

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution of Latvia

to the CSTD 2017-18 priority theme on ‘Building digital competencies to benefit from existing and emerging technologies with special focus on gender and youth dimensions’

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MoES information

United Nations Commission on Science and Technology for Development Request for inputs for CSTD 2017-18 Priority Theme 2: “Building digital competencies to benefit from existing and emerging technologies, with special focus on gender and youth dimensions”

1. Can you give examples of digital competencies projects/policies in your country and how they have contributed to benefit from existing and emerging technologies? What are the main challenges confronted while trying to implement these projects/policies in your country or region?

Development of digital skills is very important for Latvia. It allows to promote the quality of education and to broaden education opportunities for all groups, as well as to react to the continuous transformations of the labour market.

The Guidelines for the Development of Education for 2014-2020¹ is the main education policy planning document in Latvia. It addresses the use of ICTs in the processes of learning and development of digital skills with the support of the state budget and the EU financial instruments, for example:

- on-going development of competency-based general education content, including promotion of digital skills and digital learning materials;
- professional development of teachers, strengthening of their digital skills and the ability to use them in the classroom while working with students with different backgrounds;
- upgrading of the infrastructure and learning environment, providing tools for the effective use of ICT;
- facilitating mutual cooperation of teachers, including within E-Twinning network, supporting innovative ICT solutions in the learning process;
- supporting STEM (*Science, Technology, Engineering, and Mathematics*) and attracting more students to these study directions;
- ensuring sustainability between different stages of education and coordination of the plan of acquisition of digital skills with universities.

Considering the rapid growth of ICTs, as well as the development of the new competency-based general education content, digital competence (including algorithmic thinking) is being integrated across different subjects in both primary and secondary school including the systemically organized Computer Science module.

A new computer science content has been developed by the National Centre for Education for the grades 1-9 and is currently being approbated in 153 schools. In-depth Computer Science subjects are to be offered for the grades 7-9. The main challenges related to the new competency based general education content and the development of digital skills are: (1) professional development of teachers in order to enable them to implement the new education content and to use ICTs in the learning process; (2) transition period for the incorporation of to algorithmic thinking,

¹ The Guidelines for the Development of Education for 2014-2020 is a medium-term policy planning document that sets out the structure of the education sector development and prospects for the next seven years. The Guidelines define the overarching education policy, the underlying courses of action and specific stakeholder activities. The Guidelines have been developed in close collaboration with industry partners.

programming etc. in the learning practice; (3) transition to an earlier development of digital competence and the new learning methods.

The use of ICT learning tools has increased, supplementing or replacing the printed materials. They are easily adaptable to students' needs and level of knowledge. ICT tools not only make learning process easier and more interesting but also improve education quality and attractiveness. The Guidelines for the Development of Education for 2014-2020 encourage the development of ICT learning tools, not least for the implementation of inclusive education.

Open Educational Resources have been promoted in Latvia, including through the project "Natural Sciences and Mathematics" supported by the European Social Fund. This project allowed to produce support materials for teachers in biology, physics, mathematics and chemistry (ISCED 2 level) which are available on the Internet. In addition, more than 30 electronic learning materials in Natural Sciences and Mathematics are being actively used at ISCED 3 level.

Distance learning using ICT tools has become increasingly popular, including in general education programmes. The e-environment is an essential part of higher education process, both for administrative and study purposes. Most of the higher education institutions in Latvia use the platform *Moodle*. Latvia acknowledges the increasing popularity of MOOCs (*Massive Open Online Courses*) globally even if they have not been actively developed in Latvia due to possible accreditation challenges

The provision and training of personnel to ensure inclusive education for young people including those in groups at risk has been enabled with the support of the European Social Fund. It included the development of appropriate methods, instruments, programmes, equipment, e-studies and e-resources for the use in the learning process.

The general education environment will be improved through the introduction of innovative ICT solutions in the learning process and establishment of methodological centres in the field of ICTs in order to enhance education quality. The European Regional Development Fund plans to improve and modernize the infrastructure of general education institutions, taking into consideration the specific needs of each region and the national education development strategies.

The support of the European Regional Development Fund allows to modernize equipment and to improve infrastructure for the implementation of vocational education and training (VET) programmes. The goal is to foster VET to meet the labour market requirements. The supported activities include renovation and reconstruction of buildings, modernisation of equipment, facilities and technologies, as well provision of ITs for the implementation of VET programmes.

The material and technical base of the higher education institutions has been improved with a special focus on the implementation of STEM programmes. The support of the European Regional Development Fund will allow to improve the research and development (R&D) infrastructure.

Other initiatives promote the development of digital skills of the wider audience. For example, the Latvian Information and Communication Technology Association in cooperation with the Ministry of Environmental Protection and Regional Development annually organizes *E-Skills Week*. It is an information

campaign for the whole society demonstrating the applicability of digital skills at work, career development and to ensure growth. *E-Skills Week* usually involves many partners from the public service, schools, academic domain, enterprises, NGOs, etc.

2. Can you provide examples of digital policies/projects/initiatives to benefit from existing and emerging technologies specially focused on gender and youth? How have the policies benefited women and youth? What are the particular challenges confronted in implementing these projects?

The above-mentioned activities cover various levels of education and they are oriented towards different society groups. They include youth and equally treat both genders, making the acquirement of digital skills possible for all.

Additional activities are carried out in order to develop the digital skills, media literacy and critical thinking of youth. In 2016, the Ministry of Education and Science in cooperation with the organization “*Avantis*” organized an international media summer school “*Young Media Sharks 2016*”². It was an educational initiative which offered youngsters the opportunity to develop their knowledge and skills, including in the areas of critical thinking and argumentation, information search, modern communication, media manipulation, etc. In 2017, this summer school took place for the fifth time, gathering many youngsters and offering them a possibility to learn from professionals from Latvia, Estonia, USA and Ukraine.

Seminars for experts working with youth will also be provided in order to develop their digital skills, media literacy and critical thinking, allowing to improve the quality of their performance.

3. How can the science, technology and innovation community contribute towards overcoming these challenges? Can you give any success stories in this regard from your country or region?

Nowadays it is impossible to implement reforms and overcome challenges without innovative approaches and assistance of partners. Here are some examples of successful partnership with ICT community: the development of the new competency-based general education content is coordinated by the National Centre for Education while the approbation process requires involvement of the Latvian Information and Communication Technology Association which helps to develop the necessary learning and methodological materials.

- The recommendations for digital learning were developed by a working group led by the Latvian Information Technologies (IT) Cluster and then forwarded to the Latvian Information and Communication Technology Association.
- The digital learning programme “*Samsung School for tomorrow*” allows teachers to improve their professional competence and work process.
- The Safer Internet Centre “*Net Safe Latvia*”³ (Latvian Internet association) will develop new learning materials on safe use of the Internet.

4. Could you suggest some contact persons of the nodal agency responsible for digital competencies projects/policies, particularly those related to gender and

² <http://youngmediasharks.eu/en/>

³ <https://www.drossinternets.lv>

youth, as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

- Latvian Information and Communication Technology Association (contacts: office@likta.lv, direktors@likta.lv);
- Safer Internet Centre “Net Safe Latvia” (Latvian Internet association) (contacts: info@drossinternets.lv);
- Latvian IT Cluster (contacts: itcluster@itbaltic.com);
- University of Latvia, Faculty of Computer Sciences (contacts: LU.viesturs.vezis@lu.lv, df@lu.lv);
- University of Latvia, Faculty of Physics and Mathematics (contacts: inese.dudareva@lu.lv, fmf@lu.lv).

5. Do you have any documentation, references, or reports on the specific examples on digital competencies to benefit from existing and emerging technologies in your country or region?

Unfortunately all documents listed below are only accessible in Latvian (further explanations and comments are available upon request):

- Study “*Competence developing learning. Recommendations for education policy makers*” (goo.gl/maJPon).
- Study “*Evaluation of the directions of general education programmes and secondary education profile courses system in Latvia*” (goo.gl/XfQU5i).
- Report “*The implementation of the Beijing Platform in Latvia*” (goo.gl/dFmZfY).