ESTONIA

Country Report on ICT in Education

Available on http://www.eun.org/observatory

Contact: Ene Koitla, HITSA

2015

TABLE OF CONTENTS

1. THE EDUCATION CONTEXT

1.1 KEY EDUCATIONAL CHALLENGES AND PRIORITIES

The '**Lifelong Learning Strategy'** guides the most important developments in education. On the basis of this strategy, the government decides on educational funding for the years 2014-2020 and develops new programmes that support necessary changes. The strategy's general aim is to provide everybody in Estonia with life-long learning opportunities that are tailored to their needs and capabilities, to enable them to pursue a self-determined life in their private lives, the work sphere and the society at large. In order to reach this overall aim, five strategic goals have been established.

1) Change in the approach to learning

Developing a learning approach that supports each learner's personal and social development, the acquisition of learning skills, creativity and entrepreneurial thinking, at all levels of all types of education. The challenge is to shift teaching from a subject-driven to a student-driven approach. ICT makes it possible to apply more different solutions adjusted to students' individual needs.

2) Competent and motivated teachers and school leadership

Teachers' and headmasters' assessment and salaries are based on the job qualification requirements and their job performance. The digital competence of schools, school leaders and teachers varies. In order to ensure full support to the learners' development of digital competences, all schools and relevant personnel should be digitally competent

3) Alignment of lifelong learning opportunities with the labour market's needs

Diverse, flexible and good quality learning opportunities and career services that support more people, from different age groups, to acquire professional or vocational qualifications, and increase peoples' participation in lifelong learning across Estonia. While more jobs require ICT skills and digital competence in general, there is still a lack of IT expertise on the labour market. General education needs to increase learners' awareness for job opportunities in the IT sector and provide them with IT skills, relevant for the specific education level. This also includes the need for vocational training and higher education institutions to redesign their IT curricula to include IT skills necessary for today's labour market.

1) A focus on digital skills in lifelong learning

 Modern digital technology is used to increase the effectiveness and efficiency of teaching and learning. Citizen's general digital skills have improved and the access to new digital infrastructure is ensured. The digital competence of schools, school leaders, teachers and students still needs to be increased. In addition, national e-assessments (e-exams and e-level tests) are progressively developed and implemented. The use of digital learning materials, in general and vocational education, contributes to better teaching and learning and the development of students ICT skills. Schools' ICT infrastructure still needs to be improved.

2) Equal opportunities and increased participation in lifelong learning

Equal opportunities for lifelong learning have for every individual been created

1.2 EDUCATION REFORMS

No reforms took place in the past two years.

2. ICT IN EDUCATION POLICY

2.1. NATIONAL/REGIONAL ICT POLICIES

See Chapter 4: Digital Learning Strategy 2020. Focus of the Estonian Lifelong

Link: https://www.htm.ee/en/estonian-lifelong-learning-strategy-2020

2.2. RESPONSIBILITIES

School owners (local municipalities, government, private entities, not for profit entities) are responsible for providing schools with a sufficient level of digital infrastructure. Such sufficient infrastructure includes hardware and software; including laptops and tablets for students and teachers, necessary network solutions and IT systems, local and broadband connectivity and virtual learning environments. The government is responsible for the strategic planning, design of national curricula and setting up a framework for school curricula. The government supports schools to integrate digital culture into learning via several programme-based initiatives (learning materials, teachers' education etc.).

2.3. SPECIFIC ICT INITIATIVES

1:1 mobile learning initiatives (including the use of netbooks, laptops, tablets, mobile phones or other mobile devices)

1:1 BYOD is one focus of the Lifelong learning strategy. The first objective is to increase teachers' digital competence and their awareness of the students' need for digital skills. This objective is implemented at national, regional and school level. The second objective is to ensure the access and availability of digital learning materials. In addition, the strategy fosters the use of online channels in mobile learning processes to share best practices, attend courses from different schools etc.

For further information: Estonia Information Technology Foundation (HITSA)

Learning Analytics

Learning Analytics is a focus that will become increasingly important. In particular, the central portal of digital materials is being developed. Secondly, national e-assessments are developed and implemented.

For further information: Information System for Learning materials – Ministry of Education and Research (HTM)/ E-assessment - Foundation Innove (Innove)

MOOCs for teacher professional development or initial teacher training or MOOCs for students, including certification

In general, MOOCs are not considered as a high priority for teachers' professional development. MOOCs are, however, relevant, for developing teachers' digital competences in teachers training. Credit points acquired for the Estonia Information Technology Foundation's (HITSA) secondary teacher training on digital competence can be considered in formal education, if needed.

ICT for inclusion (early school leavers, migrants, etc.) and special needs (physical, mental, emotional)

In teachers' training and development of digital learning materials on inclusion and special needs are considered as relevant and important.

For further information: Learning materials – HTM Teachers' training – Innove

ICT for learning initiatives targeted to boost employability and entrepreneurship

A separate initiative is implemented to better support entrepreneurship: developing the curricula and learning materials and supporting cooperation between employers and schools.

For further information: HTM

Cloud computing and connectivity (e.g. wire-less Internet, optical fibre connections)

In general, IT infrastructure is the responsibility of school owners. A separate initiative for improving internet connection of general education schools is in preparation.

For further information: Ministry of Economic Affairs and Communications (MKM)

2.4. ICT PRIORITIES

Area	High	Mid	Low
A: Digital Competence Development			
Developing measures to support digital competence for future teachers	X		
Developing measures to support digital competence for in service teachers	X		
Developing measures to support school leaders in the integration of ICT	X		
ICT for learning initiatives targeted to boost youth employability and entrepreneurship	X		
ICT for accessibility and inclusion: early school leavers, migrants, etc… and special educational needs	X		
B: ICT in Curricula and Assessment			
Developing computer/programming skills	X		
Developing key competences	X		
Developing 21st century skills (critical thinking, problem solving, communication, collaboration, and creativity and innovation)	X		
Assessing with ICT/ICT based exams	X		

Area	High	Mid	Low
Learning analytics	X		
C: System-wide innovation			
Piloting and validating innovative uses of ICT	X		
Piloting and validating innovative uses of ICT	X		
Mainstreaming ICT in schools	X		
D: Mobile Devices			
Use of tablets	X		
Use of mobile phones	X		
Bring Your Own Device	X		
Cloud computing	X		
E: Use of digital resources			
Developing educational content repositories/metadata	X		
Supporting the development of open educational content and resources	X		
Supporting the development of educational content/resources provided by publishers	X		
Promoting the use and sharing of educational resources with teachers	X		
F: Learning environments			
Linking formal and informal learning using ICT	X		
Providing equitable access to ICT (infrastructure, devices and content)	X		
Providing a safe learning environment to students and teachers	X		
Commissioning ICT related research	X		

3. THE CURRICULUM AND ICT

3.1. ICT BASED ASSESSMENT

No information provided.

3.2. SCHOOL IMPROVEMENT WITH ICT

1) Self-evaluation framework will be developed for digitally competent schools
2) National studies for assessing the impact of programmes/ the situation timely
3) Use of digital solutions will be included in the assessment framework for schools
4) E-level tests for assessing digital competence of students will be developed and implemented
5) EC relevant studies

3.3. THE CURRICULUM FRAMEWORK

The national curriculum refers to digital competence as a key competence. At national level, the concept of digital competence and guidance materials for all subjects are designed. At national level, IT as a subject is described as an optional subject. Schools are responsible for designing their school/regions/focus specific curricula. It is up to schools to decide how students' ICT skillsare being developed – via different subjects or through a separate subject. Often schools design their own curriculum for ICT.

3.4. ICT IN THE CURRICULUM

See section 3.3. The Curriculum Framework.

3.5. STUDENTS' ICT COMPETENCE

The standard for student's digital competence is being developed based on the DGCOMP framework (5 competences).

3.6. ASSESSMENT OF ICT COMPETENCE

National e-level tests will be developed and implemented based on students' digital competence standard.

4. DIGITAL LEARNING RESOURCES AND SERVICES

4.1. E- CONTENT DEVELOPMENT

Several pilots for developing or supporting the development of digital learning materials are currently being implemented. A crucial change is that publishing companies producing textbooks are obliged to make textbooks available in digital format since May 2015. A new programme targeted at developing digital content in general and vocational education is in preparation.

4.2. CONTENT SHARING

Two repositories:

- http://www.koolielu.ee: educational resources for pre-school and general education.
- www.e-ope.ee: Resources for vocational and higher education

4.3. ACCESSIBILITY FOR LEARNER WITH DISABILITIES AND SOCIAL INCLUSION

Learning materials for learners with disabilities and social inclusion are developed at national level and by publishing houses.

4.4. WEB 2.0

HITSA offers different trainings to teachers to promote the use of web 2.0 tools. HITSA is also coordinating the network of educational technologists, who are supporting teachers to use web 2.0 tools. Additionally, different contests for teachers and learners exist that require the use of web 2.0 tools.

4.5. LEARNING PLATFORMS

Study information systems

to manage and automate study related information

and processes: Many different ones exist and al-most every school uses one:

- [eKool.ee](#) - used by basic and secondary education institutions
- [stuudium.com](#) – used by basic and secondary education institutions
- [Ois.ee](#) – used by 13 applied higher education schools, universities and vocational schools.
- [Siseveeb.ee](#) – used by 21 vocational schools

Repositories of electronic learning materials and learning objects

- [koolielu.ee/waramu](#) – learning materials for pre-school, basic and secondary education

Learning platforms

- [moodle.hitsa.ee](#) – used by ~200 basic and secondary education schools, applied higher education schools, universities and vocational schools
- [viko.edu.ee](#) – used by basic and secondary education schools

There are schools, teachers who are very good at using digital tools, but still some almost never use digital tools, mainly because they do not want to.

Developing information systems together as a consortia (ois.ee, sais.ee) has proven successful, as it helped to improve the processes in schools.

5. TEACHER EDUCATION FOR ICT

5.1. ASSESSMENT SCHEMES

Evaluation model for teachers' educational technology competences

The assessment of in-service teachers' ICT skills is not regulated at national level. This is a matter on which school leaders and teachers can decide themselves. HITSA is developing an **evaluation model of educational technology skills** which will be designed for teachers as a self-analysis tool

to support professional development and as a tool to evaluate teachers. The model is also the basis of training programs that are focused on improving digital competences of teachers, lecturers and school leaders. The evaluation model and training courses developed to foster teachers' ICT skills are based on the digital skills standards of the International Society for Technology in Education (ISTE). This standard provides an ideological framework for learners, teachers and educational managers to follow.

Since 2013, the evaluation model for teachers' educational technology competences is integrated in the national teacher professional standard. Therefore, teachers have to evaluate and demonstrate their digital skills when they apply for occupational qualifications. Digital competences are part of the teachers' transversal competences mentioned in the professional standard (example: [teacher, level 6](#)). The evaluation process is managed by the Estonian Qualifications Authority and is not compulsory for all teachers.

Estonian e-Course Quality Label

One of the main goals of the HITSA Innovation Centre is to ensure quality in e-learning. This is achieved via a staff training system and support activities, developing infrastructure and the annual "Quality e-course" label awarded since 2004. The HITSA Innovation Centre has developed its own quality label application procedure for which teachers and lecturers can apply every year, in order to get a quality label for their e-courses. The e-courses will be assessed by e-learning and faculty experts and the best course authors will be awarded.

In order to apply for the quality label, teachers or lecturers need to submit a [self-evaluation](#). The self-evaluation form consists of 27 criteria that they have to evaluate on a four-point scale. The objective of the self-assessment is to acknowledge strengths and weaknesses of the created e-course in order to identify possible areas for improvement and further development

5.2. SCHOOL LEADER SUPPORT

HITSA has developed a training program „Educational Leader in a Digital Age". The program supports leaders at all educational levels to lead the learning process in the digital age purposefully and to create, as a team, an ICT vision and action plan for their institution. The training program for school leaders supports the achievement of the following results:

- Knows trends and developments of the digital age learning process and supervises the establishment of a modern learning environment in educational institutions.
- Knows how to include appropriate methods that support digital devices and resources into the learning environment.
- Knows how to put desired/requested change into practice within their own organisation.
- Plans the first practical step to change the learning process of the digital age.
- Knows the principles of systematic development of the educational institution in accordance with the learner's needs and includes effectively ICT devices and resources.
- Knows that a vision of the digital age has to be developed as a team.
- Composes an action plan to put the vision, as a team, into practice within the organisation.
- Knows how to organize the digital domain within the institution.
- Evaluates the situation and developmental needs of the digital infrastructure in accordance with the institution's needs.

5.3. ICT FOR INCLUSION

The topic 'ICT for inclusion' is integrated into general teacher training

5.4. ICT IN INITIAL TEACHER EDUCATION

YES

Initial teacher training takes place at universities (University of Tartu and Tallinn University) and ICT competencies are part of the curriculum (integrated into the modules and subjects).

5.5. ICT IN IN-SERVICE TEACHER EDUCATION

NO

In-service teacher education in the field of ICT is organised mainly by HITSA and universities (to a lesser extent). The role of HITSA is to:

- ensure that the graduates at all levels of education have obtained digital skills necessary for the development of the economy and society
- the possibilities offered by ICT are skilfully used in teaching and learning, to improve the quality of learning and teaching at all levels of education)

The HITSA Innovation Centre offers in-service training which is designed to foster the digital skills of teachers, lecturers, education technologists, directors of educational institutions and other education specialists. The training courses provide participants with knowledge for the planning and implementation of learning processes based on contemporary methodology and technology at all levels of education: basic, general, vocational and tertiary. Most of the training courses are focused on rather general competences - how to use new methodologies, new approaches to learning, on the one hand, and how to use ICT tools to support learning, on the other hand.

The courses support teachers, lecturers and educational technologists in acquiring the educational technology skills they need in their work. There are

more than 50 courses one can choose from, depending on the needs. Courses are thematically divided into six categories:

- Creating teaching materials using digital resources
- The learning process in the digital age
- The digital learning environment and its resources
- The professional development of teachers
- Technology education
- Managing educational institutions in the digital age

2300 teachers from all education levels are expected to attend the courses every year. For the courses, a variety of teaching forms is used: classroom-based training, combined study courses and entirely online based courses. This allows participants to make the best use of their time and to choose the option that suits their needs best.

5.6.   TRAINING THE TEACHER TRAINERS

The role of an educational IT specialist in a general education institution is the coordination of e-studies, as well as providing advice in this area and overseeing its development. The IT specialist is familiar with and skilled in using all resources and methods of the digital age and contributes to implementing them in the learning process. Subject-based IT specialists are the experts in their subjects and their main role is to promote the subjects in the *Koolielu* education portal using the opportunities and resources of the digital age.

Publisher: European Schoolnet (EUN)

Author: Ene Koitla, HITSA

Editor: Katja Engelhardt (European Schoolnet)

Coordinator: Anja Balanskat (European Schoolnet)