Lithuania

Country Report on ICT in Education

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1. THE EDUCATION CONTEXT

1.1. Key educational challenges and priorities

Key national strategic documents (Lithuania's Progress Strategy 'Lithuania 2030', National Progress Programme 2014–2020 and State Education Strategy 2013–2022) set out goals for the national education system. The strategic goal is to turn the education system in Lithuania into a sustainable foundation for the development of national welfare and to raise a young independent and innovative generation that will lead the country.

Lithuania's priorities in the field of education: long-term objectives, direction of changes in the content of curricula and financing priorities are set out in the State Education Strategy 2013–2022:

- Establishment of educational community, where professional teachers and lecturers are reflective, constantly developing and work in a highly effectively manner;
- To develop an educational culture driven by data analysis and self-evaluation, that in turn will ensure effective interaction among stakeholders in education;
- To ensure that learners (pupils, students and young people in general) have the best opportunities to realise their individual potential in full. By ensuring accessibility and long duration of education and equal possibilities to all learners, by providing the effective pedagogical and psychological aid to pupils who experience learning difficulties;
- To establish a system of incentives and equal conditions of lifelong learning opportunities. A system that gives effective aid in choosing a career path or to combine one's choice with the labour market needs.

The role of ICT can be seen as a tool for teachers and lecturers, which assists them to work efficiently. Moreover, education institutions can benefit from the wide possibilities ICT opens in management, data analysis, self-evaluation, and interaction among school community.

1.2. Education Reforms

The current reform initiatives in the field of education were directed to further increase the quality of pre-primary, general and vocational education, to promote accessibility and international competitiveness of higher education and to develop vocational training programmes to better respond to the labour market needs.

Among the latest policy initiatives, it is important to mention the introduction of compulsory pre-primary education, initiation of discussions concerning the new student assessment system based on cumulative assessment, development of work-based learning and apprenticeship system and the development of joint study programmes.

In recent years, demographic changes and population migration (regular annual decline in the number of students) made it necessary to reform the network of schools. Over a decade, the number of general education schools decreased by 341, or 22.2 per cent.

The biggest challenges for the education system are:

- Adjust to the declining number of students.
- Reduce the share of 15 year olds with low achievement in reading, maths and science.
- Reduce the differences in student achievement between rural and urban schools.
- Reduce social exclusion and improve the provision of rural schools with adequate resources.

2. DIGITAL EDUCATION POLICY

2.1. National/ regional digital education policies

Progress in developing the information society is being made according to the Lithuanian Information Society Development Programme for 2014–2020: the "Lithuanian Digital agenda", approved by the Lithuanian Government in 2014 (Decision Nr 244, March 12th, 2014).
The strategic objective of the Programme is to improve the life quality (activities and environments) of individuals and enterprises' through the use of ICT. The main Programme's evaluation criterion is the number of inhabitants (in per cent from who use internet constantly (the aim is 85% in 2020). By 2020 85% of the population will be connected to the internet. One of the Programme's priorities dedicated to education is the "improvement of the population digital skills". One of the related tasks is to create flexible learning possibilities of new quality that will allow personalised lifelong teaching and learning in digital environments. The target is set to 20% of 16 to 74 year olds in Lithuania will use internet for educational purposes in 2020.

In order to achieve this target, the Lithuanian Ministry of Education and Science implements a number of programmes and projects:

- The Action Plan for the Inclusion of Children and Multidimensional Education 2017-2022 (Decision No. V-527 of 27 June 2017, link in LT), covering:
- the computerisation of teachers' workplaces; Development of the LITNET program, including the creation of a secure electronic space for children;
- Development of curriculum for elementary education in informatics;
- Development of digital content and its adaptation for pupils with special educational needs; The Action plan for the Development of Vocational Training 2014-2016 (link in LT), covering
- Development of information systems and registers for vocational education and training lifelong learning;
- The Action Plan for Quality Culture Development (link in LT) covering
- Development of the Education Management Information System (EMIS).

2.2. Responsibilities

Responsibilities for schools are shared as follows:
The Ministry of Education and Science (MoE) is responsible for preparing the main policy documents such as strategies and implementing planned programmes. Furthermore, the MoE establishes the qualification requirements for teachers working in educational institutions, and operates the procedure for attestation of principals and teachers, the methodology for calculating 'student's basket'. Lithuanian Schools are funded by the principle 'money follows the student', meaning that resources for education are allocated per one conventional student, this is the 'student basket'. These educational resources may not be re-allocated to other non-educational purposes. The amount of the basket is established by the Government. Both public and private schools receive regular funding from the student basket allocation system.

The MoE related institutions like the Centre of Information Technologies in Education (CITE), the Education Development Centre (EDC), National Examination centre (NEC) and others, are responsible for implementing national programmes in different areas. In addition they are also responsible for the curricula development and support the implementation process of MoE policies.

There are 60 local municipalities / local governments that are responsible for compulsory schools' management. A representative institution of the municipality implements the state education policy, sets out long-term objectives and measures for their achievement. Furthermore, this institution funds and reorganises the municipality education institutions and it develops a network of schools carrying formal and non-formal education programmes. To conclude, the representative institution creates the necessary conditions for the implementation of compulsory education in the various regions.

Institutional level:
Each municipality institution is in charge of the following:

- Initiate, coordinate the implementation process and operate strategic plans and educational programmes;
- Appoint or dismiss teachers and other personnel under the established procedures;
- Support and develop the democratic governance of the school and publishing of information about the school's activities;
- Ensure collaborative relationships, compliance with standards of ethics such as transparency of decision making and informing community members,
- Provide possibilities of continuous professional development for educational staff;
- Ensure a healthy and safe environment that prevents any abuse, violent manifestations and harmful habits;
- Analyse the state of institution's activities and management resources, to account for students' performance;
- Perform the functions assigned by the founder of the institution.

The educational system management mechanism in Lithuania is being gradually decentralized in accordance with the principle of subsidiarity. While central management implements national educational goals, empowerment of local authorities and lower divisions in education system creates the conditions for participation of local community and school representatives. This process of territorial de-centralisation is taking place as the MoE delegates more tasks to municipalities. The Ministry remains responsible for the management of education development, establishment of requirements for general education and vocational education and training. Furthermore, the MoE ensures and accounts for the quality, accessibility and evaluation process of the system.

2.3. Specific digital education initiatives

Area	Short description
Student identity management and School management systems	Lithuanian education has separate national and local management information systems. At national level, there are 9 registers (students, schools, programs, etc.) and several information systems (Education Management Information System, Open Career information systems, education portal eMokykla.lt). Schools have their own management information system. The most popular e-diary (it includes "student grades, attendance, time table) system (the provider is the private sector) for example: www.tamo.lt www.manodienynas.lt (all links are in LT) Student Identity Management is planned through the Student Register.
New learning spaces (reorganising classroom and school architecture Future Classroom Labs, Fab Labs, Makerspaces)	Education Supply Centre (ESC) of MoE are working on the EU structure project Modernization of General Education Schools (Pre-Families and Primary Schools): Creation of Modern Learning Spaces Individual schools project document are published here. The project is implemented together with the Academy of Arts. The objectives are to renovate school buildings, provide educational equipment which in turn will allow to update educational curriculum for schools accordingly. For more information (LT/EN)
Game based education	There is no specific initiative in this area.
Implementation of **computing, coding, computational thinking initiatives**	The MoE together with the Centre for Development of Education initiated the project "Informatics in Primary Education". The aim of this project is to create the content of elementary education informatics. The project prepared by the working group of scientists, teachers, education experts and the Ministry of Education and Science of the Republic of Lithuania for more info (LT/EN).
Self- or peer assessment tools/frameworks	Lithuania is a member of The MENTEP (MENtoring Technology-Enhanced Pedagogy) project is a European Policy Experimentation funded by the European Commission via the Erasmus+ programme. For more information (EN)
Tests for teachers and students to test their digital competence	Student have possibilities to take optional IT subject in their maturity exam, which includes digital competence For more information (LT)

2.4. Digital education priorities

Area	High priority	Medium priority	Low priority	Reference to policy action measure
A: Digital Competence Development				
Developing measures to support digital competence of **future teachers**		*xx*		*Teachers training*
Developing measures to support digital competence of **in service teachers**		*xx*		
Developing measures to boost youth **employability and entrepreneurship**			*xx*	
ICT for **accessibility** and **inclusion**: early school leavers, migrants, special educational needs etc.			*xx*	
B: Curricula and Assessment				
Developing **digital competence/media literacy** of students		*xx*		*Media literacy in national curriculum*
Developing computer/programming skills/**computational thinking skills**	*xx*			*IT subject in primary education*
Developing **key competences** [1]	*xx*			
Developing **21st century skills** (critical thinking, problem solving, communication, collaboration, creativity and innovation)		*xx*		*Curriculum update*
Assessing with ICT/ICT based exams	*xx*			*Development exam in e-format*
C: System-wide innovation				

[1] See EC Key competences for lifelong learning: digital competence, math science technology, communication in mother tongue, communication in foreign languages, learning to learn, social and civic competences, sense of initiative and entrepreneurship, cultural awareness and expression. http://europa.eu/legislation_summaries/education_training_youth/lifelong_learning/c11090_en.htm

Developing measures to support **school leaders** in the integration of ICT		*xx*		*DigCompOrg integration in schools*
Piloting and validating innovative uses of ICT		*xx*		
Mainstreaming ICT in schools			*xx*	
Monitor and research digital learning in schools			*xx*	*Data in Education Management system*
Learning analytics (using digital technologies and data to support learning)			*xx*	
D: Mobile Devices				
Use of tablets			*xx*	*Providing wifi through academic network LITNET*
Use of mobile phones			*xx*	
Bring Your Own Device		*xx*		
Cloud computing/services		*xx*		
E: Use of digital learning resources				
Developing educational content repositories/metadata		*xx*		*Developing national portals*
Supporting the development of open educational content and resources		*xx*		
Supporting the development of educational content/resources provided by publishers			*xx*	
Promoting teachers' use, creation and sharing of educational resources		*xx*		
F: Learning environments				
Developing/adapting flexible learning spaces			*xx*	
Linking formal, non-formal and informal learning using ICT		*xx*		
Providing equitable access to ICT (infrastructure, devices and content)		*xx*		
Providing a safe learning environment to students and		*xx*		

teachers				

3. INTEGRATION OF DIGITAL TECHNOLOGIES IN THE CURRICULUM

3.1. Digital technology based assessment

The National Examination centre (NEC) is working in the area of for ICT based assessment. One of the projects organised by the NEC is the 'Development of Standardized Student Achievement Assessment and Assessment Tools for General Education Schools'. In the framework of the project, assessment tools will move from paper to ICT based assessment. It includes national standardization test and exam. Due to the success of the program, it is foreseen to continue and develop with the support of EU structural funds. For more information (LT)

3.2. School improvement with ICT

National Agency for School Evaluation manages self-assessment of state schools' performance quality. The agency organizes and coordinates an external evaluation of their performance, provides data for education monitoring and carries out education policy analysis tasks. ICT is not as separate subject in this assessment. For more information (LT).

3.3. The curriculum framework

The curriculum is developed on the national level by the EDC, Education Development Centre. The education system in Lithuania is centralised, but schools and teachers have the freedom to implement curriculum goals. Various curriculum related documents such as lesson plans, projects, shared ideas and innovations, programmes and more are available at the Emokykla educational Portal (LT).

3.4. Digital technologies in the curriculum

ICT is taught as a separate subject and also integrated into other subjects. When studying ICT as a separate subject, students develop and enhance their information and technological competences. ICT is taught from basic grades (5th), continues to be part of the curricula in secondary schools and gymnasiums. A large number of ICT learning objectives are included in central steering documents for secondary schools which include less common objectives such as programming skills and knowledge of computer hardware.
From 2017 ICT as subject is also piloting in primary schools.
ICT is recommended as a general tool across subjects in both primary and secondary schools and is also a separate subject at secondary level.

3.5. Students' digital competence

In Students' Computer Literacy Standard (approved by the Minister of Education and Science in January 2002), the notion of computer literacy is used in a broad sense: it does not only include the ability to work with computers, but also the skills to apply IT in learning and while obtaining general digital skills.

3.6. Assessment of digital competence

Students have ICT credit in grade 10 and an optional maturity exam in grade 12. Furthermore, the use of ICT is recommended for the teaching of all eight key competences in central steering documents.

4. DIGITAL LEARNING RESOURCES AND SERVICES

4.1. Digital content development

There is no special strategy or policy document on digital learning resources (DLR) in Lithuania.

DLR are systemised and stored into several repositories. The main repository of recommended digital learning resources metadata can be found here (LT). Currently, there are over 8,000 open digital learning resources in the repository. Those resources are systemised according to subjects. The search engine is organised in different ways convenient for different users. The repository is based on the open LOM (Learning Object Metadata) standard's Lithuanian application pro-file. SCORM is the open content standard used in the repository.

Since 2005, CITE participates and/or participated in a number of international EU-funded projects (CALIBRATE, INSPIRE, ASPECT, eQNet) that were co-financed by Lithuanian state budget and were aimed at creating digital learning resources (DLR). These projects were implemented together with EUN while developing European Learning Resource exchange (LRE) services for schools.

A number of related projects were implemented through national projects and programmes funded by the European Development Fund and the Lithuanian state budget. The main projects in the area are implemented by EDC under the supervision and direction of the MoE, for more information (LT/EN).

Research on Open Educational Resources for Primary and Secondary Schools: The last research on DLR was performed in Lithuania in 2012 while implementing the large scale project 'Educational Content Innovations Dissemination Model' funded by the European Social fund and Lithuanian state budget. The project is implemented currently by EDC. The report "Analysis of

Lithuanian Digital Teaching Aids Supply and Usability in Educational Process" is available here. The main goal of the research was to analyse how many suitable accessible Open Educational Resources created in Lithuania exist at the moment, and what part of the curriculum is covered by those OER. In the report, special attention was paid to the interactivity level of the DLR. One of the main conclusions is that currently there is a lack of a higher interactivity level of Digital Learning Resources in Lithuania. The majority of DLR with a higher level of interactivity is not free for use in Lithuanian primary and secondary schools, schools need to buy it from publishing companies, to other hand schools budget is quite limited.

The study shows that there are a few number of Lithuanian original (or translated / localised) DLR, non-web site technologies (CD versions or exclusively for Microsoft Windows, etc.).The report highlights that several curriculum subjects are not covered by DLR. Those subjects are Ethics, Philosophy, and Religion. There is a lack of suitable DLR for Russian, Polish, German, French languages, Law, and Psychology. Number of DLR for other subjects: Lithuanian (cover about 77 % subject), English (50 %), Math (100 %), Biology (100 %), Chemistry (87 %); Physics (90 %); Integrated Science course (67 %); History (60 %); Geography (24 %); Economy and Enterprise (14 %); Art (15 %); Music (35 %); Information Technologies (24 %); Technologies (12 %).

4.2. Content sharing and creation

National platforms for sharing and creation resources is national portal Emokykla and Ugdome Sodas.

4.3. Accessibility for learners with disabilities and social inclusion

The National Centre for Special Needs Education and Psychology is the responsible institution under the Lithuanian Ministry of Education and Science for developing the system of special pedagogical and psychological support in Lithuania.

The Main factions of the Centre are:

- To coordinate the first and the second level of the special pedagogical and psychological support system;
- to organise training programs for specialists of the municipal pedagogical psychological services;
- To provide advice on assessment or supervision on difficult or problematic cases to psychologists, speech therapists and special teachers working in the municipal services;
- To construct or adapt psychological and achievement tests and make recommendations for their use in the municipal pedagogical psychological services;
- To develop and adapt the legislation acts that follow the implementation of the Law on Special Education;
- to cooperate with municipal pedagogical psychological services;

- To provide methodical support for the municipal pedagogical psychological services.

The National Centre for Special Needs Education and Psychology is implementing the system of provision of special educational materials, it include DLR as well. More information is available here (LT).

4.5. Learning Platforms

The main learning platform currently used at Lithuanian Universities and schools is Moodle. Learning platforms are not very popular in primary and secondary schools. Moodle was used mainly by CITE- Centre of Information Technologies in Education to provide ICT courses for teachers.

5. TEACHER EDUCATION FOR DIGITAL LEARNING

5.1. Assessment Schemes

The requirements for the Pedagogues' Computer Literacy Programme were approved by the Minister of Education and Science in March 2007. These requirements concern teachers' professional competence development on ICT application. According to these requirements, teachers have to obtain both technological and educational ICT application competences. The requirements are compulsory for all teachers professional development Programs

Recommended assessment schemes are as follows:

- For technological ICT competence requirements of the General Computer Literacy Standard, or European Computer Driving License (ECDL) Start requirements are proposed;
- For educational ICT competence e-portfolios are proposed to assess the level of teacher's educational ICT competence.

5.2. School leader support

One of the qualification requirements for heads of educational institutions is "be able to use information technologies". Meaning that the head of an educational institution has to practice digital skills as part of the job requirements. Nonetheless the level of proficiency is not detailed, more information regarding the requirements is available here (LT).
School leaders can share information, participate in leadership programmes and establish contacts with other schools via the through the Lyderiulaikas portal (LT/RU/EN).

5.3. Digital technologies in initial teacher education

ICT related initial teacher education is a part of the over-all teacher study programmes in Universities. ICT issues are not compulsory in these programmes.

5.4. ICT in in-service teacher education

The main policy document in the area is the teachers' qualification improvement concept approved by the Minster of Education and Science of Lithuania released in May 2012 (link in LT/EN). According to this concept, communication skills, application of information technologies, and information management skills are teachers' general required competencies.
In the list of requirements for Teachers qualification (approved by the Minister of Education and Science in 2014) it is stated that teachers have to master the competences provided in the Requirements for Teacher Computer Literacy. The Ministry of Education and Science has also prepared Requirements for Teachers' Computer Literacy Programmes that develop teachers' professional competencies (approved by the Minister of Education and Science in March 2007). According to the requirements, teacher seeking to develop ICT application competencies should master the following:

- The basics of technological literacy. It is recommended to pay more attention to internet application possibilities, using email, preparation of presentations and its application in different educational subjects. The scope is 40 academic hours, final assessment – by tests. For testing the ECDL (European Computer Driving License) certification is recommended, The ECDL, is a computer literacy certification programme provided by ECDL Foundation.
- Educational ICT application competence consisting of two components:
    1. Educational: ability to individualise subject content, reasonably use computer tools, and reasonably apply teaching and learning methods
    2. Management skills: ICT use to: develop planning skills, organise ICT resources management, evaluate and reflect on ICT usage.
    3. The scope of the Educational part of Programme is not less than 40 hours (1 study credit). Training is organised in virtual learning environments, also applying the e-portfolio methodology.

5.5. Training the Teacher Trainers

Training of teacher trainers is organized by EDC and the raining material includes:
Media and National Security: Challenges and Opportunities
Learning to Explore: Using Digital Tools for teachers of various subjects.
There is a number of projects co-funded by the European Social fund on training future teacher trainers. For example the "E.school portal development".