

Chapter 10

Report on ICT in Education in Latvia



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10.1 Overview of the Country

10.1.1 *The History and Geography*

Latvia is situated in the north-eastern part of Europe at the Baltic Sea. The Republic of Latvia borders with Lithuania, Belorussia, Russia and Estonia. The name “Latvia” originates from the ancient Latgalians, one of four eastern Baltic tribes that formed the ethnic core of the Latvian people (ca. eighth–twelfth centuries A.D.). It was under the control of Germans, Poles and Swedes for many years. First the Republic of Latvia was founded on 18 November, 1918. In 1940 Latvia was incorporated in the Soviet Union. It regained its independence in 1991. In 2004 Latvia became the member of European Union. The Latvian lats were currency of Latvia from 1922 until 1940. It was replaced by roubles till 1992 and then by lats again till 2014, later the same year the euro was introduced.

10.1.2 *The Population Situation*

The current population of Latvia is 1,916,096 based on the latest United Nations and Central Statistical Bureau of Latvia estimates. Latvia’s population is equivalent to 0.02% of the total world population. Latvia ranks number 151 in the list of countries (and dependencies) by population 70.0% of the population is urban (1,338,022 people

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in 2019). The average age in Latvia is 42.8 years. The following ethnic groups live in Latvia: Latvian 61.8%, Russian 25.6%, Belarusian 3.4%, Ukrainian 2.3%, Polish 2.1%, Lithuanian 1.2%, and others 3.6% (2016 est).¹

10.1.3 The Political System

Latvia is a parliamentary republic, with the Saeima (parliament) elected by general elections. The Saeima in turn elects the president. The government cabinet is nominated by the leading coalition and approved by the parliament. Latvia is a member state of EU. The Latvian language is the official language in the Republic of Latvia. The national flag of Latvia is red with a band of white.²

10.1.4 The Current Situation of Economic Development

According to the report of the European Commission's Annual Growth Survey published on 21st November 2018, Latvia is a country which economy is catching up fastest with the EU average, but at the same time addressing population decline and ensuring that economic growth benefits all of the society continue to be important challenges. It is stressed in the report that Latvia's main challenge over the coming decades will be to continue catching up with the EU average while coping with a falling population. Due to the fact that there is a great need to invest in regional developmental human capital to improve its social, health and public governance policies, a strong rise in investment and solid consumer spending carried economic growth to 4.7% in 2018. It became possible with a support of EU funds. Strong economic growth helped increase employment for the first time in 3 years. The unemployment rate fell down to 7.4% in 2018. Wages have been growing rapidly by nearly 9% in 2017. Latvia's labour market performance is positive overall but employment conditions vary across different parts of Latvia. The unemployment rate is higher in regions furthest away from the capital and big cities. Older people with outdated skills also encounter difficulties in finding job.³

¹World Population Prospects (2017) <https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html>.

Available at: <http://www.worldometers.info/world-population/latvia-population/>.

²The Constitution of the Republic of Latvia (1922);

Legal acts of Republic of Latvia, available at: <https://likumi.lv/ta/en/en/id/57980>.

³Central Statistical Bureau (CSP) (2018). Available at: <https://www.csb.gov.lv>.

10.1.5 The Status Quo of Science and Technologies

Guidelines for the Development of Science, Technology and Innovation for 2014–2020 proposes to implement a new horizontal approach to science and innovation policy, linking research and industry sectors in a single system. The main components for a successful development of innovation system are the following: (1) the development of the potential of scientific activity; (2) the development of the platform for long-term cooperation between researchers and enterprises; (3) the support of the development of innovative enterprises.

The aim of the Guidelines is to raise the global competitiveness of Latvian science, technology and innovation, satisfying the development needs of Latvian society and economy.

The research system in Latvia is developed in line with European Research Area with the aim to synchronize the Latvian research system with the research systems of other EU member states, to increase research results to EU standards and strengthen the capacity of scientists in Latvia in order to solve global societal challenges.⁴

Latvia develops scientific potential on the basis of the existing scientific traditions, particularly in organic chemistry, medical chemistry, genetic engineering, physics, materials science and information technologies. The highest number of inventions, which are patented both nationwide and abroad, are made in the branch of medical chemistry.⁵ Higher education institutions and research institutes act as main performers.

10.1.6 The Latvian Research Funding System

The amount of investments in research and development of science is very little. In 2017, the share of expenditure on research and development was 0.51% of GDP (against 2.1% in the EU average). Moreover, research funding relies almost entirely on EU funds.

The government has made some of research-performing organizations' institutional funding dependent on past performance. This is done by 'three-pillar' funding model comprising:

- Institutional funding for higher education and research and competitive project funding for research;
- Funding dependent upon past performance in higher education and research;

⁴European Research Area (ERA), available at: https://ec.europa.eu/info/research-and-innovation/strategy/era_en.

Available at: <https://www.izm.gov.lv/en/science-policy>.

⁵Ibidem.

- Funding to promote institutional development and innovation—which has largely yet to be implemented.⁶

10.1.7 The Status Quo of Social and Cultural Development

Latvia is the only country in the world where the Latvian nation, language and culture can exist and fully develop. There is also a broad community of people outside of Latvia with a sense of belonging to Latvia. Language and culture are uniting the Latvian society. Therefore, society and the state foster the Latvian language and promote the values of national identity.

Latvia is rich in strengthening sense of belonging to the culture of Latvia by its traditions—song and dance festivals for school children and adults, dancing and singing in different ensembles and clubs, making of ceramics and pearls of amber, celebrating of different festivals. Latvia is proud of its rich heritage of folklore and folk customs.

The Latvian language is the language for instruction and communication, signs, as well as written language. The Latvian is the native language of at least 1.5 million speakers in the world. At least half a million of people use Latvian parallel to their native language. The Latvian language counts as the 150th biggest language among the 6700 languages of the world. The Latvian is used by approximately 60% of residents of Latvia as the native language. In accordance with the ethno-demographic structure of the residents of Latvia and traditions, society in different functions (mainly in families) uses: Latvian, Russian, Ukrainian, Belorussian, Polish, Lithuanian, Estonian, German, Liiv, Latgalian and several foreign languages. The expansion of the individual bilingualism and multilingualism among Latvians and minorities of Latvia is growing. The State Language Policy of the Republic of Latvia is formulated in two important documents: The Guidelines of the State Language Policy for 2005–2014 and the State Language Policy Programme for 2006–2010.⁷

The State Language Policy Planning Document for 2015–2020, is adopted for strengthening the Latvian language in all spheres of social life. Ministry of Education and Science is increasing the role of the education system and culture in implementing the state language policy and creating the Latvian cultural space and forming a united society. It is planned to develop a new programme for minorities to ensure the acquisition of the state language in early years.⁸

⁶Specific Support to Latvia: the Latvian Research Funding System, available at: <https://rio.jrc.ec.europa.eu/en/library/specific-support-latvia-final-report-%E2%80%93-latvian-research-funding-system>.

⁷State Language Policy for 2005–2014, available at: <https://www.google.com/search?client=fir-efox-bd&q=ht10.State+Language+Policy+for+2005-2014>.

Available at: <https://valoda.lv/en/about-us>.

⁸Official Language Policy Guidelines for 2015–2020, Min.cab. No 630, 03.11.2014. Available at: <https://likumi.lv/ta/en/id/270016-on-official-language-policy-guidelines-for-2015-2020>.

10.1.8 Social Guarantees and Development

Latvia has one of the highest levels of income disparity among EU member states, with a Gini index of 34.5 in 2016. It is still one of the largest in the European Union. This situation has been created by policy decisions that promoted rapid economic recovery at the cost of social-security provision for at-risk population groups.⁹

The high emigration rate serves as a major indicator of marginalization and the lack of opportunity to remigrate. A total of 275,131 people left Latvia between 2006 and 2016. The annual emigration rate is decreasing now. The emigration, high mortality rate and low birth rate have led to a 12% decline in population over the past 10 years. The remigration programme has been worked out to return people back to Latvia (Central Statistical Bureau, Ministry of Economy).

10.1.9 The Relationship with China Under the “16 + 1” Cooperation Framework

The Suzhou Guidelines for Cooperation between China and Central and Eastern European Countries and The Medium-Term Agenda for Cooperation between China and Central and Eastern European Countries (2015) has put forward main directions for cooperation in different fields. China has defined three potential priority areas for economic cooperation: infrastructure, high technologies and green technologies.¹⁰

Latvia highly appreciates the “Belt and Road” initiative, and actively supports and participates in the “16 + 1 cooperation”. Latvia is also involved in cooperation for maritime affairs. Latvia was the first among countries in the Baltic Sea region that signed a document on cooperation with China on the Belt and Road initiative. It was a start of cooperation of both countries in the field of logistics and infrastructure construction. It helps to promote interconnectivity between Asia and Europe.

Being well aware of the considerable potential of cooperation, Latvia actively facilitates broadening of the scope of areas for joint activities between the regions in Europe and China. The Academic China and Latvia Centre in the frame of initiative Belt and Road was founded in University of Latvia in 2015. Two institutions—Policy Science Department of University of Latvia and North China Institute of Science and Technology develop the activities of this centre. Its aim is to promote the exchange

National Development Plan of Latvia for 2014–2020, approved by Saeima 02.12.2012. Available at: <https://www.google.com/search?client=firefox-b-d&q=national+development+plan>. Available at: http://www.sgi-network.org/2018/Latvia/Social_Policies.

⁹Available at: http://www.sgi-network.org/2018/Latvia/Social_Policies.

¹⁰The Suzhou Guidelines for Cooperation between China and Central and Eastern European Countries, available at: https://www.fmprc.gov.cn/mfa_eng/zxxx_662805/t1318039.shtml.

Available at: http://www.china-ceec.org/eng/zyxw_4/t1597367.htm.

Available at: <https://www.mfa.gov.lv/en/policy/multilateral-relations/cooperation-between-central-and-eastern-european-countries-and-china/the-suzhou-guidelines-for-cooperation-between-china-and-central-and-eastern-european-countries>.

of students and academic staff of these institutions, to develop common courses for studies. In 2018 the centre for the first time organized the first symposium to evaluate the potential possibilities of cooperation Latvia and China. University of Latvia has signed the Memorandum with Beijing Foreign Language University for future cooperation in the Latvian language teaching and learning as well as for exchange of staff and students.

Latvia has signed the Agreement to strengthen cooperation in the fields of trade, investment, transportation, logistics and tourism and people-to-people exchanges.¹¹

The amount of students coming from China to study in the institutions of higher education is increasing. It allows to make the conclusion that exchange of people is very fruitful for further development of the project.

10.2 Overview of the Educational Development

10.2.1 Education System and Policy

In 1211, Christian missionaries from Germany founded the first school in the territory of Latvia. From the thirteenth to the sixteenth century, German was almost exclusively the language of instruction. Schools first started providing Latvian-language education in the mid-to late-sixteenth century. The aim was to spread literacy among the Latvian serfs, to promote the development of religious literature, including the Bible that was translated into the Latvian language by Ernst Glük in 1689. In Soviet times education was in both languages—Latvian and Russian. These 2 languages were the languages of instruction.

Great reforms started in education in so-called Awakening period (eightieth) and to a certain extent already in the Soviet Union and especially when independent state of Latvia was renewed in 1991. Three stages can be identified in these reforms:

- democratization and decentralization of the system of education
- evolution of the legal basis for reform and implementation of it
- further development of the system of education after accession in order that a democratic, socially integrated society based on knowledge develops in Latvia as a member state of the EU.

The first Law on Education was adopted by the Republic of Latvia in 1991. It gave the way to the following changes: depoliticization of education, freedom of choice during the education process, creation of private education establishments.

It allowed to delegate the right to take decisions to municipalities and schools. It strengthened the autonomy of establishments of higher education, and partially decentralized the system for financing of education.

¹¹The Riga Guidelines for Cooperation between China and Eastern European countries, available at: <https://www.google.com/search?client=firefox-b-d&q=.+The+Riga+Guidelines+for+Cooperation+between+China+and+Eastern+European+countries%2C>.

The reforms were wide-ranging and affected all aspects and levels of the education system. They were rapid and quick based on great debate and discussions.

The change of paradigms took place in education—from centralization to decentralization: from teacher centred—to students centred approach; from teaching to learning (Bluma 1999, 2007).

An inclusive education was established in Latvia, promoting the development of socially inclusive society in the country. Since 2004, Latvia is a member of the European Agency for Special Needs and Inclusive Education.

During the changes, great attention was paid to teacher education, to create new understanding of teaching and learning.

Obviously, the curriculum for basic and secondary schools was changed greatly during the reform process, in particular, in the social and humanities. New text books and teaching materials were prepared. Standards for each subject were laid down with aims, content and assessment of the performance of pupils. New State Standard for basic education (1st–9th grades) practically completed the reform. Each teacher had a task to develop a teaching programme for his/her subject respecting the requirements set out in the standard. The teacher could use different forms and methods, but the aim of the standard had to be reached. The curriculum was continuously updated, and the standard for secondary education was adopted in 2013, and for basic education, in 2014. In 2016, revisions of curriculums started, the discussions were about the development of new competences including pre-school, basic and secondary education levels.

A new project “School 2030” was launched in 2017, financed by ESF. It is also called competence based Project.¹² The aim of the project is to develop, test and gradually implement the new content and approach to teaching that pupils could develop knowledge, skills and competences for living in the twenty-first century, to be ready to adapt to unusual situations, to make decisions for their lives. The project aims to work out new standards, guidelines, curriculum, learning materials, materials for teachers, including children with special needs, as well as instruments for diagnostics. To reach the aim the teachers learn to work together, to use different materials, test new approaches. 6000 teachers are involved in professional development management teams of schools. They learn to create new learning environment for students and teaching staff as well. The teachers have to change their thinking—they work in teams, in pairs and they guide the learning in the class, they notice every child and think about his/her development. Special attention is devoted to inclusion of every child in the learning for reaching the results set in standards. The big tasks are put forward for teacher education institutions to rearrange the study programmes according to competence driven approach. After hot and deep discussions (about 12,000 people participated) in 2018, the Government approved new regulation on the curriculum for integrated primary and lower-secondary education. The new curriculum will be gradually introduced in all schools from September 2020. Schools will be more autonomous in planning their teaching work, but at the

¹²ES Project “School 2030”, available at: <https://www.skola2030.lv/>.

same time more responsible for the results. The new curriculum will cover seven study fields:

- Languages,
- Social and civic,
- Culture awareness and self-expression,
- Natural science,
- Mathematics,
- Technologies,
- Health and physical activity.

It does not mean that the subjects will disappear, accordingly they will be integrated in the corresponding fields.

The following transversal skills have to be developed through curriculum such as:

- critical thinking and problem-solving,
- creativity and entrepreneurial skill,
- cooperation,
- civic participation,
- digital skills.

Great attention is paid to the development of most important values such as:

- responsibility,
- diligence,
- enterprise spirit,
- honour,
- wisdom,
- kindness,
- compassion,
- moderation and restraint.

The new curriculum will offer acquisition of digital skills from first grade. All students will learn programming in grades 7–9. Learning of second foreign language will start at grade 4. The new curriculum in schools will be introduced gradually.

Latvia's *Education Development Guidelines 2014–2020* put forward the medium-term challenges, priorities and solutions in the education system. The areas for action are grouped under three goals: education environment, individual skills and effective management, that does not contradict with the ESF project School 2030.¹³

The project “School 2030” is financed by ESF—6,000,000 EUR, which is the investment in the development of young generation. It is overall project encompassing all levels of education including pre-school education in which standards are confirmed and which will be introduced in practice in 2019–2020 study year.¹⁴

¹³Guidelines for the development of Education for 2014–2020. Available at: <https://rio.jrc.ec.europa.eu/en/library/guidelines-development-education-2014-2020>.

¹⁴ES Project “School 2030”, available at: <https://www.skola2030.lv/>.

The changes are also planned in the use of the Latvian language in ethnic minority schools. The Parliament of Latvia on March 2018 passed the final reading amendments to the Education Law and the Law on General Education under which education programmes of ethnic minorities will have to start gradual transition to Latvian-only upper-secondary education, creating necessary conditions for all upper-secondary students to be able to integrate in vocational and/or higher education institutions of Latvia in a more efficient way. The transition to the state language will happen gradually. In 2020/2021, all general subjects in grade 10 in general education schools will be taught in Latvian, and as of 2022/2023, all general subjects in upper-secondary education level will be taught in the state language, but ethnic minority students will continue study of their language, literature and cultural subjects in their family language. The Ministry of Education and Science will undertake support measures to improve the professional competence and state language skills of teachers working in minority schools. This new regulation on the language of instruction will provide the opportunities for ethnic minority youth in vocational and higher education, where Latvian is the language of instruction, as well as it will improve their competitiveness in the labour market.¹⁵

Lately great attention is also paid to adult education and non-formal education. Interest-related education as a part of non-formal education has stable traditions already from Soviet time. The most popular are clubs, circles, ensembles connected with cultural and sport activities, where the girls dominate the boys. Lately ICT technologies, robotics take a stable place for boys.

The education system in Latvia is highly decentralized. The MoES is responsible for drafting policy and legislation, as well as organizing and co-ordinating its implementation. Latvia has 119 municipalities responsible for providing ECEC, primary and secondary education closest to students' residences and non-formal education. Tertiary education institutions have autonomy to design education programmes, establish rules and regulations, hire staff and distribute the funding allocated to them. Almost all funding from primary to secondary level, including post-secondary non-tertiary education, comes from public sources. Compulsory education is free of charge, with the exception of pre-schools, where parents pay for school meals (although there are municipal subsidies for lower income families) (IMF 2013; OECD 2016a, b, 2017).

Education is affected by multiple demographic factors that have contributed to declining student enrolment numbers: such as rural-to-urban migration, immigration, low fertility rates and an ageing of population. Due to these factors, some schools in the countryside and even in big cities have been closed or reorganized. So the total number of general education schools has dropped from 824 in 2014/2015 to 790 in 2016/2017, as well as the number of vocational schools, from 63 to 51 (IMF 2013; OECD 2016a, b, 2017).

¹⁵Amendments to the Education Law and the Law on General Education, approved by government (2018), available at: <https://www.mk.gov.lv/en/aktualitates/government-supports-amendments-law-education-and-law-general-education>.

Characteristics of system of Education in Latvia¹⁶

Rights to Education

Every citizen of the Republic of Latvia, holders of non-citizen passports issued by the Republic of Latvia, citizens of European Union, European Economic Area countries and Switzerland, permanent residents of the European Community holding a residence permit for Latvia, stateless persons in possession of a travelling document issued by the Republic of Latvia, third country nationals or stateless persons who are in possession of a valid residence permit for the Republic of Latvia, persons having refugee or alternative status and persons who have received temporary protection within the Republic of Latvia have equal rights to education in Latvia.

Legislation

- Law on Education (1998)—a framework law containing definitions of all types and levels of education which defines general principles and determines competence of governing bodies.
- Law on General Education (1999)
- Law on Vocational Education (1999)
- Law on Higher Education Establishments (1995)
- Law on Scientific Activity (2005).

Governance of the Education System

The education system is administered at three levels—national, municipal and institutional. The Parliament (Saeima), the Cabinet of Ministers and the Ministry of Education and Science are the decision-making bodies at national level. The Ministry of Education and Science is the education policy development and implementation institution. It oversees the national network of education institutions, sets educational standards and determines teacher training content and procedures.

Tuition Fee

The tuition fee for pre-school, basic and secondary education in a state or municipality founded educational establishment is funded from the national or municipal budget. A private educational institution usually sets a tuition fee for providing education.

In higher education institutions the state covers tuition fees for a certain number of students' places, so called "budget places". Each higher educational institution has the right to set a tuition fee for the other students' places. At the same time any student has a possibility to take a state guaranteed loan for his/her studies in higher education programmes. A foreign citizen pays for his/her education fee in accordance with the agreement concluded with the educational institution.

¹⁶Available at: <http://www.aic.lv>

Available at: http://viaa.gov.lv/eng/information_networks/euroguidance_eng/education_in_latvia).

Available at: http://www.national-policies/eurydice/file/latviadiagram-2018-2019_enLatvia_Diagram2018-2019.

Pre-school Education

Children are involved in pre-school from the moment they start attending kindergartens. Pre-school education is available from the age of 1.5 years. It is mandatory to participate in pre-primary education programmes for five and six year old children who do not attend pre-school education institutions to be prepared for school. 2019–2020 is the first year pre-school educators will use the new standards worked out in the project, “School 2030”. These are completely new guidelines based on the development of competences.

Basic Education

9-year single structure basic education (primary and lower secondary education) is compulsory for all children from the age of 7 and is generally completed till the age of 16.

Assessment of Educational Achievements and Issued Documents

In primary school, in grade 1, knowledge and skills in all subjects acquired by pupils are assessed in a descriptive way without grades. Starting with grade 2, core subjects including the Latvian language, minority language and mathematics, but in grade 3 also foreign languages are assessed in a 10-point scale. But beginning from grade 4, pupils’ achievements in all subjects are assessed in a 10-point scale.

At the end of basic school students take centralized national examinations, and the number and content of these examinations is determined by the Ministry of Education and Science. Pupils having received assessments in all subjects of the basic compulsory education curriculum and the centralized national examinations receive a Certificate of basic education and a transcript reflecting their grades.

Special Education and Inclusive Education

Special education schools or special education classes, groups, individuals within general education schools provide education for children with special needs and different problems. Inclusive education, inclusive schools are of a special care of the state to guarantee the equal rights to everybody to get the adequate education. It is also stressed in the Guidelines for the development of education 2014–2020 as well as in ESF Project “School 2030”.

Secondary Education

There are two types of programmes at the secondary education level:

- academic secondary education programmes (without specifically emphasized subjects; with special emphasis on subjects);
- vocational secondary education and training programmes. (with special emphasis on specific vocational/professional areas (for example, in arts, music, business, and sports).

When completing academic secondary education programmes, students take centralized national examinations. The content and procedure of these examinations is determined by the Ministry of Education and Science, and approved by the Cabinet of Ministers. School leavers have to take at least 4 compulsory centralized examinations, where three subjects are determined by the Ministry of Education and Science, and one subject is chosen by the student himself/herself.

A Certificate of secondary education and a certificate of the centralized exams passed with scores are awarded to all students who have received a positive assessment in all the subjects including the chosen profile, and the national examinations. The two certificates give students the right to continue education in a higher education programme.

Vocational Secondary Education and Training

Studies in vocational education prepare learners for working in a specific profession. The National Vocational Education Standard and the Occupational Standards or qualification requirements as well as the sectoral qualifications framework determine the curriculum of vocational secondary education programmes. During studies great attention is paid to practice, thus learning in the working place.

Depending on the type of vocational education programme, all students who have successfully passed the final subject and qualification exams are awarded a diploma or certificate: a certificate of basic vocational education and training, certificate of vocational education and training, a diploma of vocational secondary education.

Higher Education

The study process in higher education is organized according to Bologna process and Laws and regulations in Latvia.

Each higher education institution has its own admission board and criteria. From the year 2004 entrance examinations are replaced by the results of the national centralized secondary education examinations. Higher education institutions have the right to set additional requirements concerning specific prior education or training, special aptitude or previous qualification (for example, in arts, music, sports). Two groups of programmes can be distinguished: academic programmes (based upon fundamental and/or applied science), leading to a bachelor's degree or master's degree and professional programmes, and leading to the qualification.

Tertiary education institutions have a certain autonomy to determine organizational procedures, establish internal rules and regulations, hire staff, distribute allocated funding and design programmes. Approximately 40% of higher education institutions (HEI) are private.

Postgraduate Education

A master's degree or the equivalent degree (graduates of 5–6 year professional higher education programmes in Law and Medicine can continue education at postgraduate level directly) is required for admission to doctoral studies (Ph.D.). Doctoral studies last 3–4 years full-time. They include advanced studies of the subject in a relevant study programme and scientific research towards doctoral thesis. Publications in

internationally quoted scientific journals, participation in conferences and seminars are required before public defence of the thesis.

Grading System

Educational achievements are assessed in a ten-point system: 10-with distinction, 9-excellent, 8-very good, 7-good, 6 -almost good, 5- satisfactory, 4-almost satisfactory, 3-weak, 2-very weak, 1-very, very weak.

Adult Education

Adult education that has old traditions in the history of Latvia with Folk Universities and different education centres are considered as a part of the system of education, in the frame of which people have the possibility to develop further personality, to satisfy personal interests and acquire new skills to stay in the labour market.

10.2.2 Enrollment Rate and Retention Rate

Enrolments by level of education (ISCED 2011)		
(At the beginning of the school year)		
	2015/2016	2016/2017
Enrolments	417,672	421,078
Pre-primary education (Level 0)	92,095	94,249
children aged 0–2 (including)	17,667	19,247
children aged 3–6 (including)	74,428	75,002
First stage of basic education (grades 1–6)	120,308	121,506
Second stage of basic education (grades 7–9 and vocational education)	56,128	56,282
(Upper) secondary education (grades 10–12 and secondary vocational education)	60,343	61,078
Post-secondary non-tertiary education	4516	5049
First stage of tertiary education (higher education)	81,972	80,623
Second stage of tertiary education (doctoral studies)	2310	2291

According to Latvia Statistics in Brief—2018, the total number of enrolments in education has increased. In 2016, 94.2 thousand children attended pre-school education institutions, which is the highest indicator recorded during the recent years. Most children attended local government pre-school education institutions, while 8 thousand or 8.5%—private kindergartens. The number of private pre-school education institutions has risen twice since 2010, and the highest increase was observed in Riga. It means that later the enrolment number could increase.

Worse situation is observed in higher education. Student number has dropped by 35% over the decade. In the academic year 2017/2018, 81.6 thousand students

entered 54 higher education institutions. Enrolment by field of education and training; at the beginning of the school year 2017/2018 demonstrates that the most favourite fields for studies are social sciences, business and law—34 (%), the lowest figure—agriculture—1.7% and education—7.3%.¹⁷

10.2.3 Government Expenditure on Education

Early Childhood Education and Care

Local governments own public pre-school education institutions and their establishments. They are responsible for salaries of teachers, administrative and technical staff, learning materials, maintenance of buildings and utilities. State budget is provided for the salaries of teachers providing compulsory pre-school education for 5-and-6-year olds. In 2016, the local governments became responsible for providing financial support to parents whose children between ages 1.5 and 4 and are not benefiting from public childcare in municipal ECEC institutions.¹⁸

Elementary and Secondary Education

Local governments own schools of general education at elementary and secondary level. At these schools, the wages for pedagogical staff are allocated from the state budget while the maintenance and utilities costs are covered through the local government budgets. Besides that state gymnasiums receive extra finances because they also fulfil other functions in the field of teachers' further education and regional centre of methodology.¹⁹

Latvia uses the funding model, “money follows the child”. It was introduced in school year 2009/2010.

General education schools are independent in:

- the development and implementation of education programmes,
- selection of employees,
- financial and economic activities, and
- other activities in accordance with the Law.

The Law on Education states that it is a head of a school who is responsible for the operation and performance of the school, as well as rational use of intellectual, financial and material resources.

Free lunches to all pupils from grade 1–4 are guaranteed by state in Latvia.

Another form of support for students and families are the EU co-financed programmes such as: “School Fruit Scheme” and “European School Milk Scheme”,

¹⁷Latvia. Statistics in Brief 2018(CSB).

¹⁸The Education Law, available at: <https://likumi.lv/ta/en/id/50759-education-law>

Law on Budget and Financial Management, available at: <https://www.google.com/search?client=firefox-d&q=Law+on+Budget+and+Financial+Management>.

¹⁹Ibidem.

that provide children with fruit, vegetables and dairy products free of charge three times a week.

The state provides all necessary finances for schools established for children with special needs, boarding schools, schools and classes of social correction.

Vocational Education

The state directly supervises and provides funding for vocational schools. It is foreseen to pass vocational schools owned by the state to local governments after the regional reform is completed. So far as schools remain owned by the state, they are financed through the responsible ministries—Ministry of Education and Science, Ministry of Culture and Ministry of Interior Affairs.

Higher Education

In 2015, the Cabinet of Ministers endorsed a new model for financing tertiary education, proposed by the World Bank, to increase its quality, internationalization and labour market relevance. The new model is based on three pillars that aim to provide balance between stability, performance and innovation. This model combines stable core funding with two additional funding allocations based on performance and innovation (World Bank, 2014).

Overall, public expenditure on tertiary education is low and spread over a large number of institutions. With a population of just two million, Latvia has 58 accredited higher-education institutions, including both the public and private sectors. The country exceeded the EU 2020 education target of 40% of 30–34-year-olds holding university-level qualifications. In 2015, the ratio of 30–34-year-olds holding university-level qualifications was 41.3%, up from 39.9% in 2013. The IMF has warned that the current system is unsustainable due to a disproportionately high number of institutions, limited financing and falling student numbers. In 2017, the Bank of Latvia recommended a drastic reduction in the number of higher-education institutions, from 56 to 20, as well as a reduction in the number of study programmes, from over 900 to less than 500. In 2016, the government reformed higher education financing, focusing on improving salary levels for teachers. These reforms have been met with substantial resistance but are still being implemented. The physical and communication infrastructures of 29 institutions were modernized between 2011 and 2013, supported by public funds in the amount of 65.3 million LVL. In 2014, the World Bank published a study that, among other things, analyzed financing models for higher education (World Bank 2014).

Higher education institutions in Latvia are funded through different sources, including state funds, student fees, EU structural funds or other sources of international funding. Some 31% of expenditure at tertiary level came from household funds in 2013 (above the OECD average of 21%). Higher education institutions can also receive donations and grants from individuals and other private entities. The number of state-funded places is decided yearly by the MoES according to the Law on Higher Education Institutions. The decision is based on the demands of the labour market and in accordance with the long-term strategy of the Latvian economy. In the 2014/15 academic year, 40% of students were state-funded, while 60% paid tuition

fees. Some areas of study, including natural sciences, ICT, engineering and mathematics, have recently been targeted for more allocation of state funds. Private higher education institutions are free to set their own tuition fees, although they can receive state funding in certain agreements with the Ministry (OECD 2016a, b, c, 2017).

10.2.4 Teachers' Professional Development

Initial Teacher Education

The teachers are educated in accordance with the two main models of teacher education: integrated/concurrent and consecutive. Both the models correspond to the basic trends and requirements of modern teacher training in Europe. Some universities implement both models, for example, University of Latvia implements the integrated model of teacher education. In this model the students are linked to educational establishments already from the first study year through the observation practice. The studies in the integrated model are organized in an interdisciplinary mode. Students have an opportunity to master both the subjects of pedagogy and psychology closely linking the acquisition of these subjects with the specifics of teaching methods of the particular subjects that are chosen for the specialization. The subjects to be taught at school are acquired from the point of view of the future profession. For instance, the education of the future teacher of the Latvian language is not directed towards the broad academic philological studies but more the mastering of the basics of those branches of science which will be necessary in their everyday teaching work. Thus students are centred on acquiring the applied linguistics, intensive mastering of the teaching/learning methods. They are directed to observation and doing. The active teaching practice is integrated in the whole process of studies. After successful studies in the integrated model, the student is awarded the professional bachelor's degree in education sciences and the qualification of the teacher of the specific subject. The studies take 4 years.

During the second model—consecutive model—the students first acquire the bachelor's degree in the specific branch of science within 3 years of studies. In this case, the student has a possibility to continue his/her studies in the professional programme for a year, a year and a half, two years. During that time the student masters the subjects of pedagogy and psychology cycles, the methods of teaching of the specific subject, carries out the teaching practice. As a result of the studies the student receives the teacher's qualification of the respective subject. The latest trend in Latvia is that in the second cycle of studies after the consecutive model the student is also awarded the master's degree in educational sciences. The length of these programmes is half a year or a year longer if compared with the professional programmes.

Professional Development of Teachers

Professional development is defined as activities that develop an individual's skills, knowledge, expertise and other characteristics as a teacher. The definition recognizes that development can be provided in many ways, ranging from the formal to the informal. Continuing professional development (CPD) is mandatory in Latvia for teachers at all education levels. Teachers themselves are responsible for acquiring the in-service training at least 36 h in three years' period. Usually teachers are planning CPD in cooperation with the head of the school and according to teachers' needs and interests. At the same time, it is possible that CPD can be credited within 12 h of self-development and experience modules that includes seminars, conferences, in formal adult education programmes. CPD programmes are divided in type A and type B programmes. CDP programmes A are ensured by education institutions, teachers' professional NGOs, institutions subordinated to the ministries. Usually A programmes consist of modules where the choice is given to the teachers—to form the training from different programmes. Amount of a module is at least six hours, both including theoretical and practical parts. Five modules are offered to develop:

- general competences of teacher
- education content and didactics
- management of education process
- teacher's self-development
- teacher's experience (participation in conferences, seminars, master classes etc.).

Cabinet of Ministers has approved Regulations on the Necessary Academic and Professional Qualifications of Pedagogues and Professional Competence Development Procedures for Pedagogues. This document defines the procedure of CPD for teachers.²⁰

Type B programmes are offered to teachers willing to teach in future the other subject or to work in the other level of education. Training amount of type B programme is at least 72 h. Developers and implementers of B type programmes are initial teacher educating institutions. In both cases teachers receive a certificate after mastering of the A and B type programmes.

CPD training is not fully financed from the state budget, but most municipalities cover these costs at least partly. Many courses of CPD are paid by teachers themselves especially in the cases when teachers wish to attend the courses in the different field not concerning the subject taught in school.

²⁰Regulations on the Necessary Academic and Professional Qualifications of Pedagogues and Professional Competence Development Procedures for Pedagogues (2018) Cabinet Resolution No. 569 of 11.09.2018, prot. Nr. 42 14. §.

10.3 New Progress of ICT in Education

10.3.1 *Different Aspects of the Use of ICT in General Education*

Information technologies are tools that are used or created to address issues of interest and needs to wide range specialists practically in all fields of the state. Because of that there is a wide range of participants of smart specialization area “Information and Communication Technologies”, which can be divided into five subgroups: (1) Educational institutions, (2) ICT enterprises and companies of other sectors, (3) Scientific institutions, (4) Industry associations and (5) Other organizational structures.

Already in 90 s, there were heated discussions about the use of ICT in education. Even in that time the educators spoke about several aspects: how to develop skills to work with ICT, how to learn to use ICT in real life.

The initial plan envisaged equipping schools (mainly secondary schools) and institutions of higher education with computer sets, and training teachers and university faculty. A new subject-informatics was introduced in secondary schools. A new syllabus was designed, textbooks and study aids were published. Teachers of mathematics and physics were the first to be trained and attached to the teaching of informatics in schools. It was a new subject in school curriculum.

ICT integration in education system of Latvia is analyzed taking into account results of international comparative educational studies (IEA COMPED and SITES). The introduction of ICT into the curriculum of other subjects started as well. The teachers were confronted with a task to acquire skills to work with ICT and to use ICT in the class. These were 2 big tasks for teachers and for staff in higher educational institutions as well (PISA 2012).

Technologies have developed very rapidly, which are quite difficult for elderly generation to follow the development of them as well as to master skills to work with them.

With increasing digitalization and more flexible work forms, 90% of future workplaces will require digital skills, but nearly half of Latvia’s population do not have sufficient skills in this area.²¹

At the same time, the Eurobarometer data for Latvia show that self-evaluation of digital skills for daily tasks and work is significantly higher than DESI indicates. 79% of the respondents consider that their digital skills are sufficient for daily tasks, 85%—their skills are sufficient for their current job.

²¹ Available at: http://www.tvnet.lv/tehnologijas/internets/653079-37_eiropas_iedzivotaju_darbस्पेजга_vecuma_klibo_digitalas_prasmes;

Digital Economy and Society Index (2017)—Latvia. available at: http://ec.europa.eu/newsroom/document.cfm?doc_id=43022.

Special Eurobarometer 460 “Attitudes towards the impact of digitization and automation on daily life”, May 2017.²²

ICT in educational establishments are used very widely for:

- developing of data base (staff, students)
- preparing documents
- organizing and managing of study process (e-class)
- developing learning materials
- making different presentations, video, movies
- communicating, getting of information, e-mailing
- projecting, using internet-bank, playing games
- listening to music
- reserving different services.

Currently education system reforms in the frame of ESF “School 2030” are taking place in Latvia. It also obviously affects the digitalization of education. Now the content developers suggest to pay greater attention to the mastering of Informatics. According to these suggestions, the students will start to master informatics in the integrated way already from grade one but as a separate subject starting from grade four till the end of basic education. The aim of the acquisition of the ICT skills is to teach to understand how these skills can be used in different real situations, in different subjects, how to develop presentations, how to carry out data processing, how to develop videos, etc., Because of that great attention is paid how the teacher guides the understanding of the students and the development of ICT skills for the reasonable use of technologies in other subjects, at home and during out of class activities. At the same time teachers have to think over tasks for developing understanding of safety in the internet as well as the personal etiquette of the use of internet. There are big tasks put forward for every subject teacher to make lessons more interactive, catchy by using different ICT and learning materials. Different ICT tools are being used in special education schools according to their specific needs. Special learning materials are being prepared for more successful studies as well as for teachers for better guidance of the students. In the frame of ESF projects, ERASMUS + activities different learning games are being prepared for mobile use.

It is worth mentioning that there are distance education schools in Latvia. The average age of the student is from 12 to 45. The studies are organized in virtual environment ensuring the support system in both ways—face to face and virtually. This is a good opportunity for emigrant families if they wish their children to study in the Latvian language. This is also the opportunity for those who has dropped out of school for different reasons. Great attention is being paid to the use of ICT tools in non-formal education. Thus in interest-related education different circles, groups, activities are offered based on ICT—such as robotics, informatics, programming, designing, video and film making. It gives an input in organizing of leisure time

²²Special Eurobarometer 460 “Attitudes towards the impact of digitisation and automation on daily life” (2017). Available at: <https://www.google.com/search?client=firefox-b-d&q=special+eurobarometer+460>.

for students to avoid useless playing of Internet games. Schools and families work together to reach the balance of useless game playing and learning. The platform, “Drošs internets” (Safe Internet) is very helpful for children and parents to learn about safety problems in internet. In all these processes, the teachers play a decisive role. Different new programmes on different levels, modules, courses, seminars, conferences, discussions are used to educate teachers in the field of reasonable use of ICT tools in preparing lessons, learning materials, parents’ meetings, out of class activities, etc.

It is possible to conclude that smart pedagogy is developing very rapidly to promote the development of new technology rich learning environment.

10.3.2 ICT in Higher Education Institutions

Higher education activities in the field of ICT are directed in several directions. Information technologies may be acquired in 25 state-funded and private educational institutions.²³

All educational institutions are included as key participants of the smart specialization area of information and communication technologies due to the following reasons:

- there is an acute shortage of and growing demand for employees of different levels of qualification in IT development, education and science;
- the necessity to develop specialists for ICT in education and science, that is of utmost importance.

Courses of Informatics are practically included in all study programmes to develop further ICT skills accordingly to specific needs of the future qualification. Due to reforms in education now (School 2030), new programmes are being developed to equip teachers with the latest tendencies of the use of ICT in the teaching and learning process.

Professional certification is an important form of education in the field of ICT. It is possible to get the following certifications in the cooperation with international organizations:

- Certification of IT professionals—Adobe, Cisco, IMB, ITIL, Microsoft, Oracle, Apple, Testing, Linux, Lotus and many others
- Certification of IT users—ECDL basic, ECDL start, e-Citizen, ECDL Advanced,
- Project management certification—PMP and others.

Technologies have influenced the whole learning process in higher educational institutions. It has moved from content-centred, from teacher-centred to student-centred approach, to competency and result-based curricula. The use of ICT by

²³Detailed information available in the National Educational Opportunities Database (<http://www.niid.lv/>).

teaching staff and students promote the development of learning skills that are the key words for the twenty-first century.

Teaching staff in Universities systematically develops support system for students, including virtual learning materials, learning platforms, project-based tasks, developing tasks according to specialization. Every higher educational institution has the right to choose the virtual learning platform. International scientific data bases are available for practical use during the studies. Students are also offered virtual, distance education studies supported by detailed learning materials and prepared staff to work online.

Higher educational institutions offer also courses for the development of ICT in different sectors. Special courses are organized for higher educational staff to develop ICT skills for work in the auditoriums, designing learning materials, managing organizational activities in the institution.

Every higher educational institution has digitalized the management of teaching and learning process where students and staff have certain responsibilities.

There are 13 scientific institutions in Latvia operating in the field of computer sciences and information technologies, which carry out research, participate in different projects, organize courses and cooperate with educational establishments and industry.

It is worth mentioning that 12% of all projects approved under the “Horizon 2020” programme are in the field of ICT, including 10% in the ICT higher education and business sectors.

10.4 Policy and Strategy of ICT

The government together with different institutions considers the acquisition of ICT skills as an important factor to live and work in the contemporary society, to compete in the labour market, to reach the personal aims and to guide personal life in a happy family. Latvia recognizes the importance of digital skills and is taking action to reduce skills gaps in order to make Latvia’s private and public sector efficient and competitive. The below mentioned documents confirm it.

Sustainable Development Strategy of Latvia until 2030 and National Development Plan 2014–2020 includes intentions to promote a digital learning environment, improve e-services and promote digital skills through lifelong learning.²⁴

EU-level initiatives such as Council Recommendations on Key Competencies of Lifelong Learning and Digital Education Action Plan have found its reflection in the mentioned document.

Information Society Development Guidelines 2014–2020, was developed to determine priorities of the ICT field for EU Structural Funds, with the aim to

²⁴Available at: <https://en.unesco.org/creativity/policy-monitoring-platform/latvia-2030-sustainable>.

build a knowledge-based economy.²⁵ The Action Direction “ICT Education and E-Skills” includes the following activities: public awareness and readiness to use E-opportunities; development of E-skills of the population and entrepreneurs; increase of ICT competencies in public administration; preparation of ICT practitioners according to the requirements of the labour market; and promotion of algorithmic thinking and information literacy in educational programmes.

“Guidelines for the Development of Education 2014–2020” envisages activities for mastering of ICT skills in all stages of education through developing study materials and training teachers, as well as improvement of digital skills through lifelong learning programmes.

“Adult Education Governance Model Implementation Plan 2016–2020” stresses the development of digital skills for all citizens during their lives. State Education Development Agency is currently implementing an ESF project “improvement of professional competences of employed persons” in which the greatest attention is focused on the development of ICT skills.²⁶ “Guidelines for Inclusive Employment 2015–2020” foresees digital skills as priority skills to be acquired through training of unemployed persons and job seekers.²⁷

Latvia’s Information and Communications Technology Association (LIKTA) unites leading industry companies and organizations, as well as ICT professionals to promote the development of information society and ICT education. LIKTA also coordinates the national Digital Skills and Labour coalition and implements targeted training projects, for example, ERDF project “Training of Small and Micro Enterprises for the Development of Innovations and Digital Technologies in Latvia”. Due to reasonable policy and optimism of work of ICT researchers and staff, Latvia has reached the following results: fast and accessible internet—6th the fastest internet in the world, 4th lower priced high-speed internet in the EU, wide covering of free WiFi network. People of Latvia are active users of e-opportunities: 75% use internet at least once a week, 5th place in the EU; news reading, 6th place in the EU, and internet banking users (81%). Digital access has been reached in state, municipal and public utility services.

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²⁵Guidelines for the Development of Science, Technology and Innovation 2014–2020 (Cabinet Resolution No. 685 of 28.12.2013).

²⁶Adult Education Governance Model Implementation Plan 2016–2020, Min.cab.Nr.287, 05.05.2016., prot. Nr. 21 35. §, available at: <https://likumi.lv/ta/id/281992>.

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²⁷Guidelines for Inclusive Employment (2015–2020), available at: <https://www.google.com/search?client=firefox-b-d&q=Guidelines+for+Inclusive+Employment>.

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