



Educational Situation and Labour Market Conditions in the Baltic Sea Region

Baseline Study of Work Package 5
Vilnius Gediminas Technical University

Editors / content:



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Introduction

This baseline study was collected from Co₂olBricks project partners by work package 5 lead partner Vilnius Gediminas Technical University.

The aim of this baseline study is to give a basis for the further project development, particularly the work package 5 “Education and Economic Promotion”.

The main task in compiling this document was to collect and present descriptive information and comparable data to understand in glimpse the specifics and necessities of each project country, to know the complexity of labor market and education system in BSR, to name the main problems which can be met within Co₂olBricks project in education and economic promotion section.

The data obtained from the project partners was supplemented by more general information from other available resources.

PhD assoc. prof. Jurgis Zagorskas

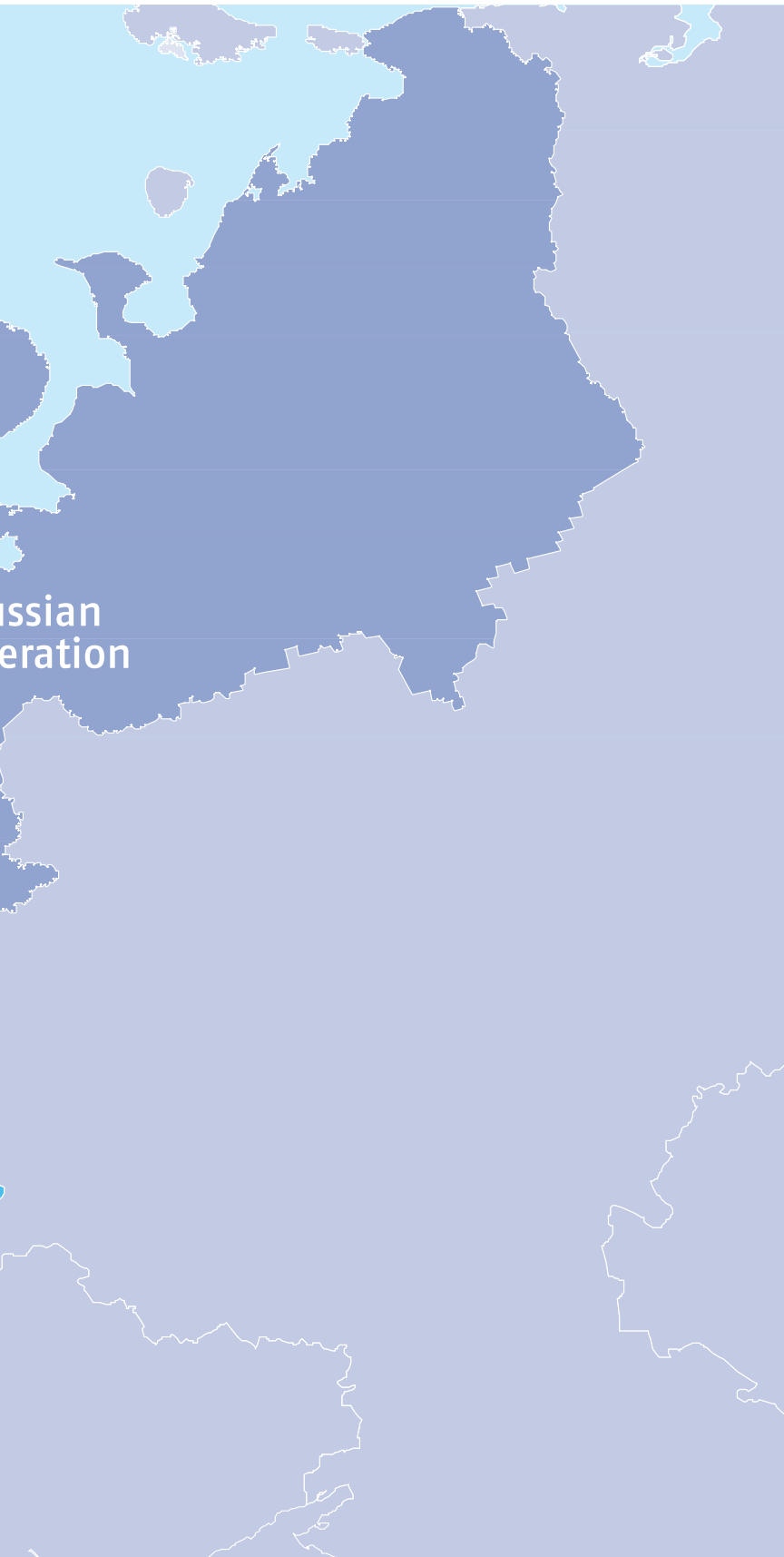
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Co₂oBricks in the Baltic Sea Region





The map shows the locations of the Co₂olBricks project partners of the following countries:

- Germany
- Denmark
- Sweden
- Finland
- Estonia
- Latvia
- Lithuania
- Belarus
- Poland

› The aim of this baseline study is to give a basis for the further project development. ‹

Area: 207 595 km²

Population: 9.5 million

Population density: 45.8/km²

GDP total: € 41.007 billion

GDP per capita: € 4 347

Average income: € 3170

Represented by:

PP17, Innovation Association Akademtechnopark
(RCTT – Republican Centre for Technology Transfer)



BY

Belarus

Labour market conditions

Belarus has a relatively well developed industrial base; it retained this industrial base following the break-up of the U. S. S. R. The country also has a broad agricultural base and a high education level. Belarusians now face the difficult challenge of moving from a state-run economy with high priority on military production and heavy industry to a civilian, free-market system.

Belarus has a population of 9.5 million people, with three-quarters of the working age population. As of 1 September 2009 the official rate of unemployment is 1% though independent estimates put it at 4.5%.

Adult literacy rates in Belarus are among the highest in the world and there are 28 universities in Belarus and eight specialist academics, The student/resident population of 340 per 10,000 is one of the highest in

Europe. Almost half of workers have got a higher education qualification. [1]

According to official statistics, around 55 % of the workforce works for the state, with 48.4 % employed in the private sector and 1.6 % in foreign firms.

Contrary to those in most transition economies, the Belarusian labor market is characterised by low official unemployment. At less than 3 percent of the labor force, the registered unemployment remains significantly lower than in the Baltics and Russia, as well as in the other recently acceded EU countries. At the same time, the share of employment in the formal private sector is also among the lowest in this group. [2]

Structure of education system

School education

School education is divided into three levels: primary (4 years), basic (9 years) and secondary (11 years). Basic education is compulsory for all children. It is provided in basic schools, 5 – 9 classes of secondary schools and 5 – 9 classes of gymnasiums. At the end of basic education, a Certificate of Basic Education is awarded. 9th grade graduates have three possibilities: 1) Third stage of school education (10 – 11th grades); 2) Vocational/technical establishments; 3) Technicums.

In secondary education, pupils continue to study in secondary schools 10 – 11th grades, grammar schools or lyceums. School-leavers are given a Certificate of Secondary Education. General secondary education is provided by general secondary schools, gymnasiums, lyceums and colleges, as well as in first courses of specialised and technical schools. Gymnasiums provide general secondary education at a higher level. Lyceums provide vocationally-oriented education that completes general secondary education. As a rule, lyceums use the teachers and educational facilities of universities and research institutes. Colleges provide general secondary education that is strongly oriented towards vocational training and award qualifications of “special secondary education”. Vocational and technical education are provided by schools where students acquire professional and vocational skills together with general

secondary education. Vocational and technical education complement the basic (9 years) education and general secondary education (11 years). In the former case, training lasts for three years and leads to a particular trade. In the latter case, training lasts for one year and leads to students acquiring a trade.

At present, there are 249 vocational-technical schools.

Specialised secondary education lasts for two to four years depending on whether students have followed basic or general secondary education. Specialised secondary education establishments include technicums, technical schools and colleges. Colleges are a new type of institution in Belarus. They provide advanced specialist training.

At present, there are 149 state specialised secondary education institutions, 55 technicums, 41 colleges, 53 intermediate occupational education institutions, 5 higher colleges and 7 non state specialised secondary education institutions.

A General Secondary School Reform is being implemented. The new model of general secondary education will include three levels: primary general education; basic general secondary education; complete general secondary education.. It is planned to make the third stage of secondary education a lyceum with two-year period of study. It is planned to introduce 5 types of lyceums and gymnasiums: general, humanistic, scientific, artistic and polytechnic. The certificate of

lyceum education gives right of admission to any higher education institution.

At present there are 86 gymnasiums, 25 lyceums and 5 colleges. [3]

Higher education

The Belarusian system of higher education includes educational, research and governing institutions that use unified official standards and rules in the processes of teaching, management, assessment and research. Higher education is provided by public (State) and private (non-State) accredited higher education institutions (HEIs). Education in public HEIs is free of charge for students who passed the entrance competition. In private HEIs, all students pay tuition fees. Higher education is under the supervision of the Ministry of Education, which is responsible for the accreditation and licensing of HEIs and developing and applying the State Educational Standards. The implementation of the two-level system of higher education is underway and comprises a Bachelor in 4 years and a Master or Specialist Diploma in one to two years depending on the field of study.

At present Belarus has 44 state higher education institutions (25 universities, 9 academies, 4 institutes, 5 colleges and 1 technical school) with 272,900 students; and 13 private higher education institutions with 163,500 full-time, 1,800 part-time and 107,600 distance students. [4]

Types of higher education institutions

University, Academy, Institute, Higher College

Languages of instruction

Belorussian, Russian

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level:

In Belarus, there are two levels of professional post-secondary education. The lower level is offered in Tekhnikums/uchilishche and colleges after basic general education and lasts from 2 to 3 years of study. The upper level is offered after secondary general education in Tekhnikums/uchilishche and colleges after basic general education and lasts from 2 to 3 years of study. Students from this level can then enter University in the same field of study and obtain up to two years of transfer credits.

University level studies:

University level first stage: Bachelor:

From 2002, the first level of higher education is leading to the Bachelor (Bachelor's degree). The Bachelor is awarded in all fields except in Medicine after defending a Diploma project and sitting for a final state exam. In Medicine, this first stage lasts for 6 years.

University level second stage:

The second level of higher education leads to the Specialist Diploma or the Magister (Master's Degree) after one -or two years of study following upon the Bachelor's degree. The Magister is awarded after one year of study and the presentation and defence of a thesis. The Specialist Diploma (Diplom o Vyssem Obrazovanii) is awarded upon completion of at least one year's study after

the Bachelor or in five to six years' study beyond the Attestat o Srednem Obrazovanii in some fields. The Specialist Diploma is a professional qualification that gives right to the exercise of professional activities and to apply for doctoral programmes. [3, 4]

Teacher education

Training of secondary school teachers

Secondary school teachers are trained at specialised secondary education institutions and pedagogical universities and institutes. The qualification awarded is for example, teacher of Mathematics and Physics or teacher of Chemistry. Teachers for vocational secondary schools are trained in pedagogical higher education institutions, universities and in some technical higher education institutions where engineers-teachers are trained.

Training of higher education teachers

Higher education lecturers are trained in their specialities in institutes or universities and, after graduation, start their activity as assistant lecturers in order to gain practical experience in their areas of expertise. Every five years, they must enroll in up-grading courses to improve their teaching skills as well as their knowledge in the field. Furthermore, there is a system of training of scientific and pedagogical staff at post-graduate level.

Non-traditional studies

Distance higher education

Distance training is provided by virtual universities (through Internet) such as Hagen Correspondence University which provides studies leading to a Master of Humanities and started operating in Belarus in 1996. Students must hold a secondary school leaving certificate. There is no age restriction and no entrance examination. There are also franchising institutions which are branches of foreign higher education institutions functioning in Belarus.

Lifelong higher education

Lifelong education consists of external studies.

Higher education training in industry

Some upgrading courses for industrial workers and professionals of different branches of the national economy exist.

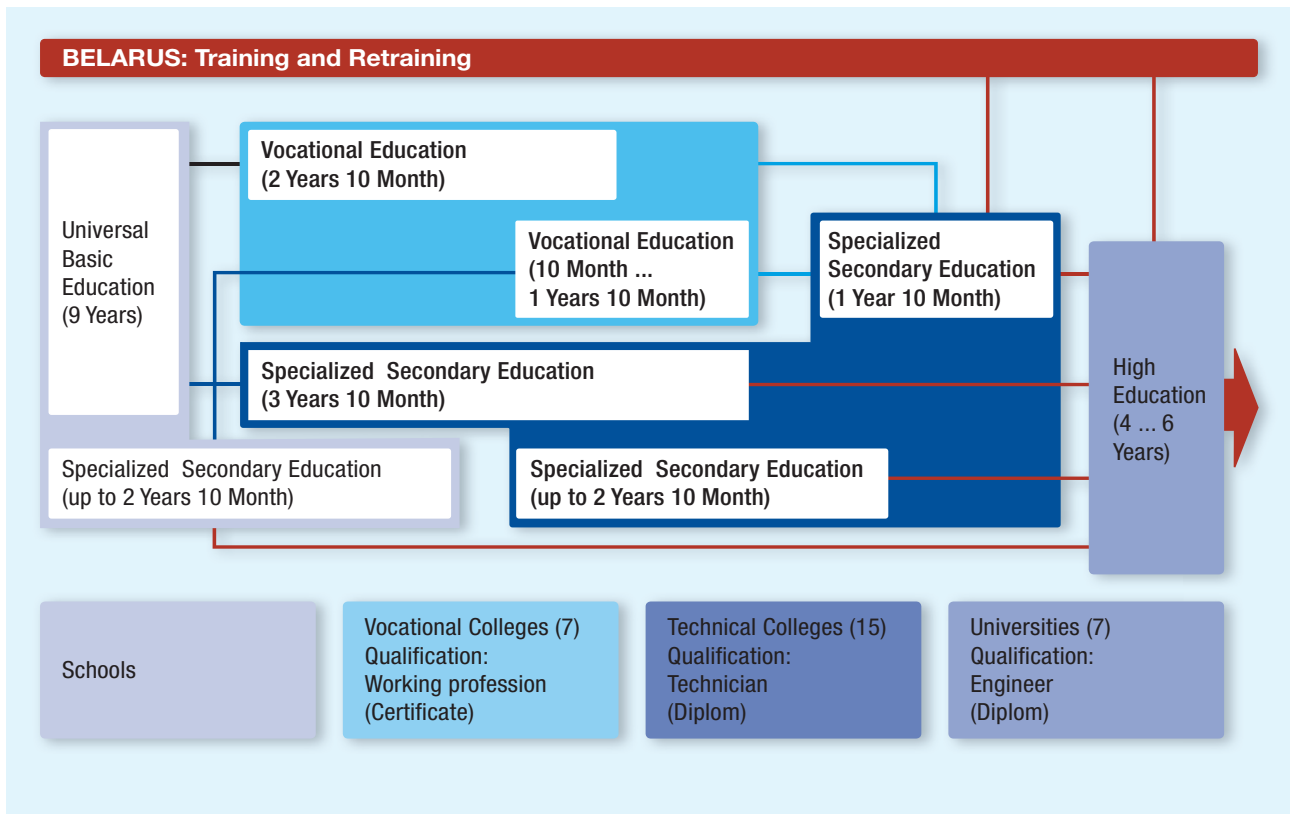
Responsible authorities

Authorities responsible for education

Ministry of Education

Provides state education policy, controls quality of education, finances educational establishments in the limits of budget allocations, licensing of new institutions, granting accreditation

Ul. Sovetskaja 9
220010 Minsk



Belarus

Tel: +375 (17) 2274736

<http://www.minedu.unibel.by>**Rectors' Council of Higher Educational Institutes of Belarus**

Belarus State Economic University

28 Partyzanskij Prospekt

220070 Minsk

Belarus

Tel: +375(17) 2494030

<http://www.bseu.by>**National Institute for Higher Education**

Responsible for educational research and information on higher education, the Institute also provides training courses to new rectors, deans and department heads and acts as Belarussian ENIC.

Ul. Moskovskaja 15

220001 Minsk, Belarus

Tel: +375(17) 2281313

<http://www.nihe.niks.by>**Academy for Postgraduate Education**

Ul. Nekrasova 20

220040 Minsk

Belarus

Tel: +375(17) 2857828

<http://www.academy.edu.by>**Department for Foreign Relations, Ministry of Education**

responsible for dealing with international cooperation and exchanges in higher education

Ul. Sovetskaja 9

22010 Minsk

Belarus

Tel: +375(17) 2264975/ 2007693

Area: 43 075 km²

Population: 5.56 million

Population density: 129/km²

GDP total: € 151.205billion

GDP per capita: € 27 319

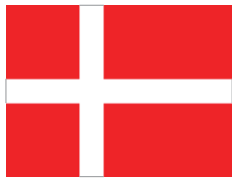
Average income: € 28 621

Represented by:

PP9, Danish Building Research Institute



DK



Denmark

Labour market conditions

The Danish labour market is known for its flexibility. International surveys by the World Bank and the Organisation for Economic Co-operation and Development (OECD) have for years ranked the Danish labour market as one of the most flexible in the world and allows employers to adjust employees given market demands. Denmark has a very flexible labour market and is one of the top two countries in Europe when it comes to competitive salary levels. The Danish workforce is among the most productive in Europe and no restrictions apply regarding overtime work.

Key features of the Danish labour market

- Competitive overall labour cost level
- Very flexible labour market

- Highly motivated and productive workforce
- Low frequency of strikes
- Well-organised labour market with good cooperation between the different parties
- Competitive remuneration costs for employees with higher education and management in general [5, 6]

Foreigners with special qualifications, obtaining employment in areas with a shortage of Danish labour, have easy access to residence and work permits in Denmark. Gross salaries are high in Denmark in comparison with other countries making Denmark an attractive place to work. Salaries vary, depending on whether you are employed in the private or public sector. Most salaries in the public sector are fixed by collective agreements, but there is an increasing tendency towards individual

supplementary agreements. The private sector practices a more individual wage policy. Often the salary is negotiated individually, and the role of the trade unions is usually more subdued. Public authorities, employers associations and unions regularly publish detailed wage statistics, which give an indication of the wage level. According to statistics, a person with a five-year educational background can expect a monthly salary of approx. 3800 euros as the minimum monthly wage.

The Danish labour market is very special as the collective agreements are negotiated between the unions and the employer associations. These agreements largely replace actual legislation concerning wages and labour conditions, and almost 80 % of the Danish labour market is subject to the collective agreements. The agreements help ensure a peaceful and stable labour market. The organisations also negotiate with the government – in the so-called tripartite cooperation – about labour market policy on questions such as unemployment and insurance issues.

By European standards, the agreements on the Danish labour market are highly flexible, for instance with regard to working hours, overtime, hiring and firing of personnel. This also means that mobility is high on the Danish labour market.

In return for their high level of flexibility, Danish employees are guaranteed a relatively comprehensive social security in times of unemployment, illness or occupational injury. Social security is guaranteed to all

employees by the law. The combination of high flexibility and comprehensive social security is why the Danish labour market is sometimes referred to as based on a “flexicurity model”.

The flexibility and security also applies to foreign labour. The law ensures that foreign employees are given the same rights as Danes on the labour market, when the relevant permits and contracts are present.

Danish workplaces are characterised by an absence of the highly hierarchical structure found in many other countries.

The public education system is free and as a result, Denmark has one of the most well-educated populations in the Europe Union with a high proportion of university graduates. 80 percent of the population has attained at least upper secondary education. [5,6]

Structure of education system

School education

Basic education comprises primary and lower secondary education and lasts for nine or ten years (the 10th year is optional). Upon completion of the Folkeskole pupils may go on to upper secondary school. The 3-year Gymnasium programme is the traditional general upper secondary programme. General upper secondary school and the more vocationally-oriented programmes “Højere Handelseksamen” (HHX) or “Højere

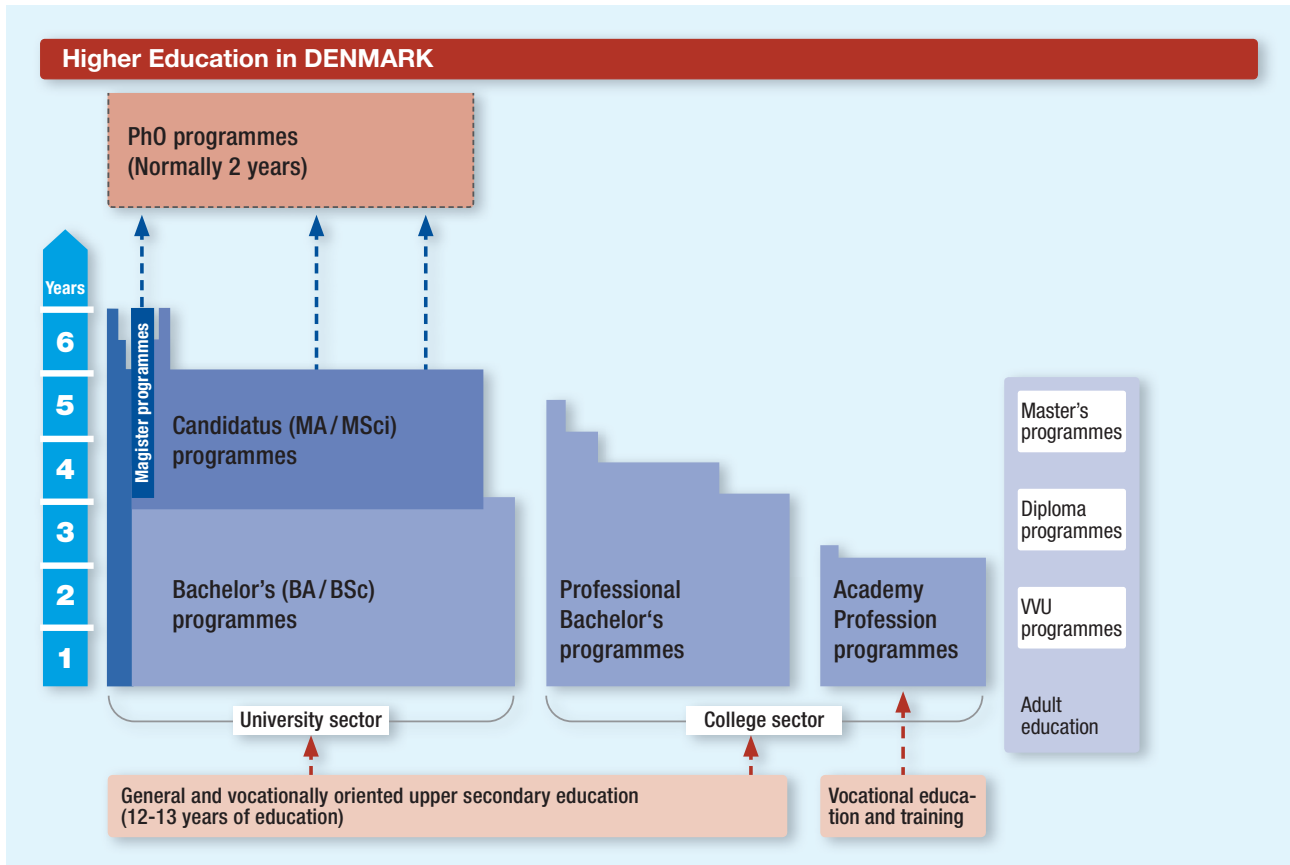
Teknisk Eksamen” (HTX) qualify students for higher education. HHX and HTX also prepare for employment in trade and industry – usually in training positions. Vocational programmes are mainly Erhvervsuddannelse (Vocational Education and Training, VET) and prepare directly for specific jobs. In addition, most VET programmes qualify students for direct admission to one or more short-cycle professional higher education programmes. Approximately 30 – 50 % of the time is spent at school and 50 – 70 % is spent as a trainee or apprentice in a business enterprise. Other vocational programmes are basic social and health education programmes (SOSU) and agricultural, forestry, home economics and maritime programmes. Education is largely the responsibility of the Ministry of Education. It shares control of the Gymnasium and Højere Forberedelseseksamen (HF) with the country councils and school or course boards. It is responsible for setting up the framework for curricula at primary and secondary education level. However, the contents of the courses are established by the schools (with their boards) and finalised by the teachers with their pupils. Vocational education and training is controlled by the Ministry of Education with the social partners as important parties.

Higher education

Higher education comprises a university sector and a college sector, i. e. the professionally-oriented higher education sector.

The university sector includes 12 universities, 5 of which are multi-faculty universities. The others are specialised in Engineering, IT, Education, Veterinary Medicine, Agriculture, Pharmacy or Business Studies. In addition, there are 13 specialist university-level institutions in architecture, art, music, etc. The university sector offers programmes at three levels: Bachelor’s Degree (3 years of study), the Candidatus Degree (i. e. Master’s Degree, normally 2 years following upon the Bachelor’s Degree) and the Ph. D. Degree (normally 3 years’ study after the Candidatus Degree). Study programmes of the university sector are research-based.

The college sector comprises approximately 100 specialised institutions of higher education offering professionally-oriented programmes: a) The Academy Profession Degree (AP degree) is awarded after two years of study b) the Professional Bachelor’s degree is awarded after 3 to 4 ½ years of study. Colleges offering professional Bachelor’s Degrees have merged into more comprehensive Centres for Higher Education (Centre for Videregående Uddannelse (CVU)). As from 2005, CVUs fulfilling certain quality criteria may be awarded the label of University College. Colleges offering Academy Profession degrees have formed Academies of Professional Higher Education (Erhvervsakademier) as a framework for regional cooperation. The Ministry of Science, Technology and Innovation is responsible for university education except for certain higher education programmes which come under the Ministry of Cultural Affairs (e. g. Architecture, Music, Fine Arts, and Librarianship). The Ministry of



Education is responsible for short- and medium-cycle higher education. The legislation covers the aims and framework of education, funding and in some cases curricula, examinations and staffing. Higher education institutions are publicly financed and State-regulated. The quality of higher education is ensured by ministerial approval of new programmes and institutions, external examiners and an evaluation system. Although they have institutional autonomy, institutions must follow general regulations concerning teacher qualifications, award structures, study programmes and quality assurance. The relevant Ministries approve new programmes. The use of the European Credit Transfer System (ECTS) became mandatory in all higher education study programmes on

September 1st, 2001, the use of the Diploma Supplement on September 1st, 2002.

Types of higher education institutions

Erhvervsskole (Handelsskole or Teknisk Skole), Erhvervsskole (Handelsskole, Teknisk Skole, Social-og sundhedsskole, Landbrugsskole & other specialised schools)

Languages of instruction:

Danish, English

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level

Short-cycle higher education includes programmes mainly in the commercial and technical fields. The programmes normally

take two years and they build either on relevant vocational education and training (plus adequate general upper secondary courses) or on general upper secondary education/commercial and technical upper secondary education. They have the common designation of *erhvervsakademiuddannelse* (Academy profession programmes). Apart from theoretical subjects, programmes are usually completed with a three-month project. Students may, on certain conditions, be awarded credits when they continue in a medium- or long-cycle higher education programme. The medium-cycle programmes provide students with theoretical knowledge, as well as knowledge of its application to professions and industries. They normally include periods of practical studies and require the submission of a project/project paper. Having satisfied a number of criteria such as links to research and development, most of these programmes now lead to the Professional Bachelor's degree (Professionsbachelor). Most programmes give access to further studies in the same field, typically a Master's programme (adult education) or, on certain conditions, a specific Candidatus programme.

University level studies

University level first stage: Bachelorgrad (B.A or B.Sc):

Undergraduate study takes 3 years and leads to the award of a Bachelor's Degree. The degree is awarded by the universities/specialised higher education institutions upon completion of a research-based study programme concentrating from the first year on the major subject area chosen for the

degree. It includes a project work usually of some two months' duration.

University level second stage: Kandidatgrad/ Candidatus (cand. + field of study, in English: usually MA or MSc + field), Magistergrad (Mag.Art.):

The Candidatus Degree (Master's Degree) can be obtained at universities and other specialised research-based institutions of higher education. In most fields of study admission requires a Bachelor's Degree in the same field of study. The degree is normally awarded after a total of 5 years of study: the Bachelor's Degree (3 years) and a 2-year Candidatus programme with the exceptions of Medicine (3 years) and Veterinary Medicine (2 ½ years).

University level third stage: PhD grad:

A PhD Degree can be obtained at universities and other research-based institutions of higher education. The typical PhD programme is a 3-year programme after the Candidatus Degree.

University level fourth stage: Doktorgrad (Dr + field of study):

The Danish Doctoral Degree is an advanced degree obtained after five to eight years of original and outstanding research. It is awarded after public defence of a thesis. There is no formal study programme.

Teacher education

Training of higher education teachers

Teachers in higher education institutions must hold a degree at least equivalent to the level at which they are to teach. In addition, they must hold qualifications for teaching the subjects in question which may be

earned, for example, through research work, professional experience or periods abroad.

Non-traditional studies

Distance higher education

Some programmes of open education (see section below) are offered as distance education. Students meet with their teachers and co-students for two or three sessions per semester. The educational institution provides the syllabus, exercises and guidance. Distance education may also be Internet-based.

Lifelong higher education

The Open Education scheme comprises all vocationally oriented programmes from basic vocational education and training to long cycle higher education programmes, as well as short, condensed courses. It is possible to follow courses at one's own pace. Participants can choose to follow particular subjects or modules or to complete an entire course. Teaching may take place in the daytime, in the evening, at week-ends or as distance learning. Institutions can offer all or parts of the courses they are entitled to offer. Open education confers the same qualifications as the corresponding courses taken under other forms. Entire courses and single subjects offered under the open education scheme may lead to a fully recognised diploma. Admission requirements are the same as for the corresponding full-time courses. Adult Education and Continuing Training Programmes are available at all levels of education. Higher education qualifications are offered at three levels: Videregående

voksenuddannelse (advanced adult education) comparable to the short-cycle higher education level; Diplomuddannelse (Diploma programmes) comparable to medium-cycle higher education/Bachelor's Degree level; Masteruddannelse (Master programmes) comparable to long-cycle higher education/Candidatus (Master's) Degree level. Most programmes consist of two years' part-time study, equivalent to one year's full-time study. [7,8]

Responsible authorities

Authorities responsible for education

Ministry of Science, Technology and Innovation (Ministeriet for Videnskab, Teknologi og Fornyelse)

Responsible for university research and education

Bredgade 43

1260 København K

Denmark

Tel: +45 33929700

<http://www.vtu.dk>

Ministry of Education

(Undervisningsministeriet)

Responsible for non-university education, including short- and medium-cycle higher education

Frederiksholms Kanal 21

1220 København K

Denmark

Tel: +45 33925000

<http://www.uvm.dk>

Danish Rectors' Conference

(Rektorkollegiet)

Coordinating body consisting of the university rectors and observers from the other university level institutions.

Fiolstræde 44

1. Th.

1171 København K.

Denmark

Tel: +45 33925403

<http://www.rks.dk>

Danish Evaluation Institute (Danmarks Evalueringsinstitut)

Independent institution formed under the auspices of the Ministry of Education.

Initiates and conducts evaluations of teaching and learning at all levels of the education system.

Østbanegade 55

2100 København Ø

Denmark

Tel: +45 35550101

<http://www.eva.dk>

International cooperation and exchanges

Principal national bodies responsible for dealing with international cooperation and exchanges in higher education:

CIRIUS

Coordinates the educational programmes of the European Union and other programmes and schemes contributing to international cooperation in education and training and conducts and coordinates recognition of foreign qualifications. CIRIUS was established as an agency under the Danish Ministry of Education in January 2005,

incorporating Cirius (Danish Centre for International Cooperation and Mobility in Education and Training) and CVUU (Danish Centre for Assessment of Foreign Qualifications).

Fiolstræde 44

1467 København K

Denmark

Tel: +45 33957000

<http://www.ciriusonline.dk/>

Ministry of Education

Frederiksholms Kanal 21

1220 København K

Denmark

Tel: +45 33925300

<http://www.uvm.dk>

Ministry of Science, Technology and Innovation

Bredgade 43

1260 København K

Denmark

Tel: +45 33929700

<http://www.vtu.dk>

Participation of country in multilateral or bilateral higher education programmes:

Leonardo da Vinci, NORDPLUS, SOCRATES/ERASMUS, TEMPUS

Area: 45 227 km²

Population: 1.34 million

Population density: 29/km²

GDP total: € 15.233 billion

GDP per capita: € 11 446

Average income: € 5 692

Represented by:

PP10, Information Center for Sustainable Renovation

NGO (SRIK); PP11, Kohtla-Järve Town Government;

PP12, The Centre for Development Programs, EMI-ECO



EST

Estonia

Labour market conditions

According to the data of the Estonian Labour Force Survey (ELFS), 686,900 (66.4%) of the working-age population (aged 15 – 74) were economically active in 2010. The employed persons numbered 570,900 (55,2% of the working-aged), 92% of whom were employees. The share of the unemployed in the labour force or the unemployment rate was 16.9% in 2010. 45% of the unemployed were long-term unemployed — the duration of job seeking had lasted for a year or more. The inactive persons numbered 348,000 (33.6% of the working-age population), 8,800 of whom wanted to work and were available for work but had stopped seeking a job because they did not expect to find one. [9]

64% of the Estonian labour force is occupied in various branches of the services sector,

approximately 32% is occupied in industry and the remaining 4% deal with agriculture, fisheries and forestry.

There are several reasons for the unemployment but many of them are related to the shortcomings of the vocational education system. Many older people lack necessary new skills, there are people unwilling to switch to another area or to undergo training, the training possibilities are often missing altogether or are too expensive for an unemployed person. Relocation is often a problem (there are huge differences in estate prices in Estonia). It has to be admitted that in many cases the employees themselves lack the skills and willingness to work.

Therefore in Estonia the fairly high level of unemployment is accompanied by the lack of qualified workforce — the reason why about

20 % of the entrepreneurs are unable to expand their production. It may also be the case that in many instances the offered salary does not inspire the possible workers.

The average monthly net salary in Estonia is about 806 euros and the average wage per hour is 4.85 euros, which is undoubtedly very little compared to the developed countries. [10,11]

Structure of education system

School education

General education is divided into two parts: basic education (9 years: age 7 to 16) which is compulsory for all children in Estonia and secondary general education. Since 1993, the Basic School Leaving Certificate, obtained at the end of basic education, provides a student with the right to continue at the next level which offers two streams (in three further years): 1) Secondary general school/gymnasium education and 2) vocational education. Upon graduation of secondary general education, students obtain the *Gumnaasiumi loputunnistus* (Secondary School Leaving Certificate) which gives access to higher education. Students who have completed the study programme for secondary vocational education on the basis of basic school education will, upon graduation, obtain a Certificate on Acquiring Secondary Vocational Education Based on Basic Education (*Tunnistus põhihariduse baasil kutsekeskhariduse omandamise kohta*). Those who have completed the

post-secondary vocational programme for secondary vocational education on the basis of secondary school education will, upon graduation, obtain a Certificate on Acquiring Secondary Vocational Education Based on Secondary Education (*Tunnistus keskhariduse baasil kutsekeskhariduse omandamise kohta*). Vocational higher education is a one-stage higher education offered by secondary education based vocational education institutions or by professional higher education institutions (*rakenduskõrgkool*) until 2002/2003 admission.

Higher education

The higher education system consists of universities (*ülikool*) and professional higher education institutions (*rakenduskõrgkool*). The general structure of higher education is divided into two main cycles, following the undergraduate-graduate model. The first cycle is the bachelor level; the second is the master level. For some specialities, the study programmes have been integrated into a single long cycle, following the master level qualification. Professional higher education programmes are at the first level of higher education and correspond to the bachelor level programmes. The usual duration of studies is three to four years. There are six public universities, five private universities, eight state institutions of professional higher education, thirteen private professional higher education institutions, and seven state vocational education institutions offering professional higher education. Higher education institutions are regulated by the Law on Universities (January 1995), the Law on Private Schools (June 1998), the Law on Professional Higher Education Institutions

(June 1998), the Law on Vocational Education Institutions (July 1998), the Law on the University of Tartu (January 1995), the Standard of Higher Education (August 2002) and the Science and Development Organisation Act (April 1997, 2001). The administration of higher education institutions or their study programmes is the responsibility of the Ministry of Education and Research. Private higher education institutions or their study programmes are officially recognised after accreditation.

Languages of instruction

Estonian, Russian, English

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level

Non-academic higher education comprises vocational higher education and Diplom studies (until 2002/2003) and professional higher education (as from 2002/2003).

Vocational higher education is one-stage and is offered by secondary education based vocational education institutions or rakenduskõrgkool. The length of studies is from three to four years and studies include practical training. The graduates who have completed their studies are awarded a Diploma with mention of their speciality.

University level studies

University level first stage: Bakalaureus studies:

Bakalaureus level study is the first stage of academic studies with the aim to increasing students' level of general education,

acquiring basic knowledge and skills in the speciality necessary to pursue further studies at master level and to begin work. The nominal length of these studies is generally three years, in certain disciplines it is four years. Graduates who have completed their studies will be awarded the bakalaureusekraad which is certified with a diploma.

University level second stage: Magister studies:

Magister study is the second stage of higher education during which specialised knowledge and skills are further developed and knowledge and skills necessary for independent work and pursuing studies at the doctoral level are acquired. The main purpose of the magister studies is to train a specialist with advanced theoretical knowledge. Admission requirement is the bakalaureuskraad or an equivalent level qualification. The nominal length of studies is one to two years (40 – 80 APs) but along with the first stage at least five years. Graduates who have completed their studies will be awarded a degree of magistrikraad which is certified with a diploma. The integrated long cycle programme contains both bachelor and master level studies. Completion of the study programme confers a qualification that corresponds to the magistrikraad. These studies are in medicine, veterinary medicine, pharmacy, dentistry, architecture, civil engineering and teacher training.

ESTONIA's education system

Compulsory Education	20+	Bakalaureuse-ja magistriõppe integreeritud õppekava Integrated curriculum for Bachelor's and Master's study at universities	Bakalaureuse-ja magistriõppe Bachelor's and Master's study at universities	Kutsekeskharidus Vocational secondary education after general secondary education	Rakendus kõrgharidusõpe Applied higher education
	19				
	18	Kutsealane eelkoolitus Basic vocational education and training	Üldsekeskharidus General secondary education		Kutsekeskharidus Vocational secondary education
	17				
	16				
	15	Kutsealane eelkoolitus Basic vocational education and training	Põhiharidus Basic education		
	14				
	13				
	12				
	11				
	10				
	9				
	8				
	7				
	6				
5			Alusharidus Pre-primary education		
4					
3					
Age					

Teacher education

Training of higher education teachers

Higher education teachers are trained in universities where the main emphasis is on academic and scientific fields. Universities may have different titles as well as requirements for them.

Non-traditional studies

Distance higher education

It is possible to take some of the university courses through distance learning as part of the regular degree programme.

Lifelong higher education

It is possible to study in open universities and take correspondence courses. In-service training programmes for teachers and school administrators exist. [12, 13, 14]

Responsible authorities

Authorities responsible for education

Eesti Vabariigi Haridus-ja Teadusministeerium (Ministry of Education and Research)

Education management

Munga 18

50088 Tartu

Estonia

Tel: +372(7) 350222

<http://www.hm.ee>

Council of Rectors of Estonian Universities

Ülikooli 18

50090 Tartu

Estonia

Tel: +372(7) 375 100

**Council of Rectors of State Applied
Higher Education Institutions**

Kreutzwaldi 58A

51014 Tartu

Estonia

Tel: +372(7) 384810

**Kõrghariduse Hindamise Nõukogu
(Higher Education Quality Assessment
Council)**

Assesses and decides whether an institution of higher learning and its curricula meet the requirements laid out in relevant legislative and regulatory documents

**Socrates Estonian National Agency/
Foundation “Archimedes”**

Principal national bodies responsible for dealing with international cooperation and exchanges in higher education

Koidula 13A

10125 Tallinn

Estonia

Tel: +372(6) 962423/ 962424

<http://www.ekak.archimedes.ee>

**Participation of country in
multilateral or bilateral higher
education programmes**

ISEP (International Student Exchange Programme), Leonardo da Vinci, NordPlus, SOCRATES/ERASMUS, TEMPUS, Visby

Area: 338 424 km²

Population: 5.39 million

Population density: 16/km²

GDP total: € 139.393 billion

GDP per capita: € 25 921

Average income: € 24 516

Represented by:

PP19, KIINKO – Real Estate Education



Finland

Labour market conditions

The labour force consists of approximately 2.7 million people, in other words about 66 % of the working-age population. The level of unemployment in 2009 was on average approximately 8.4 % with an average of 265 000 unemployed jobseekers on the Finnish Employment and the Economy Administration's unemployment register in 2010.

The recent economic recession and its impact on the supply of labour can still be seen in the Finnish labour market. There is clearly over-supply in many lines of work, for example, in construction and transport.

Structure of education system

School education

After completing 9-year basic education, students can choose between general upper secondary education and vocational upper secondary education: 1) general upper secondary school (lukio/gymnasiet) provides general education leading to the national Matriculation examination (ylioppilastutkinto/studentexamen), which gives eligibility to all forms of higher education; 2) vocational upper secondary education (ammattillinen koulutus/yrkesutbildning) may be organised in vocational education institutions or in the form of apprenticeship training. An (initial) Vocational Qualification (ammattillinen perustutkinto/yrkesinriktad grundexamen) takes three years to complete and gives

eligibility to all forms of higher education. In vocational further education and training it is also possible to obtain Further Vocational Qualifications (ammattitutkinto/yrkesexamen) and Specialist Vocational Qualifications (erikoisammattitutkinto/specialyrkesexamen) which can only be taken as competence-based examinations and are mainly intended for employed adults.

Higher education

The higher education system of Finland . comprises of 20 Universities and 29 Polytechnics engaging in both education and research and have the right to award doctorates.

The polytechnics are multi-field institutions of professional higher education. They are specialised in applied research and development.

Universities award first cycle university degrees , second cycle university degrees) and third cycle scientific post-graduate degrees.

Polytechnics award first cycle polytechnic degrees and second cycle polytechnic degrees.

Types of higher education institutions:

In Finland there are these higher educational institutions related to Co₂olBricks project:

- Aalto University (School of Arts, Design and Architecture, Department of Architecture, www.aalto.fi)

- Tampere University of Technology (Faculty of Built Environment, School of Architecture, www.tut.fi)
- University of Oulu (Faculty of Technology, Department of Architecture, www.oulu.fi)
- Seinäjoki University of Applied Sciences (www.seamk.fi)
- University of Applied Sciences (www.kyamk.fi)
- Turku University of Applied Sciences (www.turkuamk.fi)
- Helsinki Metropolia University of Applied Sciences (www.metropolia.fi)
- Ikaalinen College of Crafts and Design – IKATA (ikata.lpkky.fi)
- Seinäjoki Vocational Education Centre Sedu (www.sedu.fi)
- Oulu Vocational College (www.osao.fi)

These institutions prepare architects, engineers, builders, entrepreneurs, restoration specialists, conservators.

Languages of instruction

Finnish, Swedish

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level:

Polytechnics First Cycle:

The first cycle polytechnic degree last 3 to 4 years of full-time study depending on the field.

Studies leading to the degree provide the student with

- (1) broad overall knowledge and skills with relevant theoretical background for working as expert in the field;
- (2) knowledge and skills needed to follow and advance developments in the field;
- (3) knowledge and skills needed for continuous learning;
- (4) adequate language and communication skills; and
- (5) knowledge and skills required in the field internationally.

The first cycle polytechnic degree comprises basic and professional studies, elective studies, a practical training period and a Bachelor's thesis or a final project.

Polytechnics Second Cycle:

The second cycle polytechnic lasts 1 or 1.5 years of full-time study. Eligibility is given by a relevant first cycle degree with at least 3 years of relevant work or artistic experience.

Studies leading to the degree provide the student with

- (1) broad and advanced knowledge and skills for developing the professional field as well as the theoretical skills for working in demanding expert and leadership positions in the field;
- (2) deep understanding of the field, its relation to work and society at large as well as the knowledge and skills needed to follow and analyse both theoretical and professional developments in the field;
- (3) capacity for life-long learning and continuous development of one's expertise;
- (4) good language and communication skills required in working life; and

- (5) knowledge and skills required to function and communicate in the field internationally.

The second cycle polytechnic degree comprises advanced professional studies, elective studies, and a final thesis or a final project.

University level studies

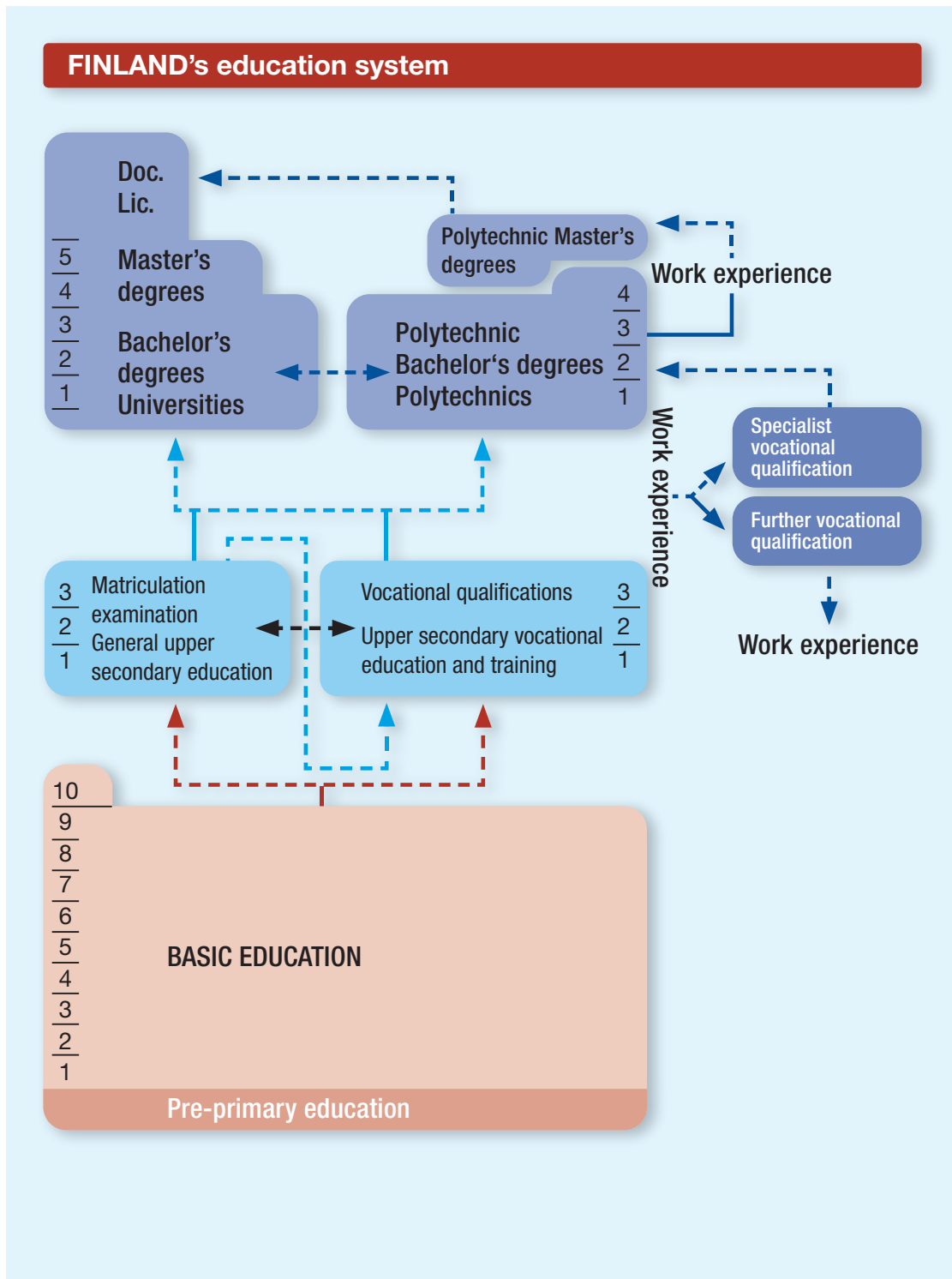
University level first stage: Kandidaatti/kandidat (first cycle):

First-cycle university degrees lasts 3 years of full-time study

Studies leading to the degree provide the student with:

- (1) knowledge of the fundamentals of the major and minor subjects or corresponding study entities or studies included in the degree programme and the prerequisites for following developments in the field;
- (2) knowledge and skills needed for scientific thinking and the use of scientific methods or knowledge and skills needed for artistic work;
- (3) knowledge and skills needed for studies leading to a higher university degree and for continuous learning;
- (4) a capacity for applying the acquired knowledge and skills to work; and
- (5) adequate language and communication skills.

Studies may include: basic and intermediate studies; language and communication studies; interdisciplinary programmes; other studies and work practice for professional development. The degree includes a Bachelor's thesis .



University level second stage:
The second-cycle university degree lasts two years of full-time study

In these fields, of Medicine, Dentistry and Veterinary Medicine there is no first cycle degree.

The admission requirement to second cycle university courses is a first cycle degree.

Studies leading to the second cycle university degree provide the student with:

- (1) good overall knowledge of the major subject or a corresponding entity and conversance with the fundamentals of the minor subject or good knowledge of the advanced studies included in the degree programme;
- (2) knowledge and skills needed to apply scientific knowledge and methods or knowledge and skills needed for independent and demanding artistic work;
- (3) knowledge and skills needed for operating independently as an expert and developer of the field;
- (4) knowledge and skills needed for scientific or artistic postgraduate education; and
- (5) good language and communication skills.

Studies leading to the second cycle university degree may include: basic, intermediate and advanced studies, language and communication studies; interdisciplinary study programme; other studies; and internship improving expertise. The degree includes a Master's thesis.

On August 1, 2005 the universities were reformed but the degrees from the former structure are fully comparable to the new degrees and they give the same academic and professional rights.

University level third stage:

Students can apply for doctoral programmes after the completion of a relevant second-cycle degree. The aim of doctoral studies is to provide the student with in-depth knowledge of his/her field of research and capabilities to produce new scientific knowledge independently. A pre-doctoral degree in two

years may be taken before the Doctor's Degree programme. Studies for the Doctor's degree take approximately four years of full-time study beyond a second-cycle degree or two years of full-time study beyond a pre-doctoral degree. Students admitted to doctoral studies must complete a certain number of courses, show independent and critical thinking in their field of research and write a doctoral dissertation to be defended in public.

Non-traditional studies

Distance higher education

Open university and polytechnic education is organised according to university syllabi by Universities and Polytechnic Centres for Continuing Education. There are no formal education pre-requisites for entering. Although open universities and polytechnics do not award degrees, students may have their studies recognised as part of degree studies upon admission at a higher education institution..

Lifelong higher education

Centres for Continuing Education at higher education institutions provide professional courses for holders of university and polytechnic degrees.

Teacher education

Teachers of universities of applied science in Finland have very own education programmes [15] It is a very important qualification in education in addition to professional know-how in this context compared to the universities, which train their own teachers. [15]

Craftsmen education

One of the most interesting forms of international cooperation in Finland is the WorldSkills – a non-profit organisation promoting excellence in skills. The objective is achieved through skills competitions and by training and coaching young professionals, competition specialists and trainers. Skills Finland works in close partnership with all the stakeholders sharing the same objectives and values. [16]

The restoration training and apprenticeship system in Finland is very unusual compared to the rest of Europe. On the internet-site www.restaurointi.net are listed the masters, journeymen and apprentice persons contact information. In the Co₂olBricks context master masons course is not given anymore.

“The apprentice and masters who are oriented towards restoration of stone structures repair masonry and plaster. They master traditional bricklayer, plasterer and / or oven masonry work and understand the means of preservation of the built environment, and methods of work. Typically, they carry out restoration plans, which have developed by the specialised designers.

The journeyman/apprentice is a skilled craftsman. He masters traditional masonry or plastering methods, tools and materials. They are familiar with the new coatings and their suitability to the old structures and traditional masonry. In addition, he is able to analyse the structures to obtain information about their age.

The Master is a professional in skills, gained prestige within the profession. He masters the old walls, vaults, or render repairs and reconstruction of the the damaged structures. In addition, he has good knowledge of for example the construction law, business, and cost accounting, so that is able to act as a head of mortar or plaster team and/or as a private entrepreneur.” [17, 18]

Responsible authorities

Authorities responsible for education

Ministry of Education (Opetusministeriö)

Responsible for the development of educational, science, cultural, sport and youth policies as well as international cooperation in these fields.

PO Box 29

00023 Helsinki

Finland

Tel: +358(9) 16077410

<http://www.minedu.fi>

Finnish National Board of Education (Opetushallitus)

Development, evaluation and information services related to education; Finnish ENIC-NARIC; competent authority for the professional recognition of foreign higher education qualifications.

PO Box 380 (Hakaniemenkatu 2)

00531 Helsinki

Finland

Tel: +358(9) 774775

<http://www.oph.fi/english>

Finnish Higher Education Evaluation Council -FINHEEC (Korkeakoulujen arviointineuvosto)

Independent expert body assisting universities, polytechnics and the Ministry of Education in matters relating to evaluation
P. O. Box 133
00171 Helsinki
Finland
Tel: +358(9) 16076913
<http://www.finheec.fi>

Centre for International Mobility – CIMO (Kansinvälisen henkilövaihdon keskus)

Services and expertise in cross-cultural communication; promotion and administration of scholarship and exchange programmes; implementation of EU education, training, culture and youth programmes at national level
PO Box 343 (Hakaniemenkatu 2)
00531 Helsinki
Finland
Tel: +358(9) 77477033
<http://www.cimo.fi>

Finnish Council of University Rectors (Suomen yliopistojen rehtorien neuvosto)

Development of the university sector of higher education; a common forum for universities
PO Box 3
University of Helsinki
00014 Helsinki
Finland
Tel: +358(9) 19122335
<http://www.rectors-council.helsinki.fi/>

The Rectors' Conference of Finnish Polytechnics (Ammattikorkeakoulujen Rehtorineuvosto – ARENE)

Rikhardinkatu 4 B 22
00130 Helsinki
Finland
Tel: +358(9) 6129920
<http://www.arena.fi>

Centre for International Mobility (CIMO)

Principal national bodies responsible for dealing with international cooperation and exchanges in higher education
PO Box 343 (Hakaniemenkatu 2)
00531 Helsinki
Finland
Tel: +358(9) 77477033
<http://www.cimo.fi>

Participation of country in multilateral or bilateral higher education programmes

EU programmes of higher education (e.g: ISEP, NORDPLUS, etc)

Germany

Area: 357 021 km²

Population: 81.8 million

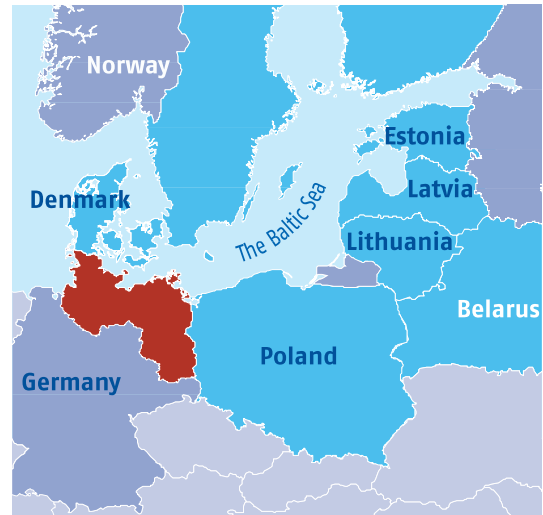
Population density: 229/km²

GDP total: € 2 484.495 billion

GDP per capita: € 27 007

Average income: € 24 484

Represented by: PPI, Free and Hanseatic City of Hamburg, Ministry of Culture and Media, Department for Heritage Preservation; PP2, Free and Hanseatic City of Hamburg,



D

Germany

Ministry of Urban Development and Environment, Cooperation Centre for Climate Issues; PP3, Vocational Training Centre Hamburg; PP4, City of Kiel, Department of Environment

Labour market conditions

Compared with the economies of other countries, the German economy has emerged from the global financial and economic crisis in relatively good health. Following a 5 % decline in GDP in 2009, economic growth of 3.6 % was already being registered in 2010. While the recovery was almost exclusively export-driven in the first half of the year, domestic demand finally began to pick up too in the second half.

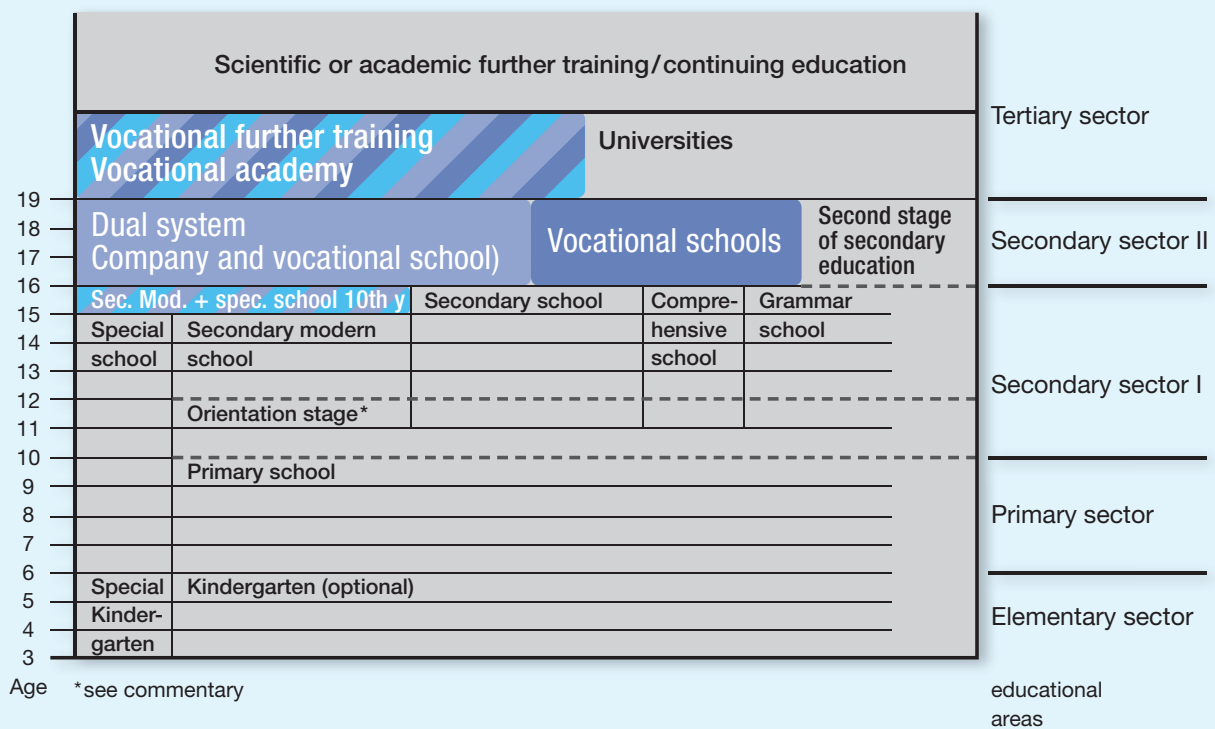
Structure of education system

School education

Children enter compulsory full-time schooling at the age of six. This schooling period lasts nine years (in five federal states (Länder) it lasts ten years). After completing it, young people who do not attend any full-time-school are required to attend part-time (vocational) school for three years. Very simply: in Germany, young people are required to attend school from the ages of 6 to 18. Trainees in the dual system (even those older than 18) are also subject to compulsory schooling.

After the four-year primary-school period, which all pupils complete, educational pathways diverge within Germany's «divided school system», which consists of secondary

GERMANY's education system (I)



modern schools (Hauptschule), secondary schools (Realschule), grammar schools (Gymnasium) and, in nearly all Länder, comprehensive schools (Gesamtschule). The different pathways often converge within the dual system, which accepts graduates of special schools, secondary-modern schools, secondary schools, comprehensive schools, vocational schools and grammar schools.

The dual system is far and away the largest educational area within secondary sector II: Two-thirds of each age group learn a recognised occupation requiring formal training. The great majority of graduates of dual-system training then work as skilled employees – and many later make use of opportunities for vocational further training. Under certain circumstances, graduates of such training can also acquire a university entrance certificate, in a year of full-time schooling, and then go on to university studies. And successful participants in

vocational further training are also increasingly being admitted to university studies.

Among all vocational (full-time) schools, the full-time vocational schools known as «Berufsfachschulen» have the largest numbers of pupils. These schools prepare pupils for occupations or for vocational training – usually within the dual system. Under certain circumstances, attendance at a full-time vocational school can be credited as the first year of training within the dual system. Some programmes of full-time vocational schools lead to a (restricted) university entrance certificate. Such programmes last from one to three years, depending on the occupational field and the relevant aims and emphases. One out of about every six pupils at full-time vocational schools learns a recognised occupation requiring formal training, within the dual system. Federal ordinances have been

enacted that now permit final school examinations for such cases to be harmonised with the relevant examinations in the dual system.

Higher education

Senior technical schools (Fachoberschulen) and senior vocational schools (Berufsoberschulen)

Senior technical schools (Fachoberschulen) and senior vocational schools (Berufsoberschulen) normally build on vocational training within the dual system. They teach specialised occupational skills and theory and confer university entrance certifications.

On the whole, there are many possibilities for transition between school-based and dual system vocational training and for transition from vocational training to higher education.

Some 20 % of all first-year students come to higher education after having completed training in the dual system.

An alternative to institutions of higher education is provided by Berufsakademien. These professional academies have taken the principle of the dual system of vocational education and training and applied it to the tertiary sector. The qualifications they award are recognised as tertiary sector qualifications that fall under the EU directive on higher education degrees by a resolution of the Standing Conference of the Ministers of Education and Cultural Affairs of the Länder of 29 September 1995, provided that they satisfy certain criteria (entrance

requirements qualifications of the teaching staff, institutional requirements).

Types of higher education institutions

Universität (University)

Technische Universität/ Technische Hochschule (Technical University)

Pädagogische Hochschule (Teacher Training College)

Kunsthochschule/Musikhochschule (College of Art/College of Music)

Fachhochschule (University of Applied Sciences)

In the city of Hamburg there are these higher educational institutions related to

Co₂olBricks project:

TUHH (University of Technology Hamburg-Harburg): Civil engineers (BS, MS)

HCU (Harbour City University):

Architecture, Urban planning, Architectural engineers (BA, MA)

AZB Hamburg,

Vocational school G19,

Chamber of crafts Hamburg (Elbcampus)

Languages of instruction:

German

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

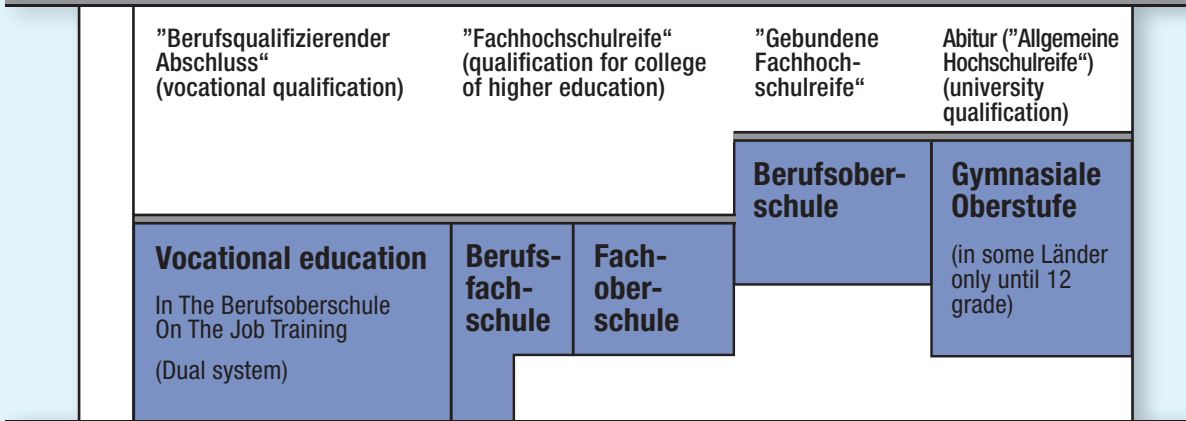
Non-university level

Non-university tertiary education is provided by the Fachschulen. These institutions offer continuing vocational training to enable those with prior vocational training and related work experience of at least one year to take on management functions. Courses last mostly two years.

GERMANY's education system (II)

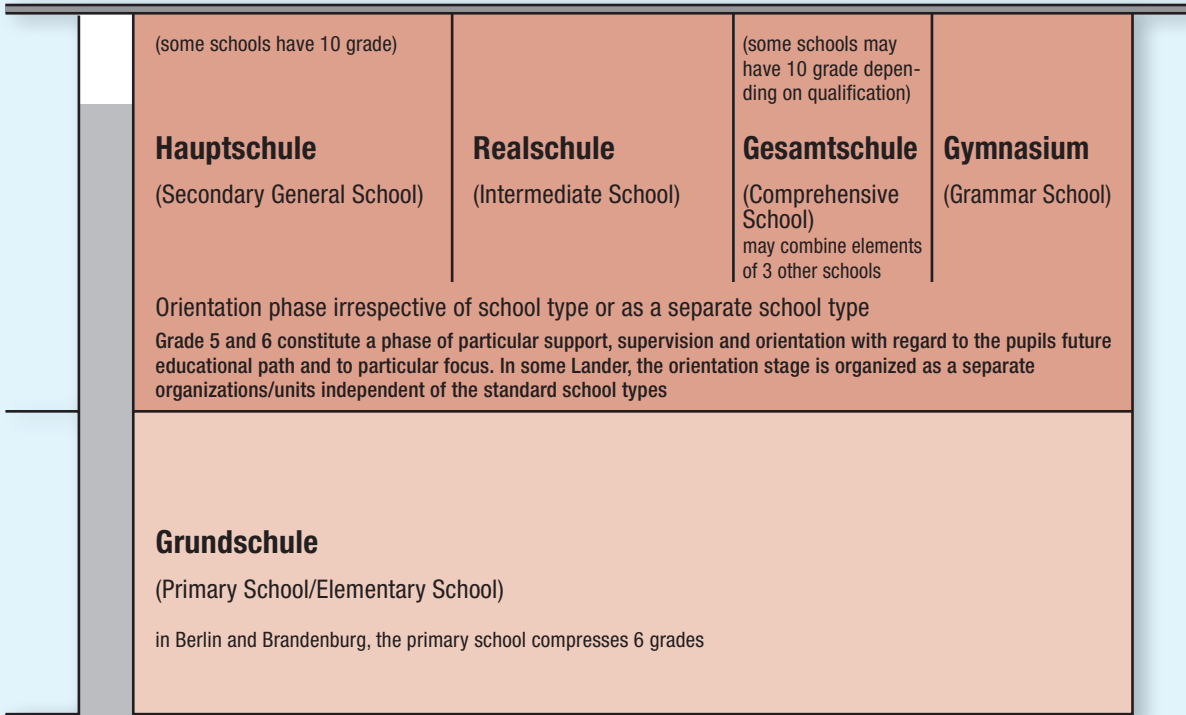
Further education & higher education

Various forms of general and vocational further education as well as different forms of higher education depending on the obtained qualification in different institutions. E.g. Abitur gives you unlimited access; Vocational Education only allows you to go into vocational work.



Leaving certificated / Qualification (issued after equivalent exams)

- First general education qualification ("qualifizierter Hauptschulabschluss") after 9 (10) grade at the "Hauptschule"
- Mittlerer Schulabschluss ("Mittlere Reife") after 10 grade of the "Realschule" or "Gymnasium"



Successful completion of the courses leads to the award of a professional title in the student's specialisation. Berufsakademien are established in 8 Länder. The Allgemeine Hochschulreife, Fachgebundene Hochschulreife or Fachhochschulreife is required for admission, together with a training contract with a company.

Responsible authorities

Authorities responsible for education

Federal Ministry of Education and Research – Bonn Office
(Bundesministerium für Bildung und Forschung)

Heinemannstrasse 2
53175 Bonn
Germany
Tel: +49(1888) 570
<http://www.bmbf.de>

Federal Ministry of Education and Research – Berlin Office
(Bundesministerium für Bildung und Forschung)

Hannoversche Strasse 30
10115 Berlin
Germany
Tel: +49(1888) 570
<http://www.bmbf.de>

Secretariat of the Standing Conference of Ministers of Education and Cultural

Affairs of the Länder – Bonn Office
(Kultusministerkonferenz)

its role is to unite the ministers and senators of the Länder responsible for school education, higher education, research and cultural affairs in order to present a common viewpoint and a common will as representing common interests. It is based on an agreement between the Länder
Lennéstrasse 6
Postfach 2240
53113 Bonn
Germany
Tel: +49(228) 5010
<http://www.kmk.org>

Secretariat of the Standing Conference of Ministers of Education and Cultural Affairs of the Länder – Berlin Office
(Kultusministerkonferenz)

Gendarmenmarkt
Markgrafenstrasse 37
10117 Berlin
Germany
Tel: +49(30) 254183

Association of Universities and other Higher Education Institutions in Germany
(Hochschulrektorenkonferenz – HRK)

To deal with questions relating to research, teaching and extension; to represent public and private state-recognised higher education institutions in Germany
Ahrstraße 39
53175 Bonn
Germany
Tel: +49(228) 8870
<http://www.hrk.de>

Bund-Länder Commission for Educational Planning and Research Promotion (BLK)

Friedrich-Ebert-Allee 38
53113 Bonn
Germany
Tel: 01888 54020
<http://www.blk-bonn.de>

German Academic Exchange Service/ Deutscher Akademischer Austauschdienst – DAAD

Kennedyallee 50
53175 Bonn
Germany
Tel: +49(228) 8820
<http://www.daad.de>

German Association of University Professors and Lecturers (Deutscher Hochschulverband – DHV)

Rheinallee 18
53173 Bonn
Germany
Tel: +49(228) 9026666
<http://www.hochschulverband.de/cms/>

Accreditation Council (Akkreditierungsrat)

The Association of Universities and other Higher Education Institutions in Germany (HRK) and the Standing Conference of Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (KMK) established the Akkreditierungsrat for the purpose of providing accreditation services. The Akkreditierungsrat is responsible for the establishment of comparable quality standards for Bachelor's and Master's degree

courses in an essential decentralised accreditation process which will be carried out by accreditation agencies. The Akkreditierungsrat performs these responsibilities by accrediting, coordinating and monitoring these agencies.

Postfach 2240
53012 Bonn
Germany
Tel: +49(228) 501699
<http://www.akkreditierungsrat.de>

Deutscher Akademischer Austauschdienst – German Academic Exchange Service (DAAD)

Administrative officer: Christian Bode, Secretary-General – Principal national bodies responsible for dealing with international cooperation and exchanges in higher education

Kennedyallee 50
53175 Bonn
Germany
Tel: +49(228) 8220
<http://www.daad.de>

Participation of country in multilateral or bilateral higher education programmes

ERASMUS, LINGUA, SOCRATES, TEMPUS

Latvia

Area: 64 589 km²

Population: 2.25 million

Population density: 34/km²

GDP total: € 24.368 billion

GDP per capita: € 8 015

Average income: € 3 905

Represented by:

PP14, Riga City Council, City Development Department;

PP15, Riga Technical university



LV

Latvia

Labour market conditions

Currently, on the labor market there is demand for employees with flexibility and competence to fulfill the responsibilities of multiple positions, i. e. in addition to his/her profession, the employee should have other skills and competences.

In spite of significant decrease in registered unemployment and increase in the number of vacancies, the number of jobseekers still significantly exceeds the number of available vacancies. However, in Latvia, demand for skilled specialists continues.

According to the data on vacancies registered with the State Employment Agency, job offers may be found in such sectors as the processing industry, construction, wholesale and retail trade, transport and warehousing, agriculture, forestry and fishery.

The current labour market situation in Latvia indicates that employers should have no problems in finding labor due to the large number of registered unemployed. As front line State Employment Agency officials indicate, there are large numbers of unemployed people without trades or professions or with low qualification.

The highest number of jobseekers and, therefore, a surplus of workers is observed in the following areas: auxiliary workers, retail sales assistants, cleaners, car drivers, guards, street cleaners, cooks, heating/stove stokers, sales assistants, wood processing operators.

Due to a comparatively high unemployment rate, the Latvian labour force often chooses to work abroad, which means that employers abroad have a good opportunity to hire both highly qualified and low-skilled employees from the Latvian labour market.

Certification and specialists involved in historical building reconstruction

When preparing renovation projects for historical buildings in Latvia usually there are these groups of specialist involved:

- 1) Approval from State Inspection for Heritage Protection includes specialists from:
 - Architectural division
 - Archaeology and history division
 - Movable Heritage and restoration methodology division
 - Cultural Heritage policy division
 - Customers and document management division
 - Legal and accounting of monuments division
 - Heritage Documentation Centre
 - The Latvian Museum of Architecture
 - Support division
- 2) Project manager (head)
- 3) Public relations expert
- 4) Strategic planning expert
- 5) Cultural expert
- 6) Art expert
- 7) International experts in art and restoration
- 8) Architectural study group
- Participants of seminars and meetings –
- 9) City Development Department expert
- 10) Development Department expert
- 12) Urban Planning and Construction Department expert
- 12) Main artist
- 13) Cultural Heritage Protection officer
- 14) Landscape architect
- 15) The National Cultural Heritage architectural restoration expert

16) The State Administration of Cultural Heritage architect

17) Architects from selected private companies

18) JSC “National Real Estate” director

19) Representative of Regional Studies and Art Museums

20) Doctor in history

21) The researchers and enthusiasts

22) Object residents

Execution of these project are supervised by:

1) Building specialists

2) Project officer

3) Economist

After the Cabinet No. 474 - 56. restoration, reconstruction, repair and conservation works of a cultural monument may be performed only under the management of a competent specialist. The competence of natural and legal persons shall be certified by the relevant licence or a certificate for performance of restoration works. Archaeologists shall be invited for works on archaeological monuments.

In Latvia there is one institution that is accredited to issue certificates of “2.4.2. restoration work on the management and supervision.

Latvian Union of Civil Engineers Construction specialist certification authority

Kr.Barona street 99 – 1a#

Riga

1012

T: 67845910

F: 67845929

<http://www.building.lv/lbs>

To obtain certificate in this authority following documents must be submitted:

- A completed set of application form;
- Formal education (a copy of diploma);
- Proof of practice (details about building practice, according to Cabinet's 2003. 8th July Regulation No. 383 section 6.3.) in specialty to be certified according form;
- The head of institution, where the builder's practice has taken place, order, or order copy of the certified building expert appointment form of the applicant's building practice program realisation.

Proof of work in restoration practice need to be submitted to receive certificate in *restoration work management and construction supervision of restoration works*: Cultural Heritage recommendation letter; the employer and certified restoration manager(supervisor) confirmed list of objects.

- Administrator defined amount of money must be paid.

According Cabinet regulation Nr.474 – 52 any restoration cant be started without permission from State Inspection for Heritage Protection.

According Cabinet regulation Nr.474 – 54, i If a cultural monument is also a nature monument of State significance and a modification of such monument is intended during restoration, reconstruction or conservation, the works may be commenced only after a written co-ordination thereof with the administration of a specially protected nature territory or, if no such

administration exists, with the relevant regional environmental board.

According Cabinet regulation Nr.474 – 56, cultural monument restoration, reconstruction, repair and conservation can performed only under the management of a competent specialist. The competence of natural and legal persons shall be certified by the relevant license or a certificate for performance of restoration works.

According Cabinet regulation Nr.474 – 56, archaeologists shall be invited for works on archaeological monuments.

Before the cultural monument restoration, preservation, reconstruction work, owner (holder) has to complete an application for construction and has to submit it to regional City Construction Board.

Around 50 companies are involved in restorations of historic buildaings in Latvia. The source for updated informations can be found on:

http://www.lursoft.lv/lapsaext?utf=1&act=URCP&ref=LurTop&l=LV&cp=3®code=&task=search&node=&company_name=&name=restaur%C4%81cija&tipas=&general=restaur%C4%81cija&cid=LVA_NG_PROD

Structure of education system

School education

After nine years of basic education, secondary education is provided in general

secondary schools, vocational schools, and vocational secondary schools. General secondary schools award the Certificate of General Secondary Education (Atestāts par Vispārējo Vidējo Izglītību). Vocational schools (2–3 years) award Certificates of Vocational Education. Vocational secondary schools award a Diploma of Vocational Secondary Education which is also valid for university entrance.

Technical colleges or similar institutions in Latvia in which craftsmen of building, renovation or similar specialties are educated:

1) Riga Construction college

Study program:	restoration
Study level:	1st level professional education 10T (3 years)
Study credits:	120
Previous education:	secondary/vocational secondary
Qualification after graduation:	restorer with specialisation
Further education:	Latvian University of Agriculture
Profile:	cultural heritage

2) Rezekne Art and Design secondary school

Study program:	restoration
Study level:	3d level professional education 30T (4 years)
Study credits:	not mentioned
Previous education:	basic education
Qualification after graduation:	restorer assistant
Further education:	not mentioned
Profile:	specialised in work with wood

Higher education

There are 34 state recognised higher education institutions in Latvia. All the recognised institutions enjoy autonomy. Recognition of higher education institutions and programmes is based upon quality assessment, which is carried out as self-assessment followed by an evaluation visit with the participation of foreign experts. Higher education institutions confer academic degrees and professional higher education qualifications. Academic higher education programmes are based upon fundamental and/or applied science; they usually comprise a thesis at the end of each stage and lead to the degrees of Bakalauris (Bachelor) and Maģistrs (Master). The

Bachelor degree is awarded after completion of the first stage of studies. Since 2001, professional Bakalauris and Maģistrs can also be awarded. The degree of Maģistrs (or its equivalent) is required for admission to doctoral studies. According to the Law on Professional Education and the Law on Higher Education Establishments there are several types of higher professional education programmes in Latvia – first-level professional higher education programmes (also called college programmes) and second level professional higher education programmes which are considered as “completed” professional higher education and lead to the second-level professional higher education.

Higher educational institutions in Latvia in which specialists of cultural heritage, architecture, building renovation are educated:

1) Riga Technical University, Faculty of Building and Civil Engineering

Study program:	civil engineering
Study level:	professional bachelor's (4,5 years)
Study credits:	180
Previous education:	secondary/vocational secondary
Qualification after graduation:	professional bachelor's degree in construction engineering and construction profession
Profile:	includes study subjects: Reconstruction and Restoration of buildings Buildings Elements Protection Diagnostics of building

2) Riga Technical University, Faculty of Building and Civil Engineering

Study program:	civil engineering
Study level:	master's degree of higher professional education (1 year)
Study credits:	40
Previous education:	professional bachelor's degree in construction engineering bachelor's degree in civil engineering or equivalent education
Qualification after graduation:	professional master's degree in construction or professional master's degree in construction engineering and construction profession
Profile:	includes study subjects: Technology of Building Repair Works buildings Buildings Elements Protection

3) Art Academy of Latvia, Art of Science section, Restoration under section

Study program:	art science
Study level:	professional bachelor's (4 years)
Study credits:	160
Previous education:	secondary
Qualification after graduation:	bachelor of arts (humanities)
Profile:	art work restoration

4) Art Academy of Latvia, Art of Science section, Restoration under section

Study program:	art science
Study level:	professional master's degree (2 years)
Study credits:	80
Previous education:	Bachelor's Degree in Arts (or a related field) and successfully evaluated in the study design.
Qualification after graduation:	master of arts (humanities)
Profile:	art work restoration

Types of higher education institutions

Universitāte (University), Akadēmija (Academy), Augstskola (Higher Education Institution), Institūts (Institute), Koledža (College)

Languages of instruction:

Latvian, Russian, English

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level

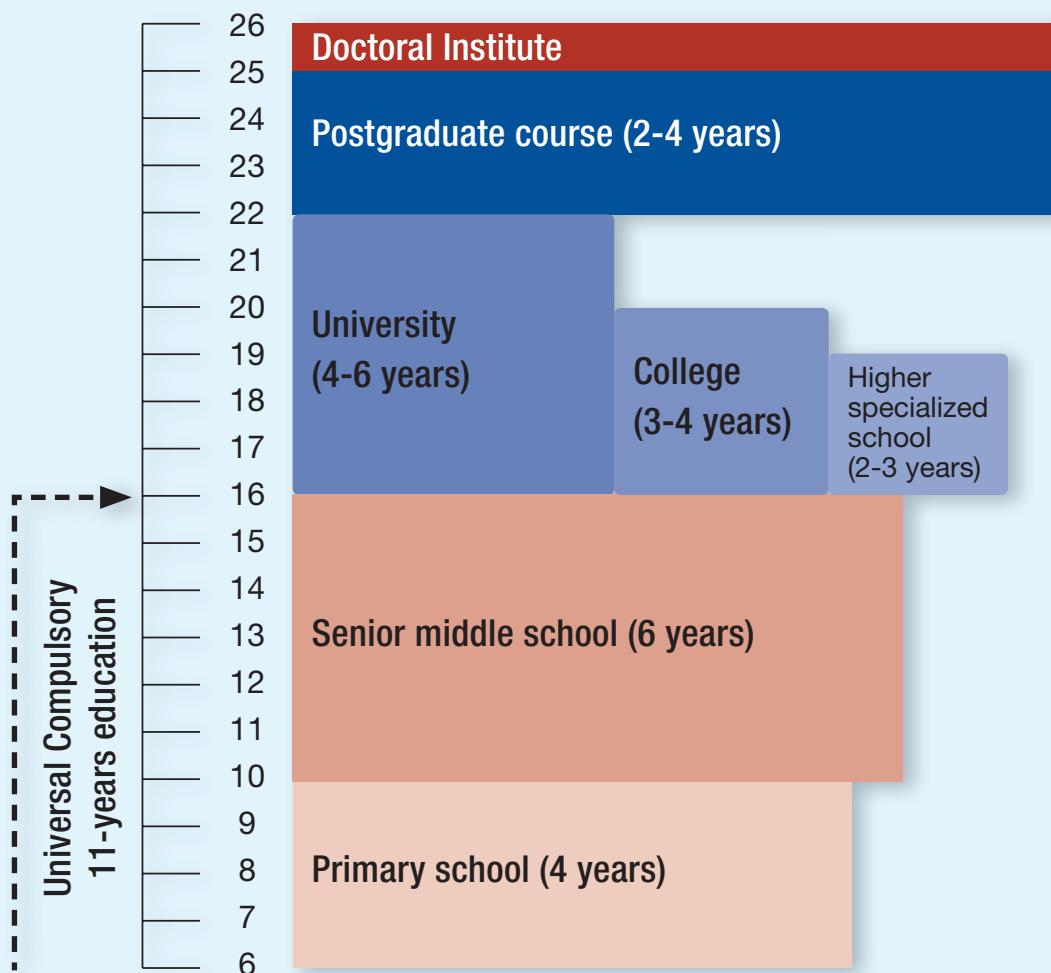
Since 1999, studies in "college programmes" of two- to three-years' duration leading to a first-stage higher professional education Diploma are available. These lead to Level IV

professional qualifications. Holders are eligible to continue their studies towards the Bachelor's Degree or a (full) Higher Professional Education Diploma. Second level professional higher education comprises professional higher education study programmes lasting between four and six years.

University level studies

The first cycle leads to the award of a Bachelor's degree, which in most cases includes the preparation of a thesis. The duration of studies varies from three to four years. The second cycle leads to the award of the Master's degree.

LATVIA's education system



Public opinion on restoration of historic monuments

Public opinion on the restoration is divided. There is positive perception of a significant monument restoration, but a negative perception of spending money for the restoration, when the money is missing for the more important economic projects. Public opinion is based on a summary of readers comments on the articles associated with the restoration of monuments and heritage buildings from source TVNET (link <http://www.tvnet.lv/search?q=restaur%C4%81cija&site=&fd=&td=&ie=0>)

1) Riga Dome Church restoration (total comments: 1)

- Church officials spend taxpayers' money during the crisis

2) Cemetery of the Brethren restoration (total comments: 16)

- Sanctuaries must be tidy and the money must be spent for that purpose
- The granted money will be "put in pocket"
- Need to continue work in collaboration with the students who does restoration work for less pay, but the money must be spent accordingly
- This should be done when the Latvian economy will have less bureaucracy and other problems

3) Durbe castle restoration (total comments: 8)

- The fact that old buildings are being restored brings joy, historical heritage must be preserved
- Must be wary of the privatisation

In most popular Internet news sites TVNET and DELFI and the newspaper Diena present event description, but no discussion. The public is being informed, of new or existing projects related to restoration, on average, twice a month.

Capital city Riga has a lot of heritage buildings and sites that for many years have been left unattended including industrial buildings that face an option being rased or saved partially and reconstructed if possible for other uses. Castles, museums, art galleries and similar objects in Riga and around Latvia have brighter future as they can be restored and used as tourism objects.

For solid brick wall buildings in Latvia usually have wide enough walls not to need insulation from outside, so insulation is usually added from inside. On outside for heritage buildings mortar is used to renew the gaps between bricks and in that way preventing air leakage from joint cracking. Interior insulation depends on type of original finish. If wall has wide enough cavity for insulation material, than it is used in that cavity.

Exterior brick wall are treated with vertical jet and manual cleaning, to reduce damage done to carbonate layer which appears on bricks in aging process and is layer that prevents bricks from further damaging. One way used to restore visual appearance of the

bricks are with gentle manual brushing, mineral pigment alcohol lasures and Porosil ZTS for consolidation. Lasures are used after cleaning to retrieve the original look of bricks and consolidation is used to make bricks resistant again filling empty spaces made from cleaning bricks.

Responsible authorities

Authorities responsible for education

Izglītības un Zinātnes Ministrija (Ministry of Education and Science)

Responsible for long-term planning of higher education, as well as for assessment, organisation and administration and funds allocation

Valnu iela 2

1050 Riga

Latvia

Tel: +371(7) 047 810

<http://www.izm.gov.lv>

Augstākās Izglītības Padome (Higher Education Council)

Meistaaru iela 21

1050 Riga

Latvia

Tel: +371(7) 223 392

<http://www.aip.lv>

Latvijas Rektoru Padome (Latvian Rectors' Council)

Raina Bulv. 19

1586 Riga

Latvia

Tel: +371(7) 034 338

<http://www.aic.lv/rp>

Augstākās izglītības kvalitātes novērtēšanas centrs (Higher Education Quality Evaluation Centre)

Valnu iela 2

1050 Riga

Latvia

Tel: +371(7) 213 870

<http://www.aiknc.lv>

European Affairs Department, Ministry of Education and Science

Principal national body responsible for dealing with international cooperation and exchanges in higher education

Valnu iela 2

1098 Riga

Latvia

Tel: +371(7) 047 807

<http://www.izm.lv>

Participation of country in multilateral or bilateral higher education programmes

BALTIC PILOT PROJECT, BALTIC SEA PROJECT, LEONARDO DA VINCI, SOCRATES, TEMPUS

Lithuania

Area: 65 200 km²

Population: 3.21 million

Population density: 50/km²

GDP total: € 44.839 billion

GDP per capita: € 9 236

Average income: € 3 679

Represented by:

PP20, Vilnius Gediminas Technical University



LT



Lithuania

Labour market conditions

The structure of Lithuanian labor market could be described as follows:

- Officially employed
- People who are officially registered as unemployed and receive unemployment benefits
- Unofficial unemployment (a short work time, compulsory holidays, never registered in labor exchange.)
- Unofficial labor market. Black labor market
- Firms which do not pay taxes and social insurance

Throughout the first half of 2011, the labor exchange database registered 89100 vacancies, including 35000 for temporary jobs and 54100 for permanent jobs. Compared to the first half of 2010, offers of temporary jobs had increased by

27.3% while vacancies for permanent jobs had increased by 35.9%.

Compared to the first half of 2010, the percentage of vacancies increased in the service sector by 3.2% and by as little as 0.1% in construction.

According to the data of the Lithuanian Labour Exchange, poor employment opportunities exist for:

Specialists: environmental engineers, primary school teachers, lawyers, economists, social pedagogues, psychologists, tourism managers and agronomists.

Workers: forklift truck drivers, filling station operators, florists, carpenters, hairdressers, manicurists and beauticians.

Occupations most frequently listed as job vacancies in Lithuania

Heavy truck and lorry drivers, Bricklayers and stonemasons, Floor layers and tile setters, Stall and market sales persons, Civil engineers, Painters and related workers, Carpenters and joiners.

One of the most important conditions for an increase in employment is skilled work force, able to adapt to market changes. Current information suggests that in Lithuania employees have quite a high level of education. However, of the unemployed registered with state employment exchanges, around 40 % are not ready for the labor market, have professions which are not in demand or no trade at all.

With the appearance of many employment opportunities created by new, evolving sectors, there is a need for higher levels of qualification and technical experience. The greatest demand for labor is in the services sector (50 %) and industry (30 %). 14 % of all job vacancies are in construction, with 6 % in agriculture.

Brain drain and labour migration

According to sociological research data the most educated group of population have the highest rate of willing to leave Lithuania, the highest choice of migration channels. According to survey results nearly 2/3 of Lithuania's adult population would like to move abroad, 75 % of them as the main reason indicate "work". As legal employment abroad is hardly possible, majority of migrants move for illegal employment

– according to census data no less than 100.000 of LT citizens are staying in foreign countries illegally.

Generally, according various economic sectors, average salary in Lithuania is 73 – 92 % behind the old-timer members of EU.

Labour market training centres

Training curricula are being matched to the employers' requirements for skilled workers. During the training process the participants are encouraged to take responsibility, they are offered a chance to acquire work experience, to change profession, to get professional advice, etc. Since the demand for labor in different fields is constantly changing, only a limited number of job-seekers can find employment without choosing a new profession or refreshing their skills.

Systematic labor market vocational training is a rather new phenomenon in Lithuania, and the requirements are increasing as a result of structural changes in the Lithuanian society.

Many Lithuanians are learning new jobs and new skills in the non-formal adult educational system through the LAAE project "Competence Recognition – for the Development of Opportunities in Matching Career with Family". This project aims to match the experience and abilities of people who are unemployed due to family or other reasons with real opportunities in labour market. The project is supported by the European Community initiative EQUAL. [19, 20, 21]

Structure of education system

School education

The school education system covers; preschool (ikimokyklinis); general secondary (bendrasis vidurinis), vocational (profesinis), junior college (aukštesnysis), higher (aukštatis) and adult education (suaugusiųjų švietimas). These types of education are offered at: preschool education establishments (ikimokyklinio ugdymo įstaiga), schools of general education (bendrojo lavinimo mokykla), institutions (įstaiga), enterprises (įmonė) of vocational education (profesinis mokymas), junior colleges (aukštesnioji mokykla), higher education institutions (aukštoji mokykla), and institutions of complementary and non-formal education (papildomo ugdymo ir neformaliojo švietimo įstaiga). Education at state and municipality general education schools, vocational schools and junior colleges is free of charge. There are also other types of establishments providing general secondary education: gymnasiums (gymnazijos) and international baccalaureate (IB) schools. Gymnasiums admit all applicants who have completed eight grades in a general education school. Gymnasiums have a four-year curriculum. The IB schools have a 2-year curriculum and English as their language of instruction. General secondary education can also be acquired at youth and vocational schools of appropriate level. Youth schools provide lower secondary education to 12- to 16- year-old pupils who have trouble in adapting to society, learning problems or those who have interrupted

their studies. Adults can acquire general secondary education at adult general education schools (mokymo centras) and in special classes at general education schools (klasė).

Higher education

There are two types of higher education institutions in Lithuania: universities and colleges. In university-type institutions (akademija; seminarija; aukštoji mokykla), university-level studies dominate; in colleges, non-university-level studies dominate. Higher education institutions can be of two types: state and non-state. Non-state higher education institutions can carry out their practice according to a licence issued by the Government. Studies follow the programmes registered by the Ministry of Education and Science. The quality of the programmes as well as the educational and scientific activities of higher education institutions are periodically assessed by the Centre for Quality Assessment in Higher Education. There are three modes of study: daytime, evening and extra-mural.

Admission to higher education institutions

To apply to undergraduate programmes, the student must hold a secondary or equivalent education certificate. To apply to graduate programmes, the student must hold a Bachelor or equivalent degree.

Languages of instruction:

Lithuanian, English

Non-university level post-secondary studies (technical/vocational type):

LITHUANIA's education system

24	Higher Education	Universities and Institutes	Public Institutions: 34		Technical Vocational Education Training
23			• Universities: 15		
22			• Institutes: 19		
21			• Branch: 5		
20			Private Institutions: 54		
19			• Universities: 26		
18	• Institutes: 28				
17			Grade 12	Exam	
16			Grade 11		
15			Grade 10		
14			Grade 9	Exam	
13	Lower Secondary		Grade 8		
12			Grade 7		
11	9-year Basic Education	Primary	Grade 6		
10			Grade 5		
9			Grade 4		
8			Grade 3		
7			Grade 2		
6			Grade 1		
5	Pre-School		High Step		
4			Medium		
3			Step		
Age			Lower Step		

Non-university level

Studies last from 3 to 4 years. To be admitted, students should hold a Maturity Certificate (Brandos atestas) or a comparable qualification. Studies lead to a professional qualification (profesinė kvalifikacija) and upon completion a higher education diploma (Aukštojo mokslo diplomas) is awarded.

Non-university studies are one-level (undergraduate) professional studies which train for a professional activity. The qualification obtained after completion of non-university higher education programmes does not give the right to enter

university second cycle (graduate) studies.

Non-university higher education studies can be transferred as an appropriate part of university first cycle or integrated studies on a course-by-course evaluation basis.

Teacher education

Training of pre-primary and primary/basic school teachers

Pre-primary and primary school teachers are trained at higher education institutions.

Training of secondary school teachers

Secondary school teachers are trained at Vilnius University, Vilnius Pedagogical University, Šiauliai Pedagogical University, Vytautas Magnus University (in Kaunas) and Klaipėda University. Four-year course programmes are offered in certain other tertiary institutions. Master's degrees confer the right to teach in gymnasiums and colleges. Admission is on the basis of a Bachelor's degree and at least one year of teaching experience. Some higher education institutions offer study programmes leading directly to a teacher's qualification, others one-year courses to obtain the qualification of teacher after completing the regular study programme.

Training of higher education teachers

A Doctorate is required for teaching in higher education institutions. A Master's degree is needed to begin a career as a teacher in a higher education institution. The Habilitation is also required for certain posts in universities or other research institutions (e.g. professor, researcher).

Non-traditional studies

Distance higher education

Course programmes are conducted by transmitting to the student specially prepared learning materials through the postal services. Various virtual environments were introduced and are developed by universities.

Lifelong higher education

The Ministry of Education and Science has licensed 90 institutions to offer non-formal

studies. Around 700 institutions are listed in the Register of the Ministry of Economy for adults and others. These include 63 state-owned companies, 288 joint-stock companies, 271 individual companies and 46 foreign investment companies. In addition, special departments for adult training have been set up in the universities. The courses offered include training and retraining, particularly in the fields of pedagogy, psychology, special or additional education etc. [22]

Responsible authorities

Authorities responsible for education

Ministry of Education and Science (Lietuvos Respublikos švietimo ir mokslo ministerija)

A. Volano g. 2/7
01516 Vilnius
Lithuania
Tel: +370(5) 2743080
<http://www.smm.lt>

Department of Science and Studies, Ministry of Education and Science (Lietuvos Respublikos švietimo ir mokslo ministerijos Mokslo ir technologijų departamentas)

Sierakausko g. 15
03105 Vilnius
Lithuania
Tel: +370(5) 2663444
<http://www.mokslas.lt>

Lithuania

Centre for Quality Assessment in Higher Education – Lithuanian ENIC/NARIC (Studiju kokybes vertinimo centras – Lietuvos ENIC/NARIC)

Suvalkų g. 1
03106 Vilnius
Lithuania
Tel: +370(5) 2104777
<http://www.skvc.lt>

Lithuanian University Rectors' Conference (Lietuvos universitetu rektorių konferencija)

Gedimino pr. 3
01103 Vilnius
Lithuania
Tel: +370(5) 2120629
<http://www.lurk.lt>

Lithuanian College Directors' Conference (Lietuvos kolegijų direktorių konferencija)

J. Jasinskio g. 15
01111 Vilnius
Lithuania
Tel: +370(5) 2496320
<http://www.kolegijos.lt>

Science Council of Lithuania (Lietuvos mokslo taryba)

Gedimino pr. 3
01103 Vilnius
Lithuania
Tel: +370(5) 2124933
<http://www.lmt.lt>

National Examination Centre (Nacionalinis egzaminų centras)

M. Katkauskas g. 44
09217 Vilnius
Lithuania
Tel: +370(5) 2756180
<http://www.nec.lt>

Lithuanian State Science and Studies Foundation (Lietuvos valstybinis mokslo ir studijų fondas)

Goštauto g. 12 – 407
01108 Vilnius
Lithuania
Tel: +370(5) 2639152
<http://www.vmsfondas.lt>

Poland

Area: 312 685 km²

Population: 38.19 million

Population density: 120/km²

GDP total: € 351.175 billion

GDP per capita: € 9 219

Average income: € 5 443

Represented by: PPI6, European Foundation for Monuments Protection



PL



Poland

Labour market conditions

The working population of Poland is Central Europe's largest and youngest. With 50 % of society under the age of 34 and 38 % under the age of 25 years, it is also the leader of the whole continent. This translates into an approximate 13m young and well-educated people entering the labour market in the near future. Rapid economic development and a huge amount of foreign investments make Poland need a large number of qualified production employees and engineers. The labour market is stabilising while the average income is rising. In 2008, the average monthly salary in the business sector for example added up to approximately EUR 760, while in 2009 it reached an amount of about EUR 785. The employment index in Poland is 87 % of EU15 level and 91 % of new Member States level. The reason for these discrepancies is

low utilisation of Polish labour resources.

This is mainly due to high unemployment

among the oldest and the youngest workers.

The employment breakdown by sector is also important. [24]

Changes in Poland in recent years have led to a large increase in young people completing secondary education and people aged 19 to 24 years pursuing university studies. This has, to a large extent, been made possible by private, fully paid, colleges, that meet the huge demand for university-level courses. Poland provides a nationwide network of 457 centres of higher education which trains almost 2 m. students. It consists of 131 public higher education academies including 18 universities, 19 universities of technology, as well as 326 private schools of tertiary education.

Structure of education system

School education

The current education system has been existing and running in Poland ever since the reform was introduced in 1999. Prior to that, primary education lasted for 8 years, secondary general education was provided in the four-year system by general lyceum, vocational lyceum or technical lyceum, or 5 years of secondary technical school. Graduates of all secondary schools were awarded either the Maturity Certificate of a given kind of secondary school or Certificate of Completion of Education in the given kind of secondary school. There were also basic vocational schools whose graduates obtained the Certificate of Completion of Education in the basic vocational school.

After the reform, the system underwent some significant changes. 6-year primary schools and 3-year gymnasia were replaced by 8-year primary schools. Secondary education is provided in 3-year general lyceums or in vocational secondary schools such as the 3-year specialised lyceum and 4-year secondary technical school. In addition, there are 2–3-year basic vocational schools whose graduates obtain the Certificate of Completion of Education in the Basic Vocational School.

Higher education

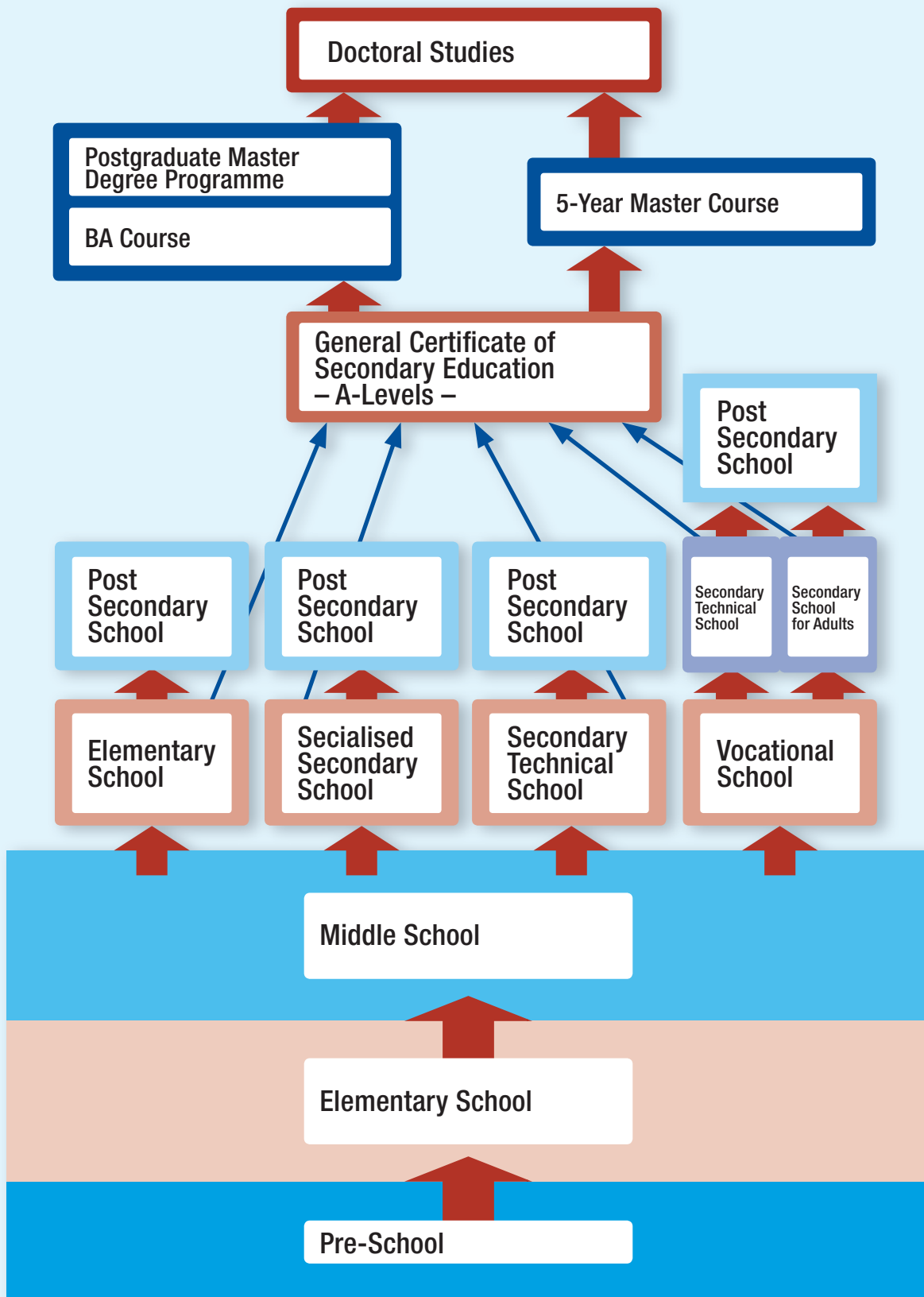
The higher education system comprises of public and non-public schools. There are two types of professional education institutions in Poland: university-type and non-university type.

Graduates of the first level courses are awarded the professional title of bachelor's or engineer after 3–4 years of study. Graduates of the second level courses are awarded the master degree after completing the next 1,5–2 years. There are also uniform 5-year level courses leading to a master degree. Higher education is managed at the level of ministries of education, but there are several types of schools managed by other ministries. The Ministry of Health manages the medical academies and the Ministry of Culture manages the academies of music, fine arts, theatre, and film studies. The total number of state higher education institutions is 129 and there are 303 non-state higher education institutions. Admission to higher education is based on the result of the Maturity examination and, in several schools, through entrance examinations and checking the knowledge and abilities which were not tested in the previous examinations.

Types of higher education institutions

- University
- Technical University
- Academy of Medicine
- Teacher Training Academy
- Academy of Agriculture
- Academy of Economics
- Academy of Music, Fine Arts, Theatre, and Cinematography
- Teacher Training School
- Academy of Physical Education
- Academy of Theology
- Merchant Navy School
- Military School
- State School of Higher Professional Education
- Non-State School of Higher Professional Education

POLAND's education system



Languages of instruction:

Polish

Stages of studies

Non-university level post-secondary studies (technical/vocational type):

Non-university level education in Poland is provided by post-secondary schools and post-secondary degree schools, which provide 1,52 – 32 years of education in a variety of vocational fields. The graduates obtain the certificate of completion of education in post-secondary school and then, after examination, vocational title diploma. The post-secondary schools train only nurses and midwives, and the graduates are awarded the diploma of completion of education in the post-secondary school.

University level studies

Graduates of the first level of study are awarded the professional title of bachelor or engineer following a thesis or diploma project.

Graduates that complete the second stage of study are awarded the master degree or one of its equivalents after submitting and defending a thesis or a diploma project.

Teacher education

Pre-primary and primary/basic school teachers are trained in teacher training college or foreign language teacher training colleges. The graduates are awarded the diploma and bachelor degree which gives them the opportunity to work in gymnasiums and primary schools. For the position of secondary school teachers,

holders of a Master degree or its equivalent, who have pursued a pedagogical course, are eligible. Language teachers can also be trained in foreign language teacher training colleges. It also gives them a diploma and appropriate professional qualifications. As for teachers at the university level, they are recruited among the holders of a doctor degree. Academic teachers of lower grade can be graduates of higher education institutions.

Authorities responsible for education (contacts and addresses)

Ministry of Education and Science

al. Szucha 25
00-918 Warszawa
Poland
Tel: +48(22) 5224100
<http://www.men.gov.pl>

Conference of Rectors of Academic Schools in Poland

Biuro KRASP, Jagiellonian University
ul. Straszewskiego 27
31-113 Kraków
Poland
Tel: +48(12) 4218290
<http://www.krasp.org.pl>

Central Council of Higher Education

al. Szucha 25
00-918 Warszawa
Poland
Tel: +48(22) 6218478
<http://www.rgsw.edu.pl>

Poland

State Accreditation Commission

ul. Żurawia 32/34

00-515 Warszawa

Poland

Tel: +48(22) 6220718

<http://www.pka.edu.pl/>

**Bureau for Academic Recognition and
International Exchange –**

ul. Smolna 13

00-375 Warszawa

Poland

Tel: +48(22) 8267434

**Participation of country in
multilateral or bilateral higher
education programmes**

Ceepus, Erasmus, Socrates, Tempus

Sweden

Area: 449 964 km²

Population: 9.35 million

Population density: 20.6/km²

GDP total: € 253.254 billion

GDP per capita: € 35 927

Average income: € 25 871

Represented by: PP5, The Stockholm Cultural Administration/Stockholm City Museum; PP6, Energy Agency for south-east Sweden; PP7, Swedish National Heritage Board, Depart-



S

Sweden

ment of Conservation; PP8, City of Malmö, Environment Department

Structure of Swedish Education System

School education

The Swedish state school system comprises compulsory school and various types of voluntary schooling. Compulsory school includes nine years of compulsory basic school, school for the Saami people of Northern Sweden, special school and compulsory school for the mentally handicapped. Post-compulsory education is offered through 17 National Programmes providing qualifications that allow students to go on to higher education. Some of these programmes also include industrial work placements. The National Programmes of

upper secondary education are offered at Gymnasia and lead to the award of the Slutbetyg Från Gymnasieskola. Tuition is free.

Outside the upper secondary school system there are Folk high schools (Folkhögskolan) which provide state-supported adult education lasting between one and three years of studies. There are no formal examinations.

Post-secondary studies include advanced vocational training (Kvalificerad yrkesutbildning) which is intended to meet the labour market's needs for the skills required for modern production of goods and services. About one-third of the course period takes place at the workplace. As from January 2002, this form of training is a permanent part of the Swedish educational system but does not belong to the higher

education sector. Admission is based on three-year upper secondary education or corresponding proficiency. The training is normally intended to correspond to two years of study and leads to a Certificate of Advanced Vocational Training (Kvalificerad yrkesexamen).

Higher education

The Swedish system includes not only traditional university studies, but also Teacher Training, Health Care Training, Technical Training, etc. It is the responsibility of the central government, regional authorities and private interests. All higher education institutions fall under the jurisdiction of the Ministry of Education except for the University of Agricultural Sciences (Ministry of Agriculture). Higher education is divided into undergraduate studies (courses combined towards a first degree) and postgraduate studies and research.

Types of higher education institutions

Universitet (University)
Högskola (University College)

Languages of instruction:

Swedish, English

Stages of studies:

University level first stage:

Undergraduate studies

All basic higher education is offered in the form of courses. The Diploma (Högskoleexamen) is awarded after the completion of two years' full-time study. It is awarded by all universities and higher

education institutions. The Bachelor's Degree (Kandidatexamen) is conferred after the completion of at least three years' full-time study.

University level second stage:

Postgraduate studies

The Licentiatexamen (Licentiate degree) requires two years of study and research including a larger thesis,

Teacher education

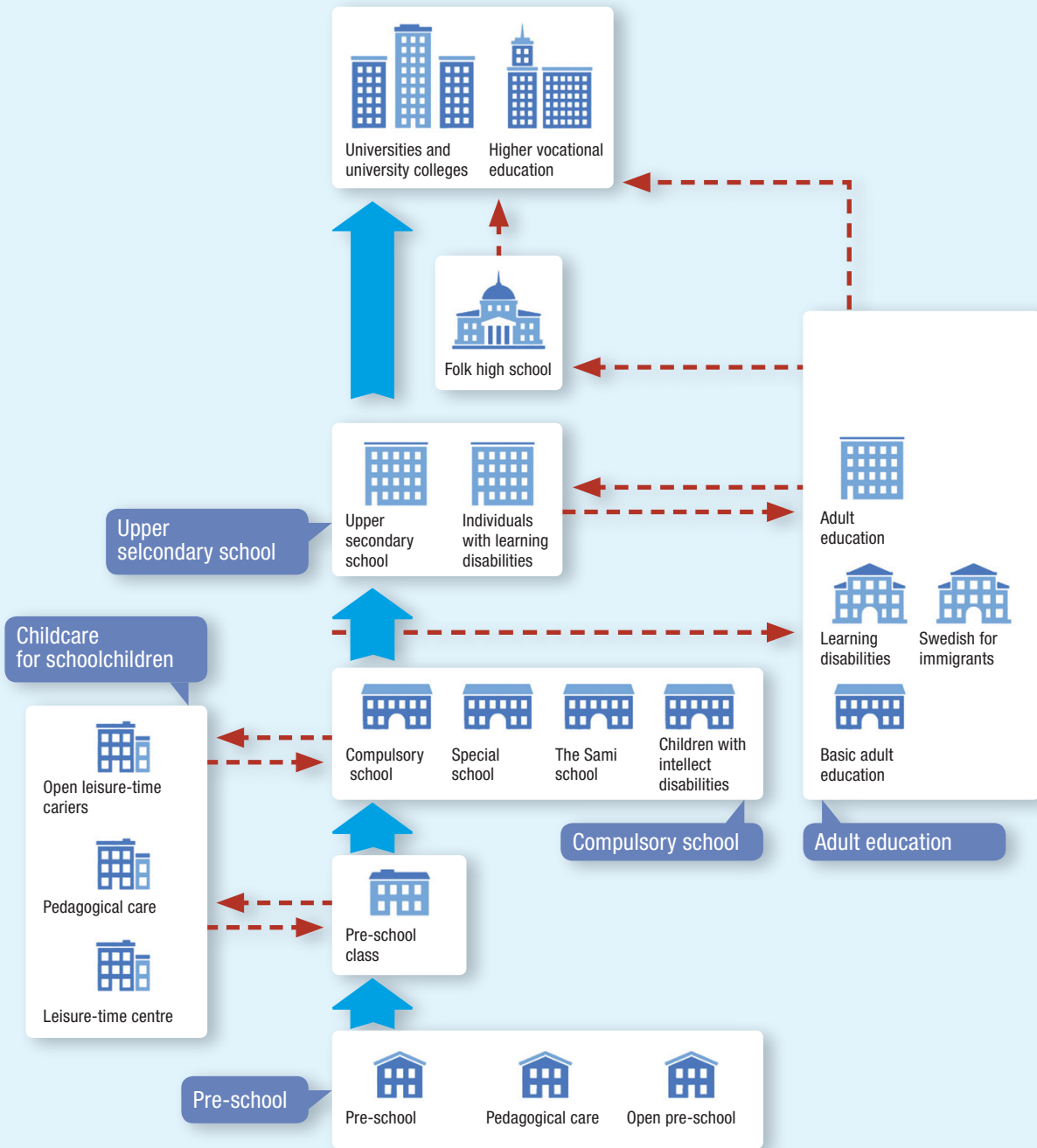
Training of pre-primary and primary/basic school teachers

A new teacher training programme was introduced on July 1 2001. It includes a 60-credit course in pedagogics, special education and teaching practice that is common to all students. There is, in principle, only one teaching degree (lärarexamen) for the public school but with different specialisations in terms of age groups, subject areas or other competences. The length of study for pre-school teachers and teachers at lower grades of primary/basic school is at least 140 credits.

Training of secondary school teachers

Teacher training for upper secondary schools (Gymnasielärarytelse) is based on a combination of subjects within often one and the same field, e. g. Mathematics-Natural Sciences, Languages, and Humanities. A total of 180 – 200/220 credits including pedagogical training are required. These subjects are studied up to a level of 60 or 80 credits. Instead of this integrated model for teacher training, it is also possible to follow a consecutive route. In this case, the

SWEDEN's education system



subjects are studied first at the university followed by a 60 credit education course (Kompletterande-Pedagogisk Utbildning, including pedagogics, teaching methods and teaching practice) at a teacher training institute/faculty.

The Bologna process

In Sweden the new education and qualification structure according to the Bologna process was introduced in 2007. There are three cycles. In the first cycle there is a Higher Education Diploma after two years and a Bachelor after three years. In the

second cycle there is Magister after one year and Master after two years. In the third cycle there is a Licentiate degree after two years and a Doctoral degree after four years. In parallel there are also Professional qualifications (e.g. Architect).

Non-traditional studies

Distance higher education

IT-supported higher education distance courses are offered by various higher education institutions in Sweden.

Lifelong higher education

At Folk high schools each school determines its own curriculum within the framework of the Folk High School Code. Some courses can qualify students for university studies. Studies focus on topic areas rather than on single subjects. Other forms are correspondence schools and courses organised by the broadcasting media. Formal adult education (Komvux), both general and vocational, is offered by the local education committees in all municipalities and in certain educational fields (e.g. the health sector) by county councils. Universities have comprehensive programmes for further education, including commissioned education, part-time and evening courses, as well as summer courses. [28, 29, 30]

Higher education training in industry

Industry cooperates with universities/ university colleges and vice-versa for industrial needs and also for the needs of the labour market.

Responsible authorities

Authorities responsible for education

Utbildnings- och kulturdepartementet (Ministry of Education, Research and Culture)

Overall development and planning of all higher education and research, supervision

Drottninggatan 16

103 33 Stockholm

Sweden

Tel: +46(8) 4051000

<http://www.sweden.gov.se/sb/d/2063>

Högskoleverket (National Agency for Higher Education)

Evaluation and analyses of higher education, quality issues, information, international issues (including mobility and recognition

PO Box 7851

Luntmakargatan 13

103 99 Stockholm

Sweden

Tel: +46(8) 56308500

<http://www.hsv.se>

Sveriges universitets-och högskoleförbund (Association of Swedish Higher Education)

Rådmansgatan 72

113 60 Stockholm

Sweden

Tel: +46(8) 321388

<http://www.suhf.se>

Myndigheten för Sveriges Nätuniversitet (The Swedish Net University Agency) –

Sweden

Information, marketing, coordination,
development of IT supported distance
education

PO Box 194

871 24 Härnösand

Sweden

Tel: +46 611349500

<http://www.netuniversity.se>

**Myndigheten för kvalificerad
yrkesutbildning (Swedish Agency for
Advanced Vocational Education)**

Central administrative authority for
advanced vocational training

Järnvägsgatan 3

281 31 Hässleholm

Sweden

Tel: +46 45145480

<http://www.ky.se>

Svenska Institutet (Swedish Institute)

PO Box 7434

Skeppsbron 2

103 91 Stockholm

Sweden

Tel: +46(8) 4537800

<http://www.si.se>

Information Service on Folk High School

PO Box 740

101 35 Stockholm

Sweden

Tel: +46(8) 7960050

<http://www.folkhogskola.nu>

**Department for Research Cooperation
(SAREC), Swedish International
Development Cooperation Agency (SIDA)**

Sveavägen 20

105 25 Stockholm

Sweden

Tel: +46(8) 6985314

<http://www.sida.se>

International Programme Office –

Principal national body responsible for
dealing with international cooperation and
exchanges in higher education

Kungsbrolan 3A

P.O. Box 22007

104 22 Stockholm

Sweden

Tel: +46(8) 4537200

<http://www.programkontoret.se>

The Swedish Institute (Svenska Institutet)

P.O. Box 7434

Skeppsbron 2

103 91 Stockholm

Sweden

Tel: +46(8) 7892000

<http://www.si.se>

**Participation of country in
multilateral or bilateral higher
education programmes**

ALFA, ASEM DUO, Comenius,
LEONARDO, Linneus-Palme (with
developing countries), NORDPLUS,
SOCRATES, TEMPUS

Labour market – Cultural Environment sector

Definition of employed in the cultural environment sector

Legislation (Heritage Conservation Act, Ordinance on state-owned historic buildings, Planning and Building Act and Building Regulations of the Swedish Board of Housing, Building and Planning) demands certain education and sometimes certification of those working with supervision and suggesting and performing measures. In this compilation we name them “cultural environment sector”.

The professional groups working when there are changes in cultural-historical valuable buildings are architects and historic building conservation officers but also engineers with supplementary education in cultural environment conservation. The architects with experience in working with old buildings and building technology were previously often named restoration architects. Today they often work as castle architects engaged by the National Property Board Sweden and responsible for changes made in one or several buildings managed by the Swedish state.

Historic building conservation officers can work as decision makers at authorities, e. g. Swedish National Heritage Board, Swedish Board of Housing, Building and Planning, National Property Board Sweden, the County Administrative Boards. Municipalities can have their own historic building conservation officers. There is also a

private market where they can work as self-employed or employees at museums, larger building companies or architect’s offices.

A historic building conservation officer participates in taking charge of and emphasising cultural-historical values. In a building process the historic building conservation officer contributes with knowledge about the cultural-historical values and how they are expressed in the single subject.

The historic building conservation officers can e. g. contribute with:

- consulting
- inventory of cultural environments
- antiquarian pilot study
- antiquarian consequence description / consequence analysis
- descriptions of cultural-historical values
- antiquarian control / participation
- management programmes, management and maintenance plans
- descriptions of measures.

The Heritage Conservation Act (KML), Planning and Building Act (PBL) and Building Regulations (BBR) of the Swedish Board of Housing, Building and Planning put demands on participation of an antiquarian expert when changes are made in a building with cultural-historical values. [26,27]

Estimation of historic building conservation officers on the labour market

It is hard to find or even roughly estimate the number of working historic building conservation officers today. We have also contacted the trade unions but they are lacking statistics. A statement could be made based on the number of persons educated in the area every year, but they might also be working in other areas or be absent from working life. Gotland University every year admits about 10 – 15 students and a varying number of them continue to graduate. University of Gothenburg admits about 25 students but the number graduating varies.

At the Swedish Board of Housing, Building and Planning's webpage about 82 certified historic building conservation officers are listed today with different positions at companies and museums.

National authorities

The Swedish Board of Housing, Building and Planning has 2 historic building conservation officers.

The National Property Board Sweden cultural heritage unit has 25 employees.

The Swedish National Heritage Board has at least 25 – 30 employees working with building conservation.

County level

In Sweden's 21 Country Administrative boards approximately 100 historic building conservation officers are employed.

The total number of Swedish museums exceeds 2000 (central, regional and local museums), but there is no data on the number of historic building conservation officers working there.

Church of Sweden with 11 dioceses has 9 historic building conservation officers employed.

Municipalities

In a questionnaire study about environmental goals made by the Swedish Board of Housing, Building and Planning in 2009 there was a question about to which degree the municipalities have access to antiquarian competence which 191 of 290 municipalities answered. Antiquarian competence was meant to be a person with relevant education and the work task to take charge of the values of the cultural environment through developing basic data and participating in the physical planning. In 62 per cent of the municipalities answering there was no access to antiquarian competence. Among the remaining 38 percent about four fifths have their own employed and the rest, one fifth, buy the competence. Irrespective the type of employment the access to competence is very limited – only a half-time post in more than half of them. Of those municipalities buying competence the majority does this only a little less than a day a week. There

were only 22 municipalities with a full-time employee.

Organisations

SPBA

Private practising historic building conservation officers are organised via the non-profit association SPBA (Sveriges privatpraktiserande antikvarier).

FIBOR – Building Conservation and Restoration, trade organisation

FIBOR is a trade organisation working with building conservation and restoration (FIBOR stands for Företag Inom Byggnadsvård Och Restaurering). FIBOR is an authorised trade organisation for consulting-firms and contract companies working in the building conservation area. All of the FIBOR companies have documented experience of working with qualified restoration. Documented competence gives security to the client.

FIBOR works to promote training, feedback of experiences and knowledge exchange.

FIBOR creates networks and collaborates with educational establishments.

FIBOR works to increase the real estate owners' as well as the public interest for requesting qualified building conservation.

Others working

Constructors, real estate managers (except the National Property Board Sweden), entrepreneurs, project leaders, persons

responsible for calculations, consultants, craftsmen etc. are not included in this review.

Labour market – Building energy sector

The building energy sector will not be described as detailed as the cultural environmental sector. The energy sector is very wide and the labour market is very large in Sweden and in many other EU countries. After education within the field of building energy it is possible to work as e.g. energy specialist, investigator or coordinator within the building industry, property companies or property departments in municipalities or other public organisations, architect and in consulting companies.

Almost all public and private organisations have staff working with energy related questions and it is possible to work on national, regional and more local level. In municipalities it is possible to work in building and planning departments, in the property department and as energy advisers. It is also possible to work with development of new energy technologies and renewable energy sources.

Another field of the labour market is of course the more practical one where energy projects in buildings are implemented and which consists of craftsmen, installation workers etc.

The number of involved on the labour market in the building energy sector is large and may be hard to define or estimate in the same way as for the cultural heritage sector.

The labour market for the combination of competence within both energy efficiency measures and consideration to cultural preservation is probably relatively low today but there is a potential of a growth. There is also need of raised competence in the combination of those two fields or a stronger cooperation between experts within energy efficiency and cultural preservation.

The legislation where EU directives within the energy field is implemented is the Planning and Building Act (PBL) and Building Regulations (BBR) of the Swedish Board of Housing.

Education

Requirements for competence in the cultural environment sector

Legislation (Heritage Conservation Act, Ordinance on state-owned historic buildings, PBL Planning and Building Act and BBR Building Regulations of the Swedish Board of Housing, Building and Planning) requires some training and sometimes certification of those in addition to supervision, perform and propose remedies. We call them “cultural environment sector” in this base line study.

Antiquarian participation

Heritage Conservation Act: The County Administrative Board makes decisions on actions in the churches, cultural and historical building or structure and contribution to the management of valuable cultural environments and can require antiquarian involvement. Participation may consist of developing cultural and historical

documentation, consulting, inspection, detailed instructions, monitoring, documentation, quality control, etc.

Castle Architects

Ordinance on state-owned historic buildings regulation on the state’s means the state building memories is under the National Heritage Board’s oversight. Managers can assign castle architecture of one or more memories in order to ensure a skilled nursing. SFV (State Property Board) manages approximately 60 % of the state building memories.

Peer controller of cultural values

Planning and Building Act (PBL) regulates the extension and modification activities of existing buildings that require permits. Municipal building council (elected officials) can require antiquarian involvement to give the applicant permission to start a building permit action.

The rules require theoretical knowledge, including knowledge of regulatory, practical experience and suitability for the task.

The National Housing Board by virtue of the Planning and Building Act, PBA Planning and Building Act, set requirements of the person to be certified. The actual certification process is not performed by the organisations (companies) who have been accredited for the purpose. At present there is a certification body accredited for this purpose: Det Norske Veritas Certification Ltd (DNV) in Stockholm.

Read more in the mandatory provisions and general guidelines for the certification of experts in how cultural values; BFS number: BFS 2011:15 - KUL 2.

Education for peer controller of cultural values

The number of credits is based on the Bologna model, where 60 credits represent a full academic year.

On behalf of the Board has the National Heritage Board in 2006 conducted a review of the then basic educations that was considered to meet the specified educational requirements

Bebyggelseantikvarieprogrammet (Building antiquarian programme) 160 credits at Gothenburg University.

Byggnadsvårdsprogrammet (Building conservation programme) 120 credits at Gotland University.

Programme of Architecture at Lunds University, faculty of engineering (Lunds tekniska högskola) with selectable focus on architectural conservation.

It is also possible to build a university degree where, such as for architects and structural engineers, the requirement is to complete the 60 credits with building antiquarian approach. Gotland University and the Royal College of Art in Stockholm have that kind of further education.

Certification of the expert, through many years of professional activity holds

theoretical knowledge equivalent to the training requirement is acceptable.

Education for employed in the cultural environmental sector

Much the same as for the peer controller of cultural values above.

For craftsmen the Crafts Laboratory (Hantverkslaboratoriet) can be mentioned.

In addition to these educations there are a number of courses at several educational organisations and universities across the country.

Level of education within the cultural heritage sector

The level of education will not be described in the base line study. Instead a suggestion is to discuss competence and level of education in further activities in WP 3 – 5, together with groups of experts and those with special knowledge in this field.

Swedish partners can refer to work and investigations made in this field in Sweden from which more detailed information can be collected and be helpful for later work in the Cool Bricks project. Within the research programme “Spara och Bevara” an interview based report is written investigating competence about energy efficiency in cultural historical buildings among employed in the cultural heritage sector.

Another relevant inquiry was made 2010 within the project KKBM about the general competence in the cultural environmental sector. There were

1440 persons working with cultural buildings and environments (also contractors and craftsmen). The results divided into the groups responsible for order, performer and consultant can easily be collected and used for further discussions in the project. One result from the inquiry is that there is an opinion of lack of competence for all groups and for all categories asked for in the inquiry. The responsible for ordering seem to have some more lack of competence than performers and advisers on a general basis. A large share of the respondents has had no further training during the last year. The largest share is among performers. A majority of the respondents is experiencing a need of increased cooperation between the involved in this field and there is a motivation for further training and education. Shorter kinds of training/ education are most attractive.

Requirements for competence in the building energy efficiency sector

Energy Experts

At an energy declaration, the energy expert collects data for the building. The need for measures is governed by if the expert's recommendations for measures may have negative effects on e.g. the indoor environment or the building's cultural value. The goal is always to reduce energy consumption.

It is the energy expert who proposes the energy efficiency measures. In small houses it is sufficient that the expert is aware of how the building's architectural and historical

values are influenced by the operation, for more complex buildings, they shall have knowledge of same.

The Swedish Board of Housing has regulations with general recommendations for certification of an Energy Expert (BFS 2007:5 CEX 1). There are signals of coming higher restrictions on energy declarations of buildings which also raise the need of increased competence of the energy experts.

There are also other groups than energy expert working with energy efficiency that should be described in more detail. The level of competence could and should also be described more in detail.

Education in the field of energy efficiency

All, or most of all, education programmes or courses in building technology at university or other educational organisations civil include directly or indirectly energy efficiency as the directives from EU and later the guidelines from Board of Housing, Building and Planning for energy efficient building practices are governing the design of course content. This means that those studying building technology should learn how to build energy efficient at least on the level used when evaluating permission for building permits.

Below there is a short and not complete overview of education within or about energy efficiency.

University (or similar educational organisation) programmes

- Bygghantverksprogrammet (Construction Craft Program), 180 credits, Gothenburg University
- Högskoleingenjörprogrammet i Byggt teknik (Bachelor Engineering Program in Building Technology), 180 credits, Umeå University (certain parts within property management contain economics, law, energy efficiency and elderly building technology)
- Högskoleingenjör i Byggt teknik, Byggnadsutformning (Bachelor Engineering Program in Building Technology, design of buildings), Linnaeus University (including the courses installation technology and rational use of energy)
- Högskoleingenjör i energi och miljö (Bachelor engineering program of energy and environment), Linnaeus University (including the courses installation technology and rational use of energy)
- Independent courses
- Energy efficiency, 15 credits, Umeå University
- Energy Technology, 7.5 credits, Mid Sweden University
- Energy efficiency, 7.5 credits, Halmstad University
- Systematic energy efficiency work, 7.5 credits, Mälardalen University
- Indoor climate and heating, 7.5 credits, University of Gotland
- Planning, building and conservation, 7.5 credits, University of Gotland
- Sustainable Management of Cultural Heritage, 7.5 credits, University of Gotland
- Energy and climate efficiency building, new course autumn 2012, Linnaeus University
- Vocational education:
- Energy Specialist Buildings, KYH Gothenburg & Malmö (include 5 credits of cultural historical buildings)
- Energy engineer, Arvika municipality
- Energy engineer, TUC, Tranås
- Operation engineer – House property, energy and water/sewage, Teknologisk Institut AB, Gothenburg
- Energy analysts – buildings, Yrkeshögskolan Kungsbacka
- Energy – property engineer, Folkuniversitetet Karlstad
- Energy engineer, Fastighetsakademin Sverige AB, Västra Frölunda

› Only few relevant education programs and independent courses for energy efficiency include energy efficiency of historical buildings. ‹

Conclusions

The educational systems of all participating countries are quite similar containing mostly three levels of education. There are also alternative education in all the countries where additional education is given (qualification courses for professionals, vocational training).

Co₂olBricks project interests concentrate mostly in higher education for craftsmen, university education, education of working professionals and education for general public (house owners, stakeholders, etc.).

Only few relevant education programs and independent courses for energy efficiency include energy efficiency of historical buildings. Either there is building engineering programs without concerning building preservation or there are separate programs for building conservationists with only small content of energy efficiency. There is a need for more education programs or certain courses that combine both building conservation and energy efficiency.

Not only the educational programs must be improved, but different target groups can be addressed and need deeper knowledge of historical brick buildings, historical values as well as knowledge and techniques of suitable measures to improve living conditions in those buildings. The main target groups can be:

- General public,
- stakeholders,
- building companies,
- officials (like building conservattion officers, municipality representatives responsible for culture heritage and national refurbishment programs),
- architects,
- building conservators,
- building supervising staff,
- energy auditors,
- teachers in universities,
- teachers in polytechnics, vocational training centers etc.,
- students,
- working craftsmen,
- apprentices.

Experts from Co₂olBricks project partner institutions have concluded that by today the general public is missing knowledge mostly from all target groups. The knowledge gaps are in history of brick masonry, understanding the value

and need of preserving original facades, understanding the dangers and damage which can be made by adding insulation to brick walls. General public is usually very interested about the possible subsidies for refurbishment of historical buildings and it can be the way to attract them to seminars, workshops or other educational events.

There is a common problem with calculating energy efficiency in comparable way. This problem is met by energy auditors and is relevant when dealing with buildings with historical value. It can be made more clear by setting general rules, common measurements etc. Such recommendations can be developed during project period. Knowledge of building physics and structural damage should be increased also for this target group.

There is usually a misunderstanding between architects and conservators on the parts of building to be preserved. In most of the BSR countries conservators don't have clear perspective of it and architects usually work with the connivance of their clients neglecting some of historically valuable elements in sake of making building environment more modern. Although building conservators usually don't lack knowledge of historical masonry, they require knowledge of damage patterns of brick masonry construction, knowledge of moisture regimen and insulation types, knowledge of alternative solutions for improving indoor climate without changing the building outlook (inside insulation, modern heating and ventilation systems, doors and windows etc.).

Architects specialise strongly in either new construction or refurbishing. Those who work with old buildings have usually very good understanding of cultural value, but their knowledge must be maintained and extended to new materials and repair methods. They also usually lack knowledge of possible damages the refurbishment of building can make to brick facades.

Our experts ranked energy auditors', university teachers' knowledge at a satisfactory level.

The new lecture materials must be developed to give the information to the different target groups and raise their level of understanding. The big concern is the knowledge and education of general public, house owners and stakeholders because they usually initiate and influence mostly the changes in valuable buildings. The missing knowledge can be divided into four main groups:

1. Cultural heritage and historic constructions.
2. Energy efficient refurbishment measures and technical services (heating, ventilation, indoor climate).
3. Quality Management and work planning.
4. Market opportunities.

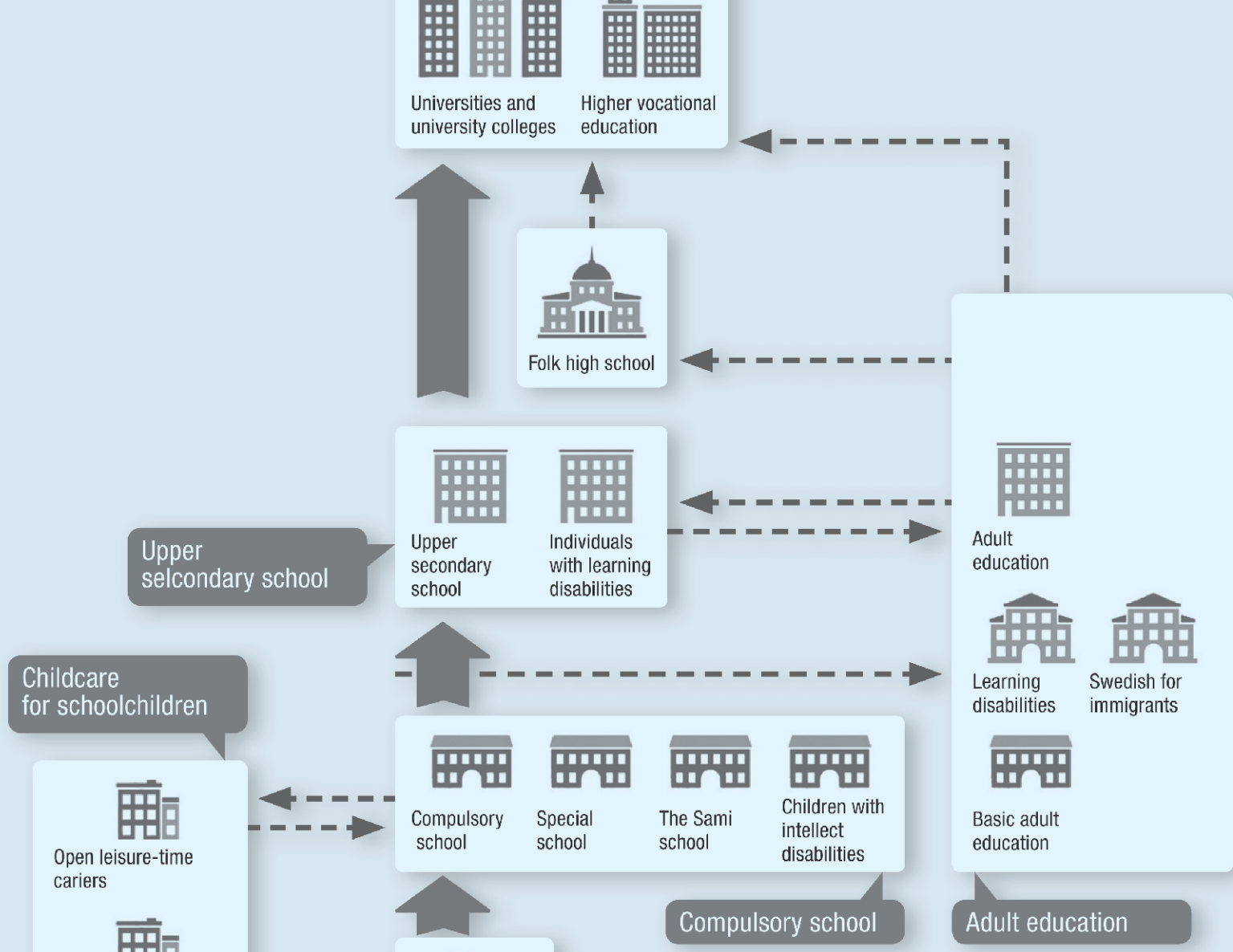
Table 1 shows the materials to be developed for different target groups.

Table 1 Need of additional knowledge for main target groups			
Topics	General Public	Craftsman	Specialists
1. CULTURAL HERITAGE	Small	Medium	Large
2. ENERGY EFFICIENCY	Medium	Large	Large
3. QUALITY MANAGEMENT	No need	Medium	Large
4. MARKET OPPORTUNITIES	Medium	Medium	Large

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- 29 The official gateway to Sweden, <http://www.sweden.se/eng/Home/Education/>
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Grosse Bleichen 30, 20354 Hamburg, Germany

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Co₂olBricks Baseline Study of Work Package 5

Lead Partner Vilnius Gediminas Technical University, 2012 · Phone: ++370 5 2744719, E-Mail: msk@vgtu.lt

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