiative, co-operation and co-agency. This includes stimulating collective and personal reflection and action.

# A focus on equity and improvement

Despite being a high performer on PISA (i.e. high levels of student achievement and high degrees of equity), the pervasive feeling among leaders in education in Estonia is that much more can be done to improve the quality of teaching and learning, as well as to enhance the well-being of all students and teachers. This is coupled with a belief in the possibility of a better future, a belief in the value of something that has not yet been achieved. More concretely, stakeholders contribute to the articulation of that better future. Once widely agreed upon, including by government, mechanisms which are aligned with one another and that support the achievement of that better future, have been initiated. They have received government financing and stakeholder support. Positive changes are challenging to implement but they are possible and are indeed taking place.

As a case in point, the principal stakeholders (i.e. academics, teachers, students, parents, school leaders, and other experts in the field) have worked to articulate what constitutes a contemporary approach to teaching and learning. **All of the initiatives in this publication are part of the implementation of that approach**. **All seek to engage, none seek to impose.**

The model situates education and above all individual student learning into a broader context both in the here and now, and in the future (see Figure 1).
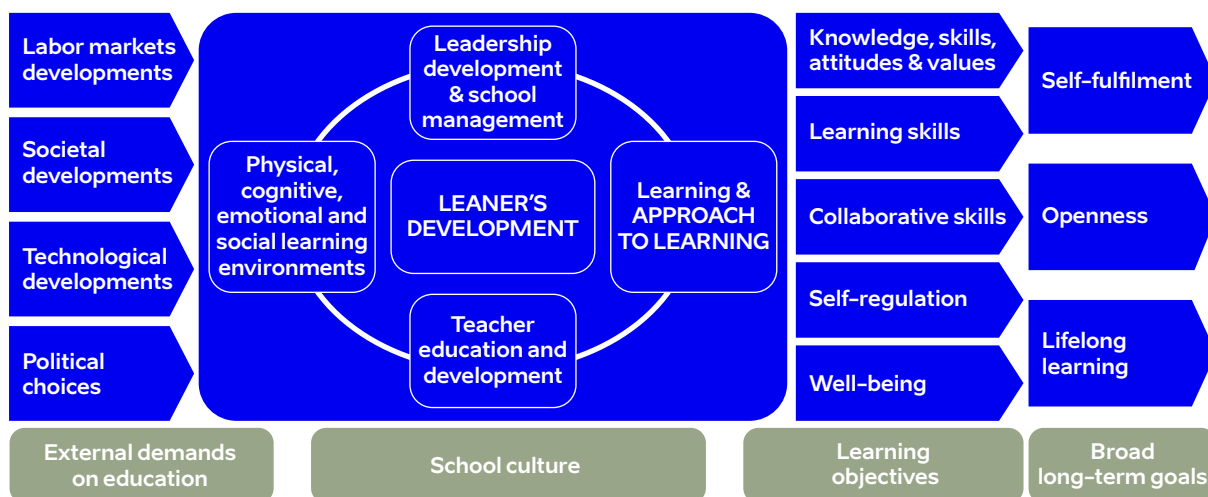


**Figure 1.** A contemporary approach to teaching and learning[1]

The individual learner's development is at the core of the model. The entire school culture needs to support individual student learning. This is only possible if teachers and school leaders continue to learn and grow. This growth is reflected in enhanced cognitive, emotional, physical and social learning environments. These enhancements are partly

---

1  For more information see www.hm.ee/en/learning-approach or contact Pille Liblik (pille.liblik@hm.ee) at the Estonian Ministry of Education and Research.

dependent on a school culture focussed on learning that is improved through the use of contemporary evidence-based high-impact approaches to learning.

Although the school culture is an act of co-construction, the school itself must operate within the broader societal context and be able to help address newly emerging real-world challenges and demands. In the here and now, students need support in achieving core objectives tied to subject knowledge (i.e. knowledge, skills, attitudes and values). Students need to develop a wide range of learning skills, including collaborative and self-regulation skills. Ultimately, education must lead students to a sense of well-being. Those learning objectives are meant to serve the long-term goal of students becoming open and fulfilled lifelong learners who are able to create new value for themselves and others.

**As assessment is often said to drive learning, the next chapter speaks of how Estonia is working to help students, teachers, school leaders and parents harness assessment first and foremost as a tool for learning.** ▶

# Voluntary, yet attractive and powerful low-stakes assessment

## Introduction

**'The primary purpose of assessment is to support learning'**, so states the *Estonian Lifelong Learning Strategy 2020* and its successor strategic plan *Education 2035*. These overall strategic plans, which have been created through broad-based stakeholder engagement, have driven and continue to drive leadership and management of the entire education system. In reference to assessment, the plans take an eco-systemic view in that assessment is not only seen as a tool for students to learn, but also a means for the system and its people to learn. Indeed, the Ministry of Education and Research is using formative assessment vehicles including surveys to nudge stakeholders in education to take more personal and collective responsibility for their own long-term development and school improvement, whilst investing less of its time and attention into external controls.

This chapter first provides a general introduction to innovative low-stakes tests being used in Estonia to support student and teacher learning. Second, learning-to-learn, self-management and communication tests are described. Next, scientific, mathematical and linguistic literacy tests are explored in general, and scientific literacy tests in some detail. Other low-stakes instruments are identified, but not described in detail as the purpose of this document is to provide an introduction to some Estonian innovations in education, as opposed to offering a comprehensive overview. Finally, surveys measuring student and teacher satisfaction and well-being are detailed.

## Innovative low-stakes tests: overview

A core innovation adopted by the Ministry of Education and Research has been the creation nationally of a series of largely voluntary, **mark-free, but feedback-laden** assessment instruments. These competences-based tests complemented with surveys seek to make a substantial contribution to building an assessment-for-learning culture. The data arising from these assessment instruments are intended to underpin an evidence-based approach focussed on enhancing teaching and learning. The evidence becomes the basis for the accompanying teacher and in some cases student feedback reports that focus on what students know and can do, and how to close the gap between that and what they still need to know and learn how to do. The ultimate purpose of the tests is formative for both students and teachers.

In principle, raising teacher awareness of student strengths and development needs, combined with related advice on teaching strategies should lead to enhanced teaching of both individual students and groups, and ultimately to enhanced student learning. Importantly, student feedback reports have the potential of raising student awareness of their strengths and development needs. As the student reports propose concrete strategies for enhancing learning, they should allow students to take greater control of their own learning.

By law, the tests cannot be used to create marks or as a basis for making decisions about a student's future educational path. They are instead intended to promote the use of assessment as a powerful means for supporting student and teacher learning.

## Learning–to–learn, self–management and communication tests: the missing piece

The national curriculum has since 1996 stressed the importance of general competences related to the learning process, in fact the lifelong learning process. Research in Estonia has discerned that self-management and learning skills are intertwined and help students to be more effective learners and improve their sense of well-being.[1,2] Yet, despite seeking to align policy, research results, teacher pre- and in-service education, and learning materials development in reference to general competences, there was a missing piece — the separate assessment of general competences. This is pivotal, since what is measured becomes more visible and more manageable.

As of 2018, there are nationally-produced, mark-free tests to assess the general/key **competences of self–management, learning to learn and communication.** They consist of two types of tests: one measures learning and self-management skills; and the other measures communication and self-management skills. The tests are administered in Grades 2, 3 and 6. A test is also under development for the third stage of basic education (Grades 7—9). Teachers choosing to use any of these tests also have the option of filling out a related survey on their teaching practices.

The tests are freely accessible to teachers and taken by students online. The teacher survey is also online. For teachers, both test and survey use is voluntary. They are aspirational tools that are meant to inspire largely autonomous Estonian teachers to further reflect on and discuss the value of teaching general competences including learning skills. They offer teachers and indirectly students a pressure-free opportunity to learn how to improve teaching and/or learning. Feedback is automatically generated by the testing system in the form of individual reports on each student and classes as a whole.[3] The summary reports identify student development needs and help teachers interpret the results. As the various subheadings of the student tests and the teacher survey are aligned, the reports help shine a light on which teacher-reported practices appear to be effective and which ones require further attention in order to better support individual students or groups of students.

Individual student or class reports are not directly accessible to school principals. In other words the tests are intended to serve as part of the teacher's personal toolkit for improving teaching and learning. Teachers are, however, encouraged to consult the school psychologist for support in interpreting the results, and ask school principals for any support they might need to better help students learn. As class teachers in Estonia usually teach the same class of students beginning in Grade 1 and through to the end of Grade 6, the tests permit teachers to track student progress over several years, and to get evidence on the effectiveness of teaching strategies and student learning strategies. This means teachers are well placed to adjust over several years their teaching to better meet student needs.

In 2019/2020 approximately 29% of Grade 3 and 6 students took the tests. As the uptake is not yet what had been hoped for, more work will be required to integrate further discussion about using the tests into teacher professional development, education conferences, school strategic planning, student-parent-teacher dialogue, and awareness raising campaigns.

## Scientific, mathematical and linguistic literacy tests

The nationally-produced scientific, mathematics and linguistic[2] (reading) tests ('tasemetööd') measure student literacy in these three domains at the end of the first stage (Grades 1—3) and the second stage of schooling (Grades 4—6). Currently, the Grade 4 and 7 scientific and mathematical literacy tests have been fully implemented. A Grade 10, scientific literacy test, as well as linguistic literacy tests for Grades 4 and 7 are slated for widespread implementation in the autumn of 2021.

Instead of testing students at the end of the academic year in Grades 3 and 6, assessment takes place at the start of Grades 4 and 7. The timing increases the likelihood that both teachers and students use the test results and related feedback to enhance their own learning in the here and now, and that teachers use them to improve teaching.

The administering agency the Estonian Education and Youth Board (Harno) tests a representative sample of students each time a test is revised usually every three years. Schools, however, are able annually to sign up for the tests voluntarily, in which case their students must take the tests. Voluntary uptake by schools is high. In 2018, a total of 44% of all Grade 4 students took the scientific literacy test (representative sample was 13%), and 42% of Grade 7 students took the test (representative sample was 13%). In 2019, there was no representative sample, but 62% of Grade 4 and 56% of Grade 7 students took the test.

More specifically, as a case in point, the scientific literacy test (henceforth science test) focusses on subject-related knowledge and competences, as well as general learning competences. In addition, the science test, includes tasks/questions to measure deep

---

2  Estonian and Russian as a first language, and Estonian as a second language.

knowledge related to underlying meanings and principles and subject-related competences. In other words, the tasks/questions mostly measure a student's level of scientific literacy or current capacity to apply subject-specific core concepts/big ideas.

In 2018, the tests included multiple-choice answers and 20—38% of open-ended questions. Students were asked to solve problems through research and decision-making assignments. '[T]he e-test also include[d] an Internet search task. In one task, the student must perform a virtual experiment and analyze the results of it by changing different parameters.'[4] The tests are digital. Multiple-choice questions are all automatically scored. Open-ended questions in the representative sample are assessed by the administering agency Harno, whilst teachers in schools voluntarily administering the tests mark the open-ended questions within the national web-based Examinations Information System following Harno guidelines.

The system automatically generates feedback reports for both students and teachers. Feedback is offered in four categories: knowledge, as well as analytical, planning and interpretation skills. For Grade 4 students, achievement is assessed under each of the four categories as being at a beginner, average or high level. In Grade 7, the three levels indicated are average, high or top. Students reports include a bar chart showing how they performed in each of the categories. Each of the four categories has descriptors that indicate what a student who has achieved a given level can do. These have the potential of being aspirational or at least helping to further indicate what remains to be achieved. For each category the feedback to students explains what they know how to do and suggests a concrete target for improvement (e.g. when planning an experiment, you need to learn how to justify why certain conditions are necessary for conducting the experiment, in which stages and in which order...). Teachers receive feedback on individual students and entire groups/classes. For example, if a student or an entire class has weak analytical skills, teachers may be shown the types of questions or activities that could help students to develop those skills.[5,6]

Student or class reports are not directly accessible to school principals. Teachers may choose to discuss the results in general terms, in particular, when needing guidance from the school leadership team, when discussing professional needs or participating in the development of a school's new strategic and/or work plans. In other words, the tests are intended to serve foremost as part of the student's toolkit to improve learning and the teacher's personal toolkit for improving teaching and learning. They can, however, provide important reference points for discussions about school improvement.

## Additional voluntary, mark–free, feedback–laden tests

In addition, there are mark–free **mathematics and linguistic competences** tests that aim to determine: what level a student has achieved; what are the reasons a student has not achieved an expected level; and to a lesser extent, which cognitive processes (e.g. motivation, thinking, memory and planning) may need further attention. These are considered pivotal in helping teachers and wide range of students to build the general capacity to read and apply mathematical knowledge and skills. As **entrepreneurship** is also considered a core competency, a similar set of tests for measuring this competence is also under development.

There are also primarily voluntary student digital competence tests that target students in Grades 8 and 11. Students taking the **digital competences** tests receive personal feedback reports. Schools receive anonymised feedback reports. With the exception of digital competence tests, which are discussed in the chapter on digital competence, these additional instruments are not further discussed in this document.

## Focus for the future

The primary focus in the next years is on finding ways to help more teachers and students to use assessment as a springboard for learning. At the same time, testing instruments will continue to be enhanced. In particular, more attention will go into enhancing feedback/feedforward reports, and exploring ways of increasing student and teacher uptake of feedback/feedforward. Additional professional development will be offered in how to make best use of the tests and reports. The tests will continue to be voluntary in nature.

## Survey instruments

As a further counterweight to overemphasising school–leaving examinations data, **several survey instruments** have been developed to measure student, teacher, and parent satisfaction with education. These too, have been called into being by the *Lifelong Learning Strategy 2020*, which designated education stakeholder satisfaction levels (i.e. perceived well–being) as important success indicators alongside student achievement. The surveys help make visible those factors associated with satisfaction and well–being that influence student learning. Once these factors are made visible to stakeholders in education along with survey respondents' assessment thereof, strengths can be better built on and areas of concern more systematically addressed. Stakeholders in education should be better placed to co–construct supportive, stimulating and safe learning environments.

As of 2018, all general education schools are offered the option of having their Grade 4, 8 and 11 students take part in the survey on an annual basis. Teachers and parents are surveyed every three years. In 2019, 92% of general education schools participated in the student survey.

More specifically, student satisfaction surveys measure: (1) the overall experience of well-being within the school; (2) satisfaction with specific aspects of the learning environment; and (3) satisfaction with external factors which respondents may associate with school satisfaction. The assessment of well-being was based on self-determination theory, according to which three innate psychological needs — autonomy, self-efficacy/competence and relatedness — must be satisfied in order to yield enhanced intrinsic motivation and well-being.

Student surveys include visible and latent variables. A visible variable such as bullying is measured by having students report on the frequency of, among other points, threats experienced on the Internet, having possessions stolen or destroyed, being picked on or taunted, and being hit or pushed. Visible variables are also used to measure the latent variables. For example, to measure the latent variables of autonomy, self-efficacy and connectedness, some corresponding visible variables are: 'I am confident that I am able to complete my studies.' and 'My classmates help me when I need it.'[8] Other latent variables can include meaningfulness of learning, home environment, teacher collaboration, feedback that supports development, self-management of learning, cynicism and fatigue.

Teacher surveys focus on both the social aspects (e.g. bullying, teacher and management team activities, relationships) and physical aspects (e.g. catering, premises, support services, teaching materials).[7]

Each school gets a detailed feedback report on how its school community has assessed the factors included in the survey. Anonymised results are presented for each survey question, and aggregated data is also presented to draw broad-based conclusions, for example, about the latent variables. Each school's results are juxtaposed with national averages. In other words, schools annually get an overview of how satisfied and pleased students are with their learning environment and processes, and how those results compare with national averages. Every three years schools get a report about teacher satisfaction with their work and student learning processes, and about parental satisfaction with their children's learning processes.

Importantly, the surveys themselves are instruments of connectedness offering all respondents a potentially powerful vehicle for making their voice heard in the school improvement process. The reports help students, parents, teachers and school leaders to become more attuned to the perceived positive and negative aspects of their school's learning environment.[9] They also help place autonomy, self-efficacy and connectedness at the centre of discussions related to satisfaction, well-being and learning. This is powerful data that is difficult to ignore, and tends to spur substantial discussion in schools. The public is given

access to each school's general satisfaction rating, as well as attendance and bullying related figures. They also have access to an anonymised national overview of all results. Key stakeholders seeing, or perceiving based on the more detailed national overview, apparent problems in a school are likely to engage with schools in seeking solutions. Once issues are visible, they are more likely to be dealt with. Also, once strengths have been identified, they are more likely to be effectively employed for school improvement.

> **FOR FURTHER INFORMATION** contact Pille Kõiv (pille.koiv@hm.ee) at the Estonian Ministry of Education and Research and/or Aimi Püüa (aimi.puua@harno) at the National Education and Youth Board of Estonia.

---

**The next chapter, discusses how the Estonia is supporting the development of professional learning communities in schools and their communities. This builds on the big idea that it is better to engage than impose.** ▶

# Professional Learning Communities: Co-agency in action

## Introduction

It is Estonia's view that teachers and school leaders are the primary agents of educational change be that at the classroom, school, regional or national level. As such, external state controls take a backseat to initiatives that support educators in developing their own professional learning organisations. Several nationally financed long-term actions have been instituted in order to support the development of professional learning communities that are centred around each school where stakeholders are focussed on ultimately enhancing the learning and well-being of all students. At the same time, the Ministry of Education and Research has supported existing national and regional associations, and fostered the creation of new networks which are also professional learning communities.

Actions which either directly or indirectly support the development of professional learning communities are described below.

## School-level actions

**The school leader competency model and 360° feedback mechanism.** The model was developed by key stakeholders in education and is intended to first and foremost serve as a reference point for school leader self-evaluation and self-development. It is complemented by a 360° feedback mechanism that allows school leaders to obtain anonymous feedback on their leadership from groups of teachers, students, parents, colleagues, direct reports and other partners. School leaders also receive suggestions. In addition, the model itself is used in hiring, coaching, mentoring, training, recognising and rewarding, and evaluating school leaders.

The highly competent leader is seen as one who: supports the development of each student; takes a result-based approach; leads teams; leads innovation; and communicates success stories (see Figure 2 clicking on each section to increase text size). Each of those actions have success indicators. In short, highly competent leaders of educational institutions are expected to lead the development of professional learning communities.

**Figure 2.** The world's best leader of an educational institution

**Leadership development and support.** A complex programme of actions has been instituted to support the professional development of both novice and experienced school leaders. This includes courses, improved networking opportunities, coaching, mentoring, access to literature on global best practices in educational leadership, as well as opportunities to learn together with school owners.

**Coaching**. School leaders can choose from a list of qualified coaches in order to obtain individual coaching to help them lead change in their schools.

**Mentoring.** Experienced school leaders have been trained to mentor new school leaders.

**Future school leaders.** There is an ongoing programme that helps teachers and other capable people to learn how to lead/manage a school. The initiative also works in cooperation with school owners.

**Innovation teams.** In order to create sufficient synergy for change, professional development is offered to school teams (e.g. teachers, school leaders, specialists) in leading innovation and school improvement.

**Professional learning community leaders.** This initiative focuses on providing professional development to teachers in leading professional learning communities.

## Networking actions

**Subject–field associations.** Teachers have formed both regional and national subject associations for most subjects taught in the curriculum. There is a Ministry-financed programme to support existing subject–field associations in defining their role and responsibilities in relation to the professional development of teachers and school leaders. In particular, the initiative has focussed on building teacher and school leader capacity to effectively use existing educator networks to enhance student learning.

**Financial support**. All education related associations or organisations are able to apply for financing for their own proposed initiatives to enhance learning. These have included seminars, training sessions, engagement of foreign lecturers, and diverse networking activities focussed on sharing best practices.

FOR FURTHER INFORMATION contact Keiu Tamm (Keiu.Tamm@harno.ee) at the Education and Youth Board of Estonia.

**As learning is not only a cognitive activity, but also an emotional and physical activity the next chapter discusses how movement can extend thinking and enhance well–being.** ▶

# Schools in Motion: Extending thinking and enhancing well-being through movement

## Introduction

School by school, step by step, activity by activity, the Schools in Motion (*Liikuma Kutsuv Kool*) programme is working to further integrate physical activities throughout the school day. Shocked into action, the Schools in Motion programme was launched in 2016 by the University of Tartu's Move Lab (*Liikumislabor*) after its own research showed that 76% of Estonian seven-to-thirteen-year-olds were not achieving the recommended minimum 60 minutes of moderate-to-vigorous physical activity (i.e. equivalent in intensity to brisk walking or bicycling) per school day.[10]

## International evidence–base

Moderate-to-vigorous physical activity has been shown by research to:

- enhance learning and educational achievement[11]
- enhance selective attention, memory, and on-task behaviour[11]
- create a positive and supportive environment for learning life skills[11]
- lead to improved physical health[12,13]
- contribute to the building of self–esteem[14]
- protect young people from mental illness[14, 15, 16]
- reduce the symptoms of ADHD in children[17]
- have a positive effect on students' social development[14]
- increase intrinsic motivation to learn, as well as perceived competence and effort.[18]

## Estonian policy context

The Schools in Motion programme aligns with the national *Estonia 2035* strategy which names smart and active people who care for their health as one of its top five goals. It also aligns with the *Education 2035* strategy which has a primary goal to promote well-being (i.e. building learner self-efficacy, self-esteem, life skills, social competences and mental

and physical health). Consequently, the Schools in Motion programme is well placed to enjoy government support.[19]

## Programme description

The programme supports schools in integrating physical activities into every school day, including active travel to and from school, as well as movement during and in between lessons, both in and out of doors. It helps movement gain a greater foothold in school culture.
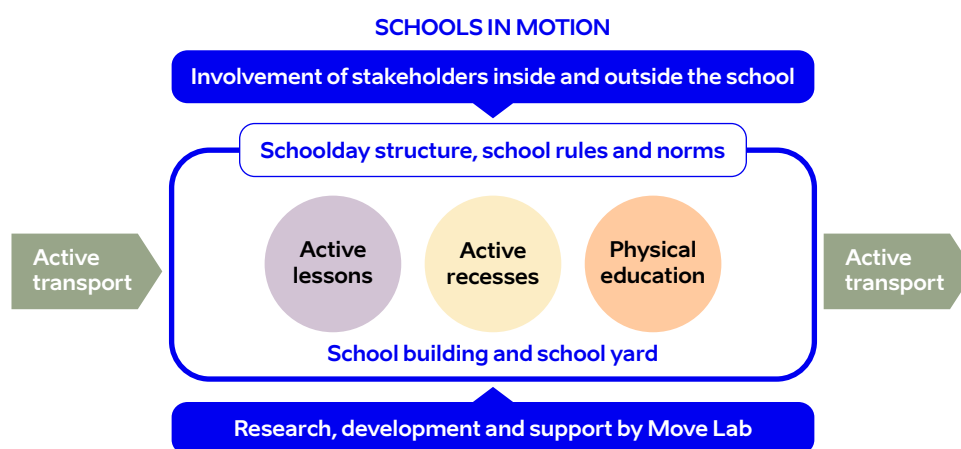


**Figure 3.** Schools in Motion programme framework

The Schools in Motion programme seeks to ensure that students:

- are able to move more and sit less during lessons and recess
- take greater initiative in organising their own recess activities
- gain greater joy from learning
- build and reinforce positive relationships through play and physical activities,

and that in school:

- the buildings and surroundings encourage more movement
- timetables allow time for physical activity and a richer variety of activities
- understanding of movement goes beyond just sport (see Figure 3).

The programme also supports the well-being of teachers, for example, through walk-and-talk meetings, joint workouts, and the recognition of teachers for their contribution to building a schools-in-motion culture.

Schools are invited to develop their vision of enhancing student and staff well-being by

becoming more physically active both individually and collectively. As a first step, participating schools are asked to undertake a self-evaluation that focusses on physical movement and this in relation to the entire school community. The self-evaluation references points in relation to movement are school cooperation and networking, school indoor and outdoor spaces, recess, academic lessons, physical education, as well as travel to and from school.

As a consequence, many schools have changed timetables and increased the length of recesses. Additionally, dancing, playing games, going outdoors, and exercising during recess are an official part of school timetables. Students are more engaged in planning and leading activities for fellow students and themselves. Hundreds of ideas for integrating physical activities throughout the school day have been uploaded onto the programme website.

The programme supports schools in thinking through how reconceptualised spaces, both indoors and outdoors, can foster increased physical activities in diverse settings. It provides seminars and workshops for school teams, teachers, school governors and students. Networking activities include school visits and exchange-of-experience seminars. The programme website offers schools a general framework for integrating physical movement into school life, practical ideas including the schools' own best practices, and research evidence.

## Programme results

In 2016, there were 10 schools participating in the programme. In 2021, there are 148 participating schools (28% of all general education schools) with more than 63 000 students.

Ongoing action research is used to monitor and reflect on programme implementation and enhancement as required.[20] Based on self-evaluations, schools report that student access to at least 20 minutes of active recess has increased from 37% in 2018 to 67% in 2020. In a similar positive vein, in 2018 only 4% of participating schools agreed that students themselves actively organise activities during recess, whilst in 2020 that figure stood at 37%. In 2016, no pilot schools had outdoor recesses. By 2018, 54% of all participating schools offered outdoor recess, whilst in 2020, outdoor recesses were held in 74% of those schools.

Finally, in 2019, the Schools in Motion received the #BeActive Education Award 2019 from the European Commission.

**FOR FURTHER INFORMATION** see www.liikumakutsuvkool.ee and/or contact Merike Kull (merike.kull@ut.ee) or Leene Korp (leene.korp@ut.ee), University of Tartu, Move Lab.

---

**The next chapter reviews entrepreneurship education and how this has taken on the broader aim of helping students develop a sense of initiative and an entrepreneurial mindset. These are central to encouraging student agency.** ▶

# Entrepreneurship Education: Developing a sense of initiative and entrepreneurial mindsets

## Introduction

The **Entrepreneurship and Career Education Programme** *Edu ja Tegu* **[Success and Action]** was launched by the Ministry of Education and Research in 2016. It aims to give all students an opportunity to experience entrepreneurship and build entrepreneurial competences applicable throughout life in diverse cultural, economic, social and other contexts. This includes having students take a more active role in designing their own career path.

## Foundations

The entrepreneurship programme builds on strong foundations. Several Estonian teachers began in 1992 to learn about and eventually help found what would become the Junior Achievement Estonia Foundation that engages thousands of students a year in entrepreneurship education. The programme also builds on the inclusion of entrepreneurship as a core theme in the national curriculum in 1996 and the addition of entrepreneurial competence as a key curricular competence as of 2011. The programme also draws strength from the European Parliament's and Council's 2006 recommendation to support the development of a sense of initiative and entrepreneurship amongst other key lifelong learning competences.

## Programme foci

The Success and Action Programme seeks to broaden the scope of meaning that was commonly applied to the term entrepreneurship. The term had widely been viewed primarily through an economic or business lens. The current aim is to take a much broader view that focusses on helping young people to **develop a sense of initiative and an entrepreneurial mindset** that can be applied in all aspects of their life. The hope is that entrepreneurial competence (i.e. knowledge, skills, attitudes and values) built through education can be applied in making decisions when participating in the labour market, or in cultural,

economic, social or other contexts throughout one's life.[21]The Success and Action pro-gramme has five key foci:

- the development of the entrepreneurial competence model and pedagogical materials
- the design and implementation of entrepreneurship courses for students
- support for the launch of business start-ups
- capturing success stories and rewarding best practices
- teacher, business mentor and entrepreneur training
- programme monitoring and research.

## Results

**An entrepreneurial competence model**. In this model (see Figure 4), entrepreneurial competence consists of a holistic set of knowledge, skills and attitudes needed to create new value when implementing ideas, and in order to develop the learner's own capacity to be entrepreneurial and to cope at work and in daily life in general. The model includes four categories: self-management; resolving social situations; value-creation thinking and the finding of solutions; and implementation of (business) ideas. These categories are further broken down into a total of 14 more specific competences.

The model is important for several reasons. It is an agreement between stakeholders from diverse sectors of education and business including from the fields of art, music and the world of work. This means the model takes a broad view of entrepreneurship. In addition, the model is a key reference point for the development of initiatives that support its imple-mentation. Finally, in working with students it can be used to make visible what students know or do not yet know, thereby making it simpler to set and deliver on more realistic and engaging learning targets.
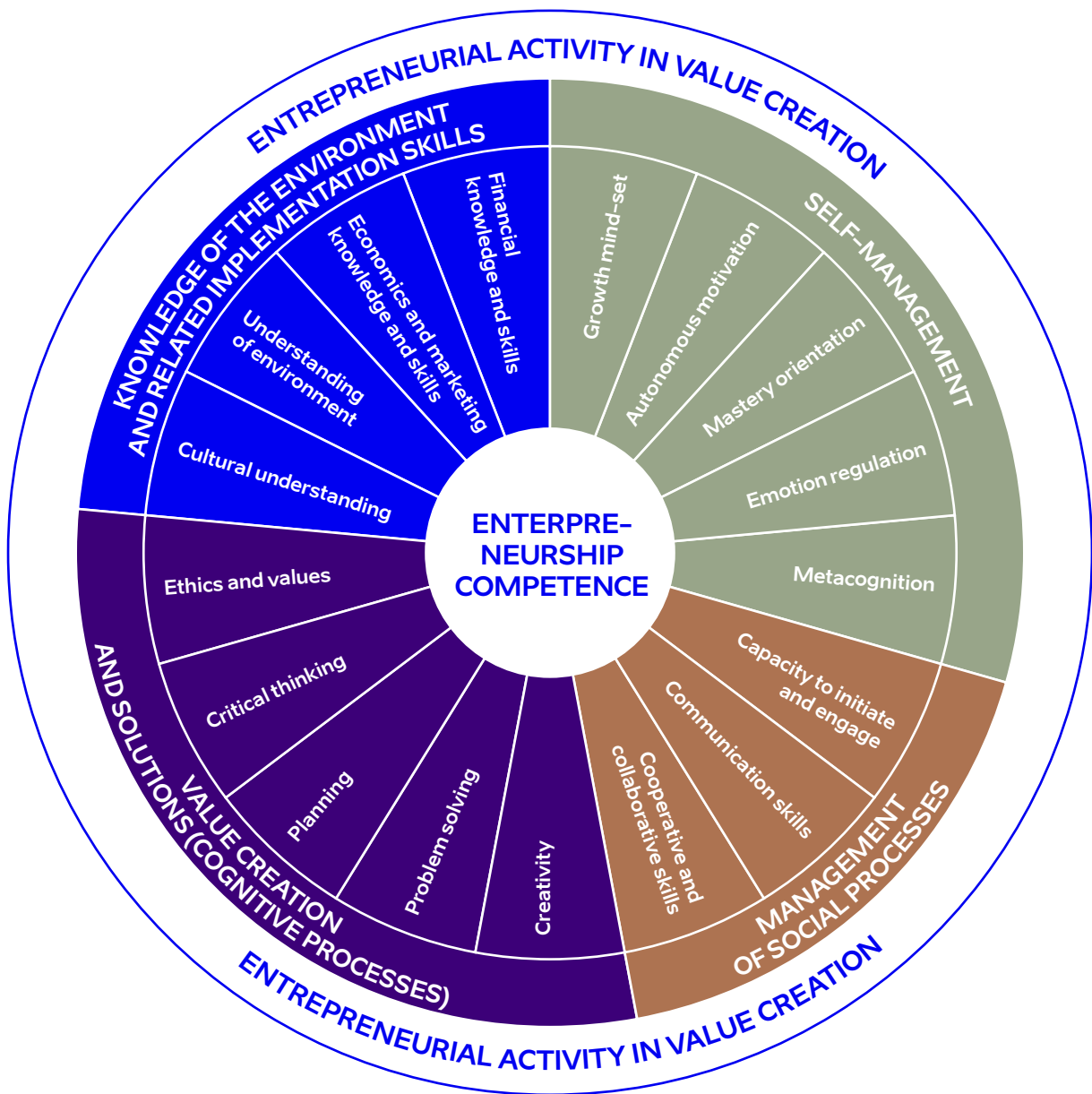
**Figure 4.** Entrepreneurial competence model

**Widespread implementation**. As of 2021, entrepreneurship education is implemented in 381 general education schools, which is 71% of all general education schools in Estonia.

**Self-evaluation instruments and guidelines.** The self-evaluation instruments help students to reflect on their entrepreneurial competence and to assess their own current progress in achieving it. They help students to see their strengths and development needs, and can serve as a basis for setting their own learning goals. The guidelines suggest ways teachers can further support students using these instruments and in how the results can be used to better plan teaching and learning.

**School, local government and entrepreneur cooperation.** Entrepreneurs are involved in developing curricula. The programme has supported 46 projects where schools and enterprises work together to deliver entrepreneurship education, in particular through practical application activities.

**Introduction to and master classes courses in entrepreneurship.** The short in-service courses (maximum of 11 days) are for teachers who wish to teach entrepreneurship. The master classes, which always take place in enterprises over a six-month period (6 ECTS[3] credits), cover, among other points, entrepreneurial competences, teamwork, project-based learning, as well as self-evaluation and -reflection.

**Economics and entrepreneurship teacher education.** This is now one of the compulsory modules in initial vocational teacher education.

**Entrepreneurial schools label.** This is an education quality label awarded to kindergartens and schools that support students in building autonomy and entrepreneurial attitudes so as to improve their ability to make decisions and to take action. Entrepreneurial schools are expected to engage students fully in all stages and processes of entrepreneurial learning so motivation can arise from their own engagement and initiative-taking. Currently 130 schools have obtained the label. This constitutes approximately 25% of all general education schools.

**Success stories.** An electronic and hard copy book summarises how Estonian students have created their own enterprises in cooperation with existing businesses.

> **FOR FURTHER INFORMATION** see www.ettevotlusope.edu.ee/eng-rus/ or contact Katrin Kivisild (Katrin.Kivisild@harno.ee) at the Education and Youth Board of Estonia.

---

**The next chapter focuses on how Estonia is working to help teachers and students build digital competence. Digital competence is now fundamental to the teaching and learning processes.** ▶

---

3  European Credit Transfer and Accumulation System

# Digital Competence: Empowering teachers and students

## Introduction

To engage fully and effectively in the social, economic, cultural, political or administrative spheres, the citizens of Estonia need to be digitally competent.

In addition to that pragmatic necessity, there is an education policy imperative. That policy imperative is reflected in various versions of the national curricula beginning in 2014, in the strategic plan for education entitled the *Lifelong Learning Strategy 2020*, and as of 2019 in the teacher professional standards. The current *Education 2035* strategy foresees development of digital competence, content and platforms that help improve the accessibility, diversity and efficiency of education. The strategy will soon be accompanied by new detailed action plans and financing in service of those strategic goals.

To date, teacher and student digital competence frameworks have been created and are in widespread use. These are complemented with self-assessment instruments, other tools, and several professional development initiatives. These are described below, as is the value creation process.

## Value creation process

The value creation process is both systematic (i.e. using agreed upon reference points and processes) and iterative in nature (i.e. following a cycle of assessment, reflection and enhancement).

The monitoring of and support for teachers and students in Estonia in developing their digital competence align with the European Commission's DigCompEdu and DigComp frameworks respectively. They also align with the national curricula and related strategic plans. Digital competence development work is coordinated by the Digital Competence task force and, the National Education and Youth Board of Estonia (Harno). It also involves experts from Tallinn University, University of Tartu and various schools. This group meets monthly to adapt, validate and pilot digital competence frameworks and respective assessment instruments for various educational contexts (i.e. pre-primary, primary, secondary, vocational, higher education). Twice a year, the group reports to the Digital Competence

Council (body representing key stakeholders). Harno then uses these digital competence frameworks for designing and providing relevant continuing professional development for teachers and defines expected learning outcomes for students for all key stages of learning. Harno is also responsible for designing, delivering and improving diagnostic online assessment instruments.

## Digital competence frameworks

Defined competences serve as targets for both teachers and students. As such, the teacher and student digital competence frameworks offer integrated and common reference points for analysing and supporting the development of digital competence. These describe the competences needed to solve problems faced during the teaching and/or learning processes (*de facto* in working life as well) using digital technologies.

The Estonian **teachers' digital competence framework** is adapted from DigCompEdu 2019 and it has six dimensions: 1) professional development and engagement (i.e. communication, co-operation, reflection and professional development using digital technologies); 2) digital resources (i.e. choosing, creating and sharing digital learning materials); 3) teaching and learning (i.e. managing and using digital technologies in teaching and learning); 4) assessment (i.e. using digital technologies to enhance learning); 5) empowering learners (i.e. using digital technologies to actively engage learners, to support differentiation, individualisation, and the development of learners' general competences/skills); and, 6) facilitating learners' digital competence (i.e. supporting students in developing the competences described in the next paragraph).

The **students' digital competence framework** is adapted from DigComp 2.1 and it has five dimensions: 1) information and data literacy (e.g. articulating needs, judging relevance of sources, organising digital data); 2) communication and collaboration; 3) digital content creation (e.g. creating, improving and editing, understanding copyright, giving understandable instructions to computer systems); 4) safety; and 5) problem solving. There is an additional adapted version of the framework for students with special needs.

## Additional resources

The digital competence frameworks are complemented with diverse tools that are intended to support their implementation. These are described below.

There is a publicly accessible set of student **assessment criteria** for each key stage of education, linked to the five dimensions of the students' digital competence framework. These have been broken down by each of the four key stages of general education (i.e. end of

Grades 3, 6, 9 and 12). Teachers can use these to assess student progress in building digital competence. In turn, they can use the resulting data to plan for how to further enhance student learning. Students can also use the criteria to set their own learning targets.

An online digital competence self-assessment **questionnaire** is available to teachers. Teachers can use it to analyse their own digital competence, and to draw conclusions about their strengths and development needs.

There is a digital **glossary** associated with both the student and teacher competence frameworks, as well as with digital assessment criteria and digital learning in general. These provide teachers, and by extension students, with the common language needed to discuss digital teaching and learning.

**A digital competence test** was piloted in 2018 using automatically graded tasks in the national web-based Examination Information System (EIS). The tests are mark-free. In 2019, a representative sample of 7.4% of Grade 9 and 15.8% of Grade 12 students was tested. Other students could through their school choose to take the test voluntarily. In 2019, 24.3% of all Grade 9 and 19.8% of all Grade 12 students took the test. In 2021, a representative sample of 14.4% of Grade 8 and 21.1% of Grade 11 students was tested. Again, students could through their school choose to take the test voluntarily. In 2021, a total of 49.7% of Grade 8 and 28.4% of Grade 11 students took the test. The tests' popularity has risen in particular in Grade 8. The testing instruments are now under further development. In 2022, a representative sample of Grade 8 and 11 students will be tested. At the same time, any Grade 8 or 11 student will through their school be free to take the test, if they so wish. Thereafter, the tests will be honed and should be available annually.

Students taking the digital competence test receive a **feedback report** on how they performed nationally in relation to their peers (i.e. better, similar, below) in each of the five dimensions of the digital competence framework. No advice is provided *per se*, but as each of the five categories has indicators, and feedback is provided on each indicator, students get a strong indication of what they have mastered and what they need to improve. If a statistically significant number of students voluntarily take the test, teachers receive anonymised feedback reports on their class(es), and schools on whole-school performance.

**Digital learning stories** which describe best practices in integrating learning and the development of digital competences in various school subjects are being collected. These learning stories will be published with open access.

## Professional development programmes on digital competence for teachers

Some examples of professional development opportunities that support the development of teacher and student digital competence follow.

**Digital Key.** This 39-hour programme focuses on supporting subject teachers so they can gain a deeper understanding of how digital technologies can be used to teach and promote student learning in their subjects, and ultimately student digital competence. The training programme is based on the students' digital competence framework.

**Digital Accelerator.** This six-month programme offers professional development to school teams. Participants are divided (based on their level of usage of digital technology) between basic training (32 hours) and advanced training (30 hours). The basic training is in the fundamentals of integrating digital technologies into the learning process and the advanced training focuses on teachers who are more experienced in the field of educational technology. In addition, management is schooled in digital leadership (39 hours) and the whole team receives 48 hours of coaching. Schools have their digital development externally assessed one year after the start of the training programme.

**Digital ABC.** This 26-hour train-the-trainer initiative focusses on helping participants build the knowledge and skills needed to support the professional development of their colleagues. These colleagues have yet to have made widespread use of digital technologies for teaching and learning. In 2021, the focus has been on remote learning.

**Short-term professional development sessions.** Numerous short courses are offered every year on supporting student digital learning. These have included how to make best use of commonly used digital tools/platforms such as Moodle, Google Classroom and MS Teams.

**Participation rates.** Between 18—21% of teachers in general education in Estonia take part in ICT-related professional development courses per annum by Harno.

FOR FURTHER INFORMATION contact Kerli Požogina (Kerli.Pozogina@harno.ee) at the Education and Youth Board of Estonia. See also www.digipadevus.ee.

**As knowledge and skills always also reflect values, the next chapter discusses how school stakeholders can work together to create values-based learning environments that support the holistic development and well-being of each student. ▶**

# Values: Consciously developing values to enhance learning and well-being

## Introduction

A national programme promoting a values-centred approach to education was launched in 2009. Programme activities engage teachers, school leadership, other school personnel and parents in becoming **knowledgeable actors, who co-create with students, rich values-based learning environments focused on the holistic development and well-being of each student**. Participation in the programme is voluntary.

The programme is led by the University of Tartu's Centre for Ethics (*hereinafter Centre for Ethics*). It advises preschools and schools (henceforth schools) and also offers them a series of activities and concrete tools that can be used to co-create and continue to develop values-based learning environments. Key activities and tools are discussed below.

Values drive all aspects of school culture whether that be consciously or unconsciously. As an important first step, the programme helps stakeholders in education to make visible the values driving their school culture. Based on analysis and discussions, the programme guides schools in articulating and agreeing on values. This is so that all stakeholders can build a common understanding of how values influence communication, relationships, the learning process, teaching methods, assessment and evaluation. With heightened awareness and understanding, stakeholders are better placed to co-create supportive, engaging and enriching learning environments that also enable student and teacher well-being.

## Key reference points

Schools in this programme tend to revisit their values and agree with their stakeholders on their core values that they can use as key reference points for reflection, planning, and assessment of their efforts to build their learning environments. Schools can also take inspiration from the national curricula that stress general human and social values. The general human values are honesty, considerateness, reverence for life, justice, human dignity, respect for oneself and others. The general social values are freedom, democracy, respect for mother tongue and culture, patriotism, cultural diversity, tolerance, sustainability of the environment, adherence to law, solidarity, responsibility and gender equality.

The school-based dialogue can now also take inspiration from the latest national strategic plan for *Education 2035*, which places values at the centre of the strategy and foresees the further development of values-based organisational culture in schools.

## Activities and tools for systematic values-development

**Good school model**. The model provides a whole-school approach to values-development in four areas of school life: school environment, leadership, curriculum and learning, cooperation and relationships. Each area describes ideal elements that schools can use to examine their strengths and weaknesses, gather data and set goals for improvement.

**Self-evaluation and recognition programme**. Using the model, schools undertake a self-analysis of how their agreed values drive or do not drive learning and school life. Schools are guided in ensuring the analysis is evidence-based and in recognising the good work already being done. The process encourages all key stakeholders — students, teachers, the leadership team, parents and local government officials — to engage in the process. Guidance includes professional development, suggested materials and activities, running best practice days, diverse publications on best practices (see below), and mentoring (critical friends).

**Critical friends**: Schools can request the support of a critical friend. Critical friends from the Centre for Ethics assist above all school leadership teams in developing a values-based approach to school renewal. Critical friends undertake site visits in order to analyse organisational strengths and weaknesses and current values-development activities. They also support leadership teams in creating strategic plans for values-based education. They offer feedback/feedforward based on, among other activities, whole-day observations in and out of classrooms and focus group interviews. They also undertake document analysis (e.g. school curriculum, mission and values, assessment policy and internal rules).

**Teacher professional development.** Teachers are primary agents of values development in schools. They are in a direct and ongoing relationship with their students and can support students in understanding their own values, attitudes and how value judgements are made. The professional development programme offers teachers practical knowledge on how to bring values to the heart of teaching and learning. It introduces them to the general discourse of values-based education, as well as to methods and practical tools for in-school values-development.

**Values games for teachers and students.** Personal reflection on values and the development of moral reasoning are central to values-based education. Two games have been created with this in mind. The first is *The Values Game* for teachers. This supports teachers in clarifying their own values, and achieving a deeper understanding of their role and responsibility in relation to values-based education. It encourages dialogue about the role of values in diverse contexts, including how to deal with conflicting values. The second

game intended for students is called *Discovering Values*. This guides students in discussing values in class. By having students solve values-based dilemmas that they might face in their personal or school life, students are likely to build empathy for others. They also develop increased self-awareness as well as moral reasoning and discussion skills.

**Publications.** The Centre for Ethics publishes guides on developing values-based education, meta-analyses of research and success stories/best practices from Estonia and abroad. The publications also target parents (e.g. *Teaching your Children Values*) and the wider public (e.g. *In Which Estonia do I Want to Live?*).

**Impact and centrality of the values-based approach.** As of 2021, the Centre for Ethics has worked with schools in 74 out of the country's 79 municipalities. To date, 89 schools and 105 preschools across Estonia have undertaken self-evaluations and been awarded the good preschool/school quality badge. The Centre has also contributed to the development of the national curriculum, *the Estonian Lifelong Learning 2020* and more recently, to the *Strategy Smart and Active Estonia 2035*, which has distilled part of the national dialogue leading to the development and adoption of the *Estonia 2035* national strategy for the nation. That strategic plan and its national targets are all values-based.

**FOR FURTHER INFORMATION** see www.eetika.ee/en or contact Mari-Liis Nummert (mari-liis.nummert@ut.ee) at the University of Tartu's Centre for Ethics.

---

**Finally, an initiative aimed at engaging school internal and external stakeholders in helping to enrich learning environments is discussed.** ▶

# Interesting Schools: Making learning more engaging through co-agency

## Introduction

The Interesting Schools (*Huvitav Kool*) initiative aims to contribute to making learning more stimulating and inspiring for both students and teachers in general education. Enhancing education stakeholder well-being is another of its aims. This is done through fostering co-agency, by involving students, parents, teachers, as well as other educational stakeholders and beneficiaries in working together to create more enriching and motivating learning environments. As an added benefit, schools are likely to build a more open school culture, as well as to take greater responsibility for exploring and responding to stakeholder expectations.

Although initiated by the Ministry of Education and Research in 2013, the initiative is guided by a voluntary advisory board consisting both of private and public sector representatives from among others the worlds of business, health, education and media. A working group oversees the implementation of related proposals. It also informs the public of progress, as well as encouraging public debate on how to move forward.

## Overview

*Interesting Schools* encourages stakeholders to talk out loud about their hopes for the future of education, as well as current problems, and discuss these at the school, municipal and national level. *Interesting School[s]* runs think tanks and public consultations that encourage and facilitate stakeholder dialogue and actions to help shape education in the present-day and the future. Stakeholders include students, teachers, parents, entrepreneurs, NGOs, universities, non-formal education providers, museums and government agencies. Schools are assisted in finding partners, e.g. businesses, NGOs and institutions of higher education.

Likewise, *Interesting Schools* helps support networking opportunities among educators including job shadowing for teachers and school principals. The initiative also helps teachers develop their skills in training other teachers. For example, schools and teachers have shared their best practices in formative assessment, digital learning, promoting

critical thinking, the creation of supportive multicultural learning environments, how to foster student well-being, and how to support talented and gifted youth. Further, *Interesting Schools* has assisted schools in launching numerous other interesting initiatives. These include programmes for the building of social and emotional skills, as well as helping educational innovations and contemporary management practices to take root in schools. In addition to facilitating the sharing of Estonian best practices, the initiative has brought in experts from abroad to share international best practices.
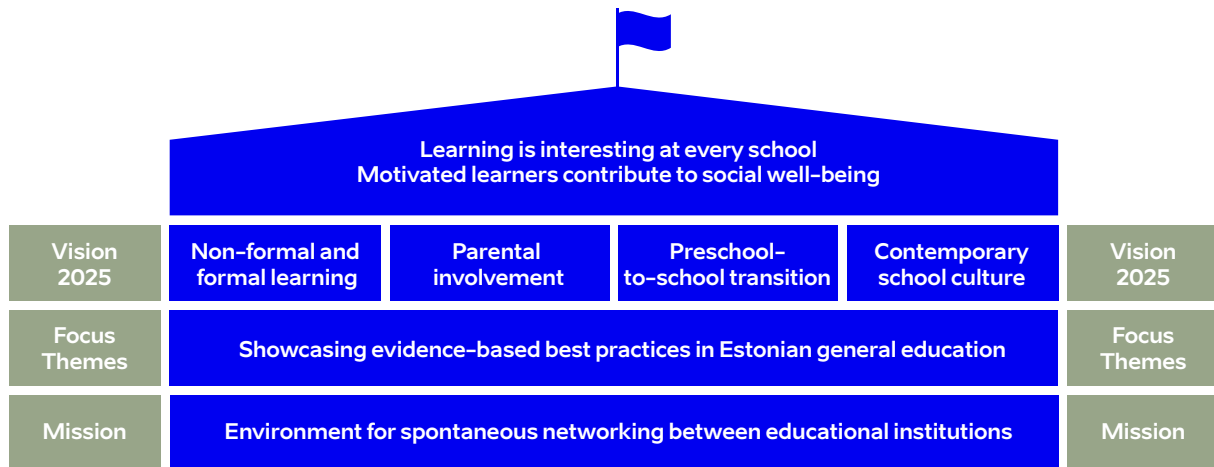
There have also been diverse actions facilitating cooperation with local communities. Schools have been offered concrete ways they can better take into account community expectations in education, and how they can better integrate local traditions and unique features into the school curriculum. In addition, this initiative is encouraging schools, parents and society at large to cooperate in order to identify, recognise and reward those schools where learning is particularly intriguing, interesting and/or motivating, thereby helping to raise awareness of and spread best practices. It uses events such as opinion festivals, annual conferences, its website and social media to promote dialogue/networking, generate ideas and disseminate information.

Ultimately, the *Interesting Schools* initiative has created a certain push and pull toward undertaking school improvements. It has encouraged and inspired schools and their stakeholders to help create more interesting, engaging and motivating learning environments while likely also placing social pressure on the initially less inspired to demonstrate that they are keeping up with the times in offering interesting learning opportunities.

## Looking Forward: 2020—2025

From 2020—2025, the initiative is focussing on the school's contribution to increasing social cohesion and well-being (see Figure 5). This aligns with *Education 2035*, the national strategic plan for education, which aims for its citizenry to develop the knowledge, skills, and attitudes needed for realising their personal, social and occupational potential whilst contributing to improvements in the quality of life nationally and to global sustainable development. Ultimately, the initiative wants to engage stakeholders including students, teachers and parents in creating more interesting and motivating learning environments that support well-being for all. In part that also calls for more transparent school leadership and management practices. In principle, all this should lead to increased stakeholder satisfaction with Estonian education.

| Vision 2025 | Non-formal and formal learning | Parental involvement | Preschool-to-school transition | Contemporary school culture | Vision 2025 |
|---|---|---|---|---|---|
| | **Learning is interesting at every school** **Motivated learners contribute to social well-being** | | | | |
| Focus Themes | Showcasing evidence-based best practices in Estonian general education | | | | Focus Themes |
| Mission | Environment for spontaneous networking between educational institutions | | | | Mission |

**Figure 5:** Interesting Schools' foci for 2020—2025

By 2025, among others, the initiative seeks:

- to achieve increasingly spontaneous network-based close cooperation between educational institutions
- to increase student and parental involvement with a view to encouraging co-agency
- to better integrate non-formal and formal learning opportunities
- to support the widespread use of innovative and evidence-based learning and teaching practices, including the use of assessment to support learning
- to capture and disseminate evidence-based stories of successful innovations implemented by schools
- to give national and international visibility to the evidence-based best practices in Estonian general education
- to have all schools working systematically to develop entire-school learning environments that contribute to student and teacher well-being.

**FOR FURTHER INFORMATION** see www.huvitavkool.ee/p/blog-page_6.html or contact Kärt Leppik (kart.leppik@ut.ee) at the University of Tartu's Centre for Educational Innovation or Pille Liblik (pille.liblik@hm.ee), Estonian Ministry of Education and Research.

# Endnotes and references

1.  Kikas, E. and A Toomela (Eds) (2015). *Õppimine ja õpetamine kolmandas kooliastmes. Üldpädevused ja nende arendamine [Learning and teaching in key stage three. General competences and their development]*. Tartu: Tartu University Press.

2.  Kikas, E. and A.-L. Jõgi (2016). Assessment of learning strategies: Self-report questionnaire or learning task. *European Journal of Psychology of Education*, 31, 759—593.

3.  Kikas, E., Mädamürk, K., Treial, K., Luptova, O., Malleus, E., Soodla, P., et al. (2018). *Arvutipõhised hindamisvahendid õpi-, suhtlus- ja enesemääratluspädevuse hindamiseks I ja II kooliastmes* [*Computer-based assessment instruments for measuring learning, communication and self-regulation skills in key stages I and II*]. Tallinn: Tallinn University and Innove.

4.  Reisenbuk, E. (2018). The new standard-determining e-tests in natural science are now ready. Press release. Tallinn: Innove. Accessed at: www.innove.ee/en/news/elle-reisenbuk-new-standard-determining-e-tests-natural-science-now-ready/ on 14.02.2021.

5.  Pedaste, M. (2018). *Loodusvaldkonna õpitulemuste e-hindamise kontseptsiooni täiendatud versioon* [An updated concept paper on the e-assessment of natural sciences learning outcomes]. Tartu and Tallinn: University of Tartu and Innove.

6.  Pedaste, M., Baucal, A. and E. Reisenbuk, E. (2021). Towards a science inquiry test in primary education: development of items and scales. *IJ STEM Ed*, 8, 19.

7.  Innove (2019). Üldhariduskoolide 2018. aasta rahuloluküsitluste tulemused. *Aruanne [General education schools 2018 satisfaction survey results: Report]*. Tallinn: Innove.

8.  Innove (2020). Explanation of surveys. Accessed at www.innove.ee on 08.08.2020.

9.  Valk, A. (2018). *Õpilaste ja õpetajate heaolu üle-Eestilises rahuloluküsitluses, lühiülevaade 2017.a tulemustest* [*Student and teacher well-being in a pan-Estonian satisfaction survey, overview of results from 2017*]. Tartu: Ministry of Education and Research.

10. Mooses K, Mägi K, Riso E-M, Kalma M, Kaasik P, and M. Kull (2017). Objectively measured sedentary behaviour and moderate and vigorous physical activity in different school subjects: a cross-sectional study. *BMC Public Health*, 17: 108.

11. Álvarez-Bueno C, Pesce C, Cavero-Redondo I, Sanchez-Lopez M, Garrido-Miguel M, Martinez- and V. Vizcaino (2017). Academic Achievement and Physical Activity: A Meta-analysis. *Pediatrics*, 140: e20171498.

12. Cliff DP, Hesketh KD, Vella SA, Hinkley T, Tsiros MD, Ridgers ND, et al. (2016). Objectively measured sedentary behaviour and health and development in children and adolescents: systematic review and meta-analysis. *Obesity Reviews*, 17: 330–344.

13. Poitras VJ, Gray CE, Borghese MM, Carson V, Chaput J-P, Janssen I, et al. (2016). Systematic review of the relationships between objectively measured physical activity and health indicators in school-aged children and youth. *Applied Physiology, Nutrition and Metabolism*, 41: S197–S239.

14. Rodriguez-Ayllon, M., Cadenas-Sanchez, C., Estevez-Lopez, F., Munoz, N.E., Mora-Gonzalez, J., Migueles, J.H., et al. (2019). Role of physical activity and sedentary behavior in the mental health of preschoolers, children and adolescents: a systematic review and Meta-Analysis. *Sports Medicine*, 49: 1383-1410.

15. Andermo, S., Hallgren, M., Nguyen, T.T.D., Jonsson, S., Petersen, S., Friberg, M., et al. (2020). School-related physical activity interventions and mental health among children: a systematic review and meta-analysis. *Sports Medicine*, 6: 25.

16. McMahon, E., Corcoran, P., O'Regan, G., Keeley, H., Cannon, M., Carli, V., et al. (2017). Physical activity in European adolescents and associations with anxiety, depression and well-being. *European Child & Adolescent Psychiatry*, 26: 111-122.

17. Mehren, A., Reichert, M., Coghill, D., Müller, H.H.O., Braun, N., Philipsen, A. (2020). Physical exercise in attention deficit hyperactivity disorder — evidence and implications for the treatment of borderline personality disorder. *Borderline Personality Disorder and Emotion Dysregulation*, 7: 1.

18. Howells K. (2018). *The future of education and skills: education 2030: the future we want*. Working paper. Paris: OECD.

19. The programme cooperates with and receives support from the Estonian Ministry of Education and Research, the Ministry of Social Affairs and the Ministry of Culture through different organisations and initiatives within the fields of education, public health and sports. From 01.01.2020 until 31.12.2023, the program is supported by project "Increasing physical activity of schoolchildren" funded by EEA grants under the program "Local Development and Poverty Reduction", co-financed by the Ministry of Social Affairs and the University of Tartu.

20. Move Lab (2021). *Schools in Motion schools' self-analyses study 2018-2020*. Database. Move Lab, Institute of Sport Sciences and Physiotherapy, University of Tartu.

21. Bacigalupo, M., Kampylis, P., Punie, Y. and G. Van den Brande (2016). *EntreComp: The Entrepreneurship Competence Framework*. Luxembourg: Publication Office of the European Union.