

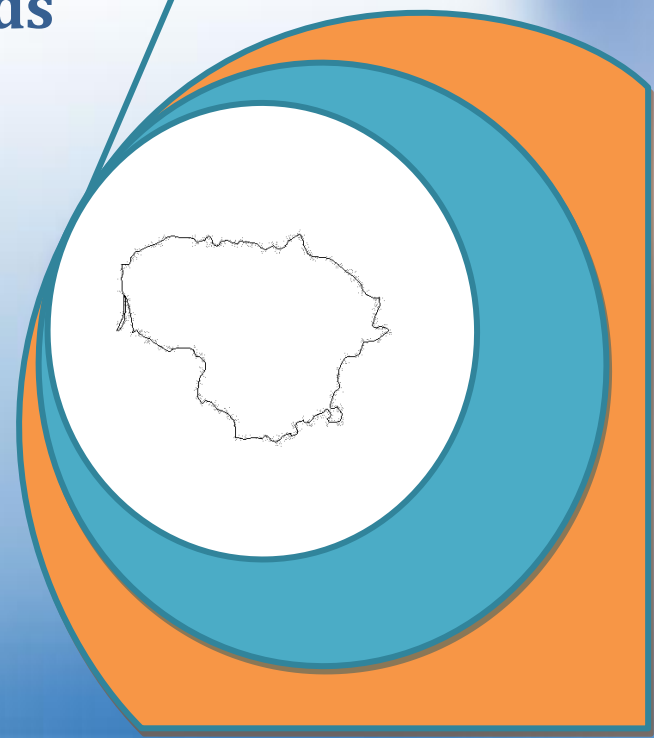


National overview of educational system and needs for natural sciences' in Lithuania

Leonardo da Vinci Project – GenExis



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1. GENERAL DESCRIPTION OF EDUCATIONAL SYSTEM

1.1. INTRODUCTION

1.1.1 MAJOR OBJECTIVES FOR EDUCATION IN LITHUANIA BY 2012

Major objectives of Lithuanian educational system are defined in the Lithuania's Law of Education and in Lithuania's Long Term Education Strategy 2003-2012. In the Lithuania's Law of Education the main principles, structure, activities of education system and main obligations of the state are defined.

Lithuanian educational system is based on the following principles (Lithuania's Law of Education):

- **Principle of humanism and equality.** According to this principle, every person, every individual is equal and valued, as well as his/her choice liberties and responsibility.
- **Principle of democracy.** According to this principle, values of democracy are at the base of life, democratic relations are important in educational sphere.
- **Principle of nationality.** Nationality is important as a part of obligations for Lithuanian culture, identity and history; Lithuanian educational system cherishes country culture, enriched by national minorities' experience and culture.
- **Principle of renewal and continuity.** Lithuanian educational system is open to changes and novelties, keeping universal ethical norms and nationality at the core.

General aims of Lithuanian educational system are (Lithuania's Law of Education) related with educating and instill the values which enable to become an independent, responsible, patriotic-attitude and honorable man, helping to get awareness of contemporary culture, social competence and other important skills, helping individuals to identify creative abilities and help to gain the professional competence and qualification according to contemporary level of technologies, economical situation and conditions, ensuring the quality of human resources, giving the preconditions to individuals to gain and develop the abilities and experience necessary for living in the contemporary knowledge society.

Lithuania's Long Term Education Strategy 2003-2012 defines more concrete goals for educational system. According to this strategy, by the year 2012 the following aims will be reached:

- universally accessible, quality, modern education compatible with the needs of an individual as part of an open civic society and market economy.
- all children have equal opportunities to prepare for school.
- all children have a socially just learning environment.
- at least 95 % of children receive quality basic education.
- at least 95 % of children with basic education stay within the system of education and receive secondary education or a vocational qualification in demand on the labor market.
- all children with special needs have an opportunity to learn in a friendly environment.
- at least 60% of youngsters receive quality higher education.
- at least 85% of Lithuanian population of employable age have a real opportunity and ability to use information and communication technologies (ICT).
- the Lithuanian population has real opportunities to engage in lifelong learning.

1.1.2 ADMINISTRATION OF EDUCATION AND MAIN REGULATORY DOCUMENTS

The aim of administration is to ensure the quality of education. According to Lithuania's Law of Education, educational system is administered by the following bodies:

- Government and ministries (Ministry of Education and Science), counties' manager's administrations';
- Municipalities;
- School founders;
- School managers.

Centralized administration is not for the process of education, but for the result, i.e. state regulation is for qualification standards, requirements for educational programs, qualification requirements for teachers, etc. The actors of every level are responsible for the proper functioning of the formal educational system in terms of their competence.

The role of **the Government** is to execute the national policy in the areas of education, science and studies, coordinates the activity of Ministry of Education and Science and other ministries on educational issues, founds, restructures and liquidates stakeholders of educational institutions, assigns drafting the educational strategy to subordinate institutions and is responsible for the implementation of educational strategy and governmental program in the area of education.

The role of **the Ministry of Education and Science** is to formulate and execute national policy in the area of education, be responsible for the quality of education, draft the strategic plans and annual programs, lend the proposals related to the improvement of law and other legalities, organize and coordinate the accreditation of secondary, vocational and higher education study programs, organize the graduate exams, coordinate the activity of municipalities and counties' manager's administration, approve general content of teaching, training and studies, national standards for attained educational levels (except higher education and PhD studies), incl. vocational training standards, etc.

The County Manager's Administration implements the national educational policy in the county, approves strategic education plans and annual programs for the county, analyses common condition of education in the county, supervises the activity of subordinate providers of education, forms the network of schools for children with special needs and ensures the teaching process of children with special needs, informs the ministry about the conditions of education in the county, etc.

The role of **Municipalities** and authorized institutions is to implement the national educational policy in the municipality, approve the strategic plan of the municipality and annual activity programs, to found, restructure and liquidate the educational departments, to form the network of pre-schools, primary, basic, secondary schools, ensures the environment to provide compulsory education, initiate the formation of schools network providing adult and vocational education, found, restructure and liquidate the bodies providing help to children, teachers and schools. Authorized institutions analyze the state of education, ensure the execution of national policy, executes the certification of school principals, organize the examination after basic school and graduate exams; provide information to ministry, other state institutions and society.

The role of **school founder** is to ensure the execution of national policy and keeping the relevant laws, organize the legislation of the school activity, and ensure the operation of school and democratic

management, etc. Usually secondary schools are governmental and municipalities play the role of the founders, but private individuals or organizations can be the founders of such schools. The founder of governmental vocational schools is the Ministry of Education and Science.

The role of **school manager** is to ensure the execution of the strategic annual plan of the school, as well as to lead, approve school educational programs' preparation and ensure it's the execution. School manager according to the regulation assigns and discharges teachers and other persons of educational process, analyses school activity and resources, is responsible for the results of school activity, etc. Every school may have the body of self-governance which is composed of a number of teachers, other employees, children and their parents.

Major regulatory documents of Lithuanian Educational System are:

- Law on Education (issued in 2003);
- National Education Strategy 2003–2012 (issued in 2003);
- General programs and standards for attained education levels (are renewed every four years);
- Law on Vocational Training (issued in 1997, amendments are underway);
- Law on Non-formal Adult Education (issued in 1998);
- Law on Special Education (issued in 1999);
- Law on Higher Education (issued in 2000);
- Law on Science and Studies (issued in 2002).

Vocational education is governed by Law on Education, Law on Vocational Training and General programs and standards for attained education levels.

1.1.3 FINANCING OF EDUCATION

Lithuania's educational system is financed by several sources:

- In the form of allocations from the State budget and municipal budget
- Other financial means.

Allocations from state budget are assigned for investment purposes (renovation, construction, human resource development, etc.) according to certain programs. Allocations from municipal budget are assigned according to programs approved by municipal council. Among other financial sources may be: funding acquired from international and foreign funds and organizations, confessional communities funding, shareholders contributions, studying fee, other legally acquired finances.

Programs of formal education in state, municipal and non-state and schools, except higher education are financed by state and municipal funding according to a principle of allocation of financial means per child. Vocational schools are funded by their stakeholders'. In state schools pre-primary, primary, basic, secondary, vocational and advanced vocational study programs are provided free of charge. Every year the Seimas allocates money from the State budget to State-funded higher education institutions. These allocations are related to respective programs and the results of assessment of activities of a particular higher education institution. Percentage of GDP allocated for education: 5.4% (2008).

1.1.4 STATISTICAL DATA

The statistical data about the number of the schools for the period of 2007-2008 are the following. There are:

- **1 420 schools of secondary education.** 85 of this number are state funded, 1 308 – municipal and 27 are private, non-state funded.
- **95 vocational schools and centers,** among this number there are **80 vocational schools,** 78 of this number are state-funded, 2 non-state funded, and **15 centers of vocational training,** 10 of this number are state-funded, 5 non-state funded.
- **49 institutions of higher education.** Among this number of higher education institutions there are **27 colleges,** 15 are state-funded, 12 non-state funded, and **22 universities,** 15 state-funded, 7 non-state funded.
- **905 educational establishments providing additional education and establishments of non-formal education for children.** 12 of this number are state-funded, 835 municipal, and 58 non-state funded.

1.2. EDUCATIONAL SYSTEM

The educational system in Lithuania is comprised of:

- formal education (primary, basic, secondary, vocational, advanced vocational, and higher education)
- informal education (preschool, pre-primary, and other informal children and adult education)
- self-education
- aid to children (informational, psychological, social and special aid, and health care at the school)
- aid to teacher and school (informational, consulting, competence improvement and other).

Formal education is organized according to approved study programs. Under the ISCED 97 classification, educational system may be divided as follows:

- ISCED 0. This level does not belong to the formal educational system; anyway, preschool and pre-primary education belongs to this level.
- ISCED 1. Primary education.
- ISCED 2. Basic education.
- ISCED 3. Secondary education.
- ISCED 4. Postsecondary/vocational education.
- ISCED 5. Advanced vocational and higher education studies.
- ISCED 6. Doctoral, residence studies and postgraduate art studies.

Start date of a school year is September 1 and it lasts until May 30 (for younger schoolchildren) or June 30 (for elder schoolchildren and students). Usually school holidays in a secondary are in autumn (one week), during Christmas period (two weeks), on Easter (one week) and during summer (at least two months). In higher education and vocational training institutions holidays are on Christmas and during summer. Achievements are assessed on 10 point scale since the 5th grade. The teaching language usually

is Lithuanian; anyway, ethnic minorities can choose a school with other teaching language: Russian, Polish, Belarusian and other. In higher education institutions teaching language is Lithuanian, except a few specific study programs which are fully in English, Russian, German or other language.

The scheme and detailed description of every level are presented below.

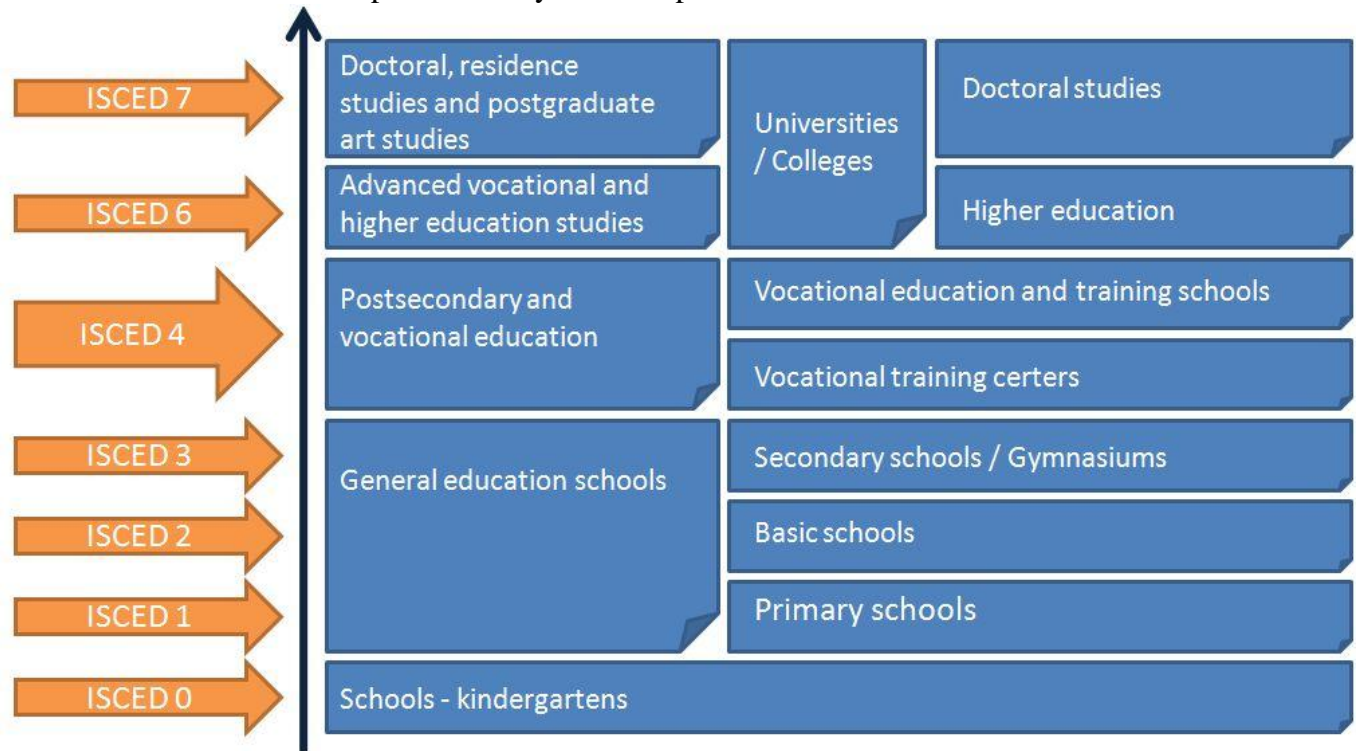


Figure 1. Lithuania's educational system

1.2.1 ISCED 0 – Preschool education

Preschool education is not a part of a formal educational system and is not compulsory. It is provided for the children from age 1 to 5(6) years old. The purpose of the preschool education is to help a child satisfy inherent cultural (including ethnic), social and cognitive needs. It is implemented by nursery schools, kindergartens, kindergarten-schools, freelanced teacher and other licensed education providers.

Pre-primary education is a part of this level as well. Pre-primary education is provided for children of 5-6 years old. The aim of pre-primary education is to help a child to prepare for successful learning according to primary education curricula. Pre-primary education is not compulsory. It can be implemented by kindergartens, kindergarten-schools, primary schools, freelanced teacher and other licensed education providers.

1.2.2 ISCED 1 – Primary education

According to Law on Education, **primary education** is compulsory for every child who is 7 years old. It may be provided for younger children upon the request of parents if the child is matured enough. The aim of primary education is to provide an individual with the basics of moral, cultural and social maturity and elementary literacy and help him to prepare for learning according to basic education curricula. Primary education may be provided by kindergarten-schools, primary and other schools.

1.2.3 ISCED 2 – Basic education

Basic education is provided for children who have a primary education certificate. The aim of basic education is to provide an individual with the basics of moral, socio-cultural and civic maturity, general literacy and the basics of technological literacy, to foster the intent to continue learning, etc. Basic education curricula consist of two parts. The first part comprises a four year education curricula, and the second part – two years curricula. Basic education curricula or a part of it is provided by basic, secondary schools, gymnasiums, youth schools, vocational and other schools. Youth schools are designed for children of 12-16 years who have some socialization and other learning difficulties in an ordinary school.

1.2.4 ISCED 3 – Secondary education

The aim of **secondary education** is to assist a person in the acquisition of general academic, socio-cultural and technological literacy, moral, national and civic maturity, and the basics of vocational competence and/or qualification. It is provided for those who have the certificate of basic education. A secondary education curriculum is two years and it may be provided by gymnasiums, secondary schools, vocational and other schools. Children who have completed the secondary education curricula take the graduate (maturity) exams. These exams are of two levels: school level and national level and it is necessary if a child plans to enter a university, other institution of higher education or advanced vocational institution. Secondary education may be provided by vocational training institution together with a vocational qualification.

1.2.5 ISCED 4 – Post-secondary studies and vocational training

The aim of **vocational training** is to help a person to gain, change and improve the qualification and prepare to participate in a labor market. Vocational training is divided in two parts: primary and extended. Primary vocational education is provided for schoolchildren together with secondary education or for children who have a certificate of basic education and want to gain the vocational qualification. Extended vocational training is provided for those who already have a primary qualification and is designed to improve the existing or gain another vocational qualification. Vocational training is delivered by vocational schools, gymnasiums or other licensed educational institutions. The duration of vocational training studies depends on a level and may take 2-4 years.

The purpose of **post-secondary** studies is to assist a person in attaining a post-secondary education level and acquiring a particular qualification, also in preparing for participation in the labour market and civic

life. Post-secondary education is provided to persons who have attained a secondary level of education and are able to study independently. Until 2003 post-secondary education institutions were able to deliver non-university curriculum modules which meet the requirements of study curricula of the first stage of sequential studies at schools of higher education. Now this is shifted to another type of schools – colleges. Post-secondary education is provided by post-secondary schools and other licensed institutions. A post-secondary education level is attained and a qualification is acquired upon completion of the post-secondary study curriculum and defending a final thesis (project) and/or passing final examinations.



Figure 2. Scheme of Vocational training

1.2.6 ISCED 5 – Higher education

The purpose of **higher education** is to assist an individual in the attainment of a higher education level and acquisition of a respective qualification as well as in preparing for an active professional, social and cultural life. This level of education is available for persons who have attained a secondary education level and are able to study independently. Higher education studies are of two types: university studies and non-university studies and are implemented by schools of higher education: universities, academies provide university studies and colleges provide non-university studies.

Non-university studies are undergraduate studies focused on practical activities. The graduates obtain vocational qualification. Duration of non-university studies is 3-4 years.

University studies are organised in three stages. First stage studies are undergraduate studies. It lasts 4 years. The graduates obtain Bachelor degree or/and a vocational qualification. Those who have a Bachelor degree may continue their studies of a second stage. Second stage studies are of two types: specialised studies and Master studies. The duration of specialised studies is 1-1.5 years; the graduates obtain the professional qualification (e.g. Dipl. Eng.). The duration of Master studies is 1.5-2 years; the graduates obtain the Master degree. The third stage studies are doctoral studies and it is described in the next section.

1.2.7 ISCED 7 – Doctoral, residence studies and post-graduate art studies

Doctoral studies, residence studies and post-graduate art studies are the third cycle studies provided by universities. Doctoral studies are designed to train the researchers. Individuals who have a Master degree may continue their studies as doctoral students. Duration of doctoral studies is 4 years. At the end of studies a student has to present his doctoral thesis, defend it in a public session, and after he/she is awarded with the Doctor's degree.

Residence studies are designed specifically to help to prepare for independent practical activity for individuals who have obtained respective qualifications in the subject areas defined by the Government (e.g., medicine, deontology, veterinary medicine, etc.). The duration of residence study is 2-6 years.

Post-graduate art studies are designed to train art teachers for higher education institutions and facilitate the specialization of artists. The duration of studies is 2 years. Students must work on, develop and present an art project. After it is presented and defended the qualification degree of Art Licensee is awarded.

2. MANAGEMENT OF ICT

Implementation of ICT (information and communication technologies) is one of the key priorities of Lithuanian educational system. ICT are considered to be important not only in the sense of modernization, but as a mean of effective teaching and learning and as a catalyst for social development. After the Restoration of Independence in nineties situation with ICT in schools was quite bad: one computer for almost 300 children. In 1996 the Ministry of Education and Science has started the project for Implementation of ICT in secondary, vocational and advanced vocational schools. Total value of this project was app. 24 million Lit. Another stage of this process begun in 2001-2004 and was related to an intensive implementation of ICT in schools. It was done in relation to a new Strategy of ICT Implementation in Schools. This strategy was approved in the end of 2000 by the Ministry of Education and Science. During this period schools were provided with a necessary number of computers and teachers improved their competence in ICT field. The result was impressive: one computer per 17 children in a secondary school (in 2004) and about 50 percent of secondary schools had online internet connection. The third period has started in 2005 with the new Program of the Implementation of ICT in Lithuanian Educational System for 2005-2007. The program was approved by the Ministry of Education and Science. There was foreseen the modernization of education management creating the network of computers and the main attention paid to the quality improvement of the educational process using ICT.

As a result of the above mentioned actions, in 2006-2007 academic year in secondary schools the number of computers per 100 children was 6.5 and more than 95 percent of secondary schools had online internet connection. According to the data of the Ministry of Education and Science more than 64 percent of secondary school teachers used internet for subject teaching, mostly in chemistry (95.5 %), physics (94.4 %) and history (78.8 %).

In the schools of vocational education since the year 2002 number of computers has almost doubled: in 2002-2003 academic year there were 3.2 thousand computers, in 2006-2007 academic year – 6.2 thousand computers. Almost 90 % of this number was connected to the internet, and more than 60 % were used for

teaching purposes. Total number of computers used for teaching purposes in vocational schools per 100 students was almost 9. Data about situation with IT in professional colleges is not available as professional colleges were restructured into colleges and their status has changed. Colleges are currently considered as non-university higher education institution.

Colleges had 6.7 thousand computers in total in 2006-2007 academic year, 94.5 % of this number were connected to the internet and 63.8 % were used for teaching purposes. Number of computers used for teaching purposes per 100 students was 7.6.

Universities had 16.8 thousand computers in academic year 2006-2007, and 95.4 % of this number was connected to the internet. But only 54.1 % were used for teaching purposes. Number of computers used for teaching purposes per 100 students was 6.4. Number of computers used for teaching purposes has almost doubled since 2002-2003 academic year (5.3 to 9.1 thousand).

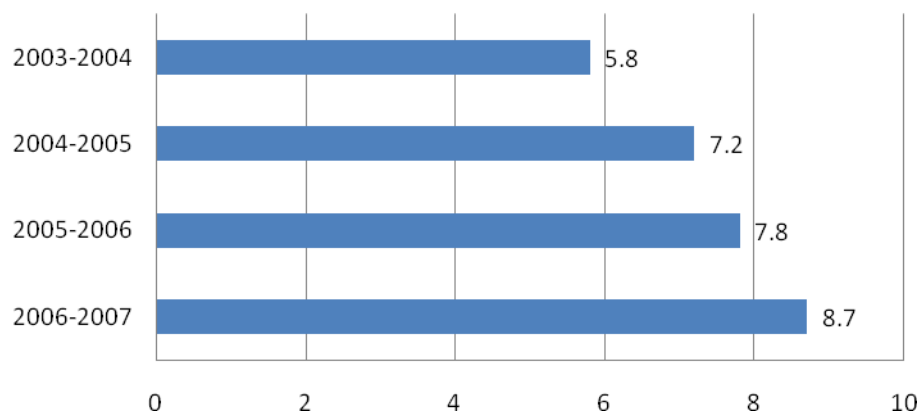


Figure 3. Number of computers per 100 students in Vocational schools

3. SITUATION WITHIN SCHOOLS/VOCATIONAL EDUCATION PROVIDERS

3.1. GENERAL DESCRIPTION

In the beginning of 2007 there were 78 state vocational education institutions. Besides state schools vocational education and vocational qualification courses are provided by 14 labor market training centers which are under the regulation of Lithuanian labor market training authority. These centers provide courses with a possibility to gain or improve certain qualification. Current vocational education system has formed in 1992. The main problem of vocational schools is the lack of high level and appropriate teaching equipment. This situation emerged due to the fact that vocational schools had very limited funding since the restoration of Independence till app. 2004. From this year vocational schools have a possibility to participate in EU funded educational programs and these actions provided them a possibility to renew training and teaching equipment, but the need of investments into this sector is still very high.

During the project GenExis was executed a survey about the situation in vocational schools. Three aspects were highlighted during the survey: common situation, IT in the schools and opinions of teachers, students and employers about the possible use of IT, needs, and effective teaching. **14 schools** have

answered to the questionnaire in total. The general situation and common situation with IT is described above. In this section we will present some specific finding of the completed survey.

The **main topics** in the educational program for vocational schools in mathematics, chemistry and physics are described in Educational Standards of general education. There are no specifics for the teaching content in vocational schools for the mentioned subjects; all topics are the same as in ordinary secondary school. The **major methods of teaching** are theoretical and practical exercises, individual works, group works, laboratory works, etc. Teaching methods mostly depend on a teacher.

Total number of lessons in each subject per whole period of education at vocational schools depends on a grade. Approximate number of lessons is 270 for mathematics, 170 for physics and 136 for chemistry (from a total number of 1350). But it may differ depending on grade, teaching level (usual or extended) and other specifics.

Amount of work for teachers is app. 30 hours per week. Usually 22 hours are for lessons and 8-9 additional hours for preparation, methodical work, extracurricular activities, etc. These numbers depends on a teaching subject as well, as teachers of different subjects have a little bit different work load.

Teachers' basic education required for work at schools. For all teachers in vocational schools it is required to have higher education degree in pedagogical field. Usually they are graduates of a pedagogical university. For those teachers who work with extended courses the qualification of senior teacher or higher and higher education degree in teaching subject is necessary. Possibilities for improvement of professional skills depend on a school but usually there are quite good possibilities to improve the qualification, participate in qualification courses, etc. 5 days per academic year have to be spent for qualification improvement in an obligatory way.

How often exams, control works, laboratory works happen in the vocational schools? Control works frequency depends on individual plans. Some teachers organize control works after every new topic is over, other teachers organize control works 3-4 times per half a year. Laboratory works are organized depending on curricula, app. 5-7 laboratory works per academic year. In some cases laboratory works for chemistry or physics are organized partly, because of a lack of appropriate laboratory equipment. Exams are organized at the ends of 10th and 12th grade, together with exams in secondary schools.

How long does it take from teacher to **prepare for the exam**, control or laboratory work? Usually for preparatory works teachers spend much more time than it is foreseen for paid extracurricular work. Teachers may spend 3, 5, 7 hours for preparation depending on a subject and topic. Preparation for control works and laboratory works takes minimum 2 hours. Tasks for exams are prepared centralized by National Exam Center.

Could GenExis help in preparation with its exercise generation engine? Most part of teachers think that it could be a helpful tool in control work task preparation, if it will correspond educational standards and requirements.

In Lithuanian school the **knowledge evaluation system** is 1-10.

3.2. ICT IN VOCATIONAL EDUCATION SCHOOLS

Significance of appropriate ministries in introduction and application of various technologies at vocational education schools. All respondent answered positively to this question. Schools are provided with computers according to a program “Education in Information Society”, as well as according to currently valid strategic attitudes of government. Schools have also a possibility to equip with the computers through different common projects between school and Ministry of Science and Education.

Which organization is responsible for application of technologies in vocational education schools. The responsible organization is the Department of Vocational Training at the Ministry of Science and Education. Also there are some other responsible organizations: Ministry of Science and Education itself, Educational Information Technologies Center and Teachers' Qualification Center.

Are there any programmes or projects aimed at introduction and application of ICT, computer facilities and training of teachers and pupils? There many national and international ICT projects. Some schools participate in a project of implementation of ICT in vocational training, international project INSPIRE, a project for physics eTraining “Physics is interesting and important”, etc. Schools are quite active in project activities.

3.3. SITUATION AT VOCATIONAL EDUCATION SCHOOLS

Are ICT used in learning process; in what ways. Yes, mostly schools answered positively to this question – they use ICT in learning and training process. Some schools said that they have some software for mathematics. Also they often use ICT in control or practical works. Some schools have a possibility to have mathematics or physics lessons in a computer class. Mostly ICT is used for tests, control works, mastering the knowledge, etc.

Are there **separate computer rooms** in each vocational education school, are they easily accessible? Most part of the schools has separate computer rooms/classes and has a possibility to lead the lessons of other subjects in ICT classes. Some schools have only one, some have more computer rooms.

Is there a **separate classroom for subjects** of mathematics, physics and chemistry? Yes, most schools have separate classrooms for mathematics, physics, and chemistry. In most cases these classes are not provided with computers. Only a few classes have one computer. But teachers have a possibility to lead the lessons in computer rooms.

Material and technical equipment of the classrooms of physics, chemistry and mathematics (are there necessary technical and practical aids, is there a separate laboratory and assistant). Schools do have technical equipment, equipped laboratories, classes with the required training and methodical material, but they do not have any laboratory assistants at all.

What type of teaching aids and materials are used in teaching of mathematics, physics and chemistry. Mostly schools use usual aids and material: textbooks, task books, manuals, books for control and individual works, other methodical material, e.g. visual models for geometry, posters, technical material, other visual tools. Also teachers use internet resources and have some software for subject teaching.

Is there any **information about further education** or work carrier of graduates (how do they use the gained knowledge). It depends on a school. In most cases schools try to gather information about their graduates: how they adapt to labor market, do they successfully work in companies, etc. In some schools deputy director collects information how successful is adaptation of their graduates in companies. Also they analyze the carrier of their graduates, but it depends very much on economical situation in country. 15 % students in average continue their studies in further education institution: colleges, higher education institutions.

3.4. THE OPINIONS

The general opinion of teachers: where do they get the materials for work, do they use any personal materials, how often they use ICT and is it convenient for them, what is the general situation in preparation and application of exercises?

In most cases the information provided in textbooks is not enough. Teachers have to use their personal materials, look for it in internet or prepare themselves. Also teachers use the material from different training courses, but they do not usually create their own exercises or tasks. Looking for the information in internet, they use own, personal computers and other personal means.

The general opinion of employers: what do they expect and what is the real knowledge of graduates of vocational education schools; is the knowledge sufficient and are they capable to use them in practice?

The opinion of employers depends not only on a certain school, but mostly on student's motivation and knowledge level. Some employers are very happy with the knowledge of graduates, but some are not. The common opinion is that mostly graduates have sufficient level of theoretical knowledge but lack practical skills and abilities how to apply knowledge in practice.

The general opinion of pupils: how often ICT are used in teaching process, is it successful, does it ease the digestion of the particular themes; do they get all needed information and are the materials understandable?

Students usually like to learn using ICT. They are more motivated to learn something if there is some ICT based subject learning and so the level of their knowledge is higher. ICT is also good in the training process as it provides a possibility to follow the individual "speed" of learning. ICT also helps for better visualization of the teaching subject.

Please define the **general opinion of teachers, employers, pupils** – in what area of teaching process use of ICT give more effectiveness.

Common opinion of teachers, employers and students about ICT in teaching and learning process was that it could be very helpful almost in all stages of teaching process, especially in the assessment. Also ICT could help in individualization and differentiation of teaching, as students have different level of knowledge as well as different abilities. ICT could also be helpful in visualization of training material, generalization of every topic, project activities of students. It could make the assessment and evaluation process easier and quicker.

REFERENCES

1. **Lietuvos švietimas (Education in Lithuania)** 2004, Lietuvos Respublikos švietimo ir mokslo ministerija, Švietimo aprūpinimo centras, ISBN 9986-03-559-7
2. www.smm.lt/svietimo_bukle/docs/statistika/Pages%20from%20Informacines_technologijos_Lietuvoje_2007_.pdf
3. <http://www.stat.gov.lt/lt/>
4. **Lietuvos Respublikos valstybės kontrolė. Valstybinio audito ataskaita. Švietimo sistemos reforma** 2008 m. gegužės 19 d. Nr. VA-P5-50-2-10, Vilnius
5. http://epp.eurostat.ec.europa.eu/portal/page?_pageid=1090,30070682,1090_33076576&_dad=portal&_schema=PORTAL
6. http://www.smm.lt/svietimo_bukle/docs/apzvalgos/lss07/ProfesinisMok2007.pdf