

LEONARDO DA VINCI – LIFELONG LEARNING PROGRAMM – TRANSFER OF INNOVATION

CERTIFIED EUROPEAN E-TUTOR

COUNTRY REPORT – CZECH REPUBLIC

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Educational and vocational training system

The Charter of Fundamental Rights and Freedoms, which is a part of the Constitution of the Czech Republic, upholds the general right to education, the right to free education at primary, secondary and (depending on ability and capacity) university level. The main administrative responsibility stays with the [Ministry of Education, Youth and Sport](#), although more responsibilities were recently delegated to municipal and local authorities. Since 1990 establishment of private schools was made possible. Private schools receive a state contribution towards running costs and are allowed to charge tuition fees.

Pre-school education

Nursery schools (*mateřská škola*) may be attended by children from 3 to 6 years of age. They are established as day-care or half-a-day care centers. Even though attendance is not compulsory it includes 86% of the age group. Activities are focused on development of children's personalities, broadening knowledge and skills, familiarity with the world around and development of hygienic and social habits and communication skills, mostly through games and physical activities. Contribution towards costs may be required.

Compulsory education

School attendance has been compulsory since 1774. It lasts for a period of 9 years, usually from the ages of 6 to 15, mostly at the basic school (*základní škola*). Catchment areas are defined, but the choice of school is free. Pupils can leave a basic school at the end of the 5th year for an eight year *gymnázium* or at the end of the 7th year for a six year *gymnázium* after passing the entrance examination set by the school.

Lessons of 45 minutes are spread over 5 days a week. There are 22-25 lessons in a week in the first stage (year 1-5), 27-30 lessons in the second stage (year 6-9). The teacher-pupil ratio was 1:15.2 in 2001/2002, the average class size was 21.7 pupils. At the first stage, all subjects are taught by the same teacher, while at the second stage teachers usually specialise in two subjects.

The national teaching standards authority sets the objectives and the basic curriculum. To achieve them, various educational programmes can be employed when approved. There are three national programmes. Each establishment is free to use teaching methods and textbooks (from a list approved by the Ministry of Education, Youth and Sports). Pupils are assessed (by teachers) on the basis of written and oral performance (and homework) and classified on a scale of 1 to 5. Continuous assessment is summarised in a report at the end of each semester. Verbal assessment is authorised at the first stage of basic school. This kind of assessment is used by 8 % of teachers. Pupils demonstrating learning difficulties have to repeat the year. The drop out rate is 0.78 %.

Secondary education

There are three main types of secondary schools in the Czech Republic: general secondary school (*gymnázium*), secondary technical school (*střední odborná škola - SOŠ*) and secondary vocational school (*střední odborné učiliště - SOU*). A prerequisite for acceptance is successful completion of a compulsory education and successful meeting of the entrance requirements.

Gymnázium (ISCED 3A) provides a general, academic education. Its main aim is to prepare students for university studies. The duration is 4 years after 9 years of basic school, although there are also other types of *gymnázium* (see above).

At the end of their time at the *gymnázium* students take a final exam (*maturita*). 17.4 % of young people entering all types of secondary schools at the age of 15 enrol in a *gymnázium*. Besides that 7.95 % of the population group is enrolled in the *gymnázium* at a lower age.

A secondary technical school (ISCED 3A, B) usually provides a complete secondary vocational education which takes 4 years and concludes with a final exam (*maturita*) and sometimes also lower-level secondary vocational education (2- or 3-year courses). The school prepares students for technical work in one of about 260 branches. About 40 % of teaching time is devoted to general education and 60 % to vocational technical education. Practical lessons are taught in laboratories and workshops at schools. 37.5 % of youth enters this type of upper secondary school and this proportion is increasing.

Secondary vocational school (ISCED 3B) offers apprenticeship training mostly in 3-year (and sometimes 2-year or 1-year) courses ending in a final exam and apprenticeship certificate. Practical training represents about one half of teaching time and it aims at the acquisition of manual skills. The number of branches amounts to about 280. Approx. 45 % of young people enter this type of secondary school and this proportion is decreasing. There are also 4-year courses organised by secondary vocational schools. They end in a *maturita* exam. The courses lead to highly skilled worker qualifications or serve as an extension study to those who continue their study after their successful apprentice training.

The curricula of all secondary schools must meet the requirements of the appropriate educational standards approved by the Ministry of Education, Youth and Sports.

Tertiary education

A higher professional school (*vyšší odborná škola*), ISCED 5B, provides the necessary qualifications for demanding technical activities which do not require a university degree. The programmes last a minimum of two years and a maximum of three and a half years. The graduate receives the title DiS. (specialist with a diploma). There are 164 of these schools (1/3 are private schools) teaching in approx. 200 branches. Students pay a fee for tuition.

Higher education institutions can be either university or non-university types, both defined as *vysoká škola*. The type of institution is declared in its statute, and must comply with the verdict of the Accreditation Commission. They offer education at three tertiary levels: bachelor study programmes (usually 3 years, ISCED 5B) and master study programmes (usually 5 years, ISCED 5 A) are available for applicants who have passed the *maturita* exam and have met the other admission criteria incl. entrance exam. The third level of higher education, doctoral study programmes (usually 3 years, ISCED 6), is open to graduates of the master study programmes. Traditional university-type institutions may offer all types of study programmes while non-

university institutions are characterised by providing mainly bachelor study programmes. Most university-type institutions are divided into faculties.

Today, there are 39 higher education establishments in the Czech Republic, state and private. Approx. 1/3 of all admitted applicants study the shorter bachelor study programmes and 2/3 the longer master study programmes. The demand for higher education is high, only one half of applicants is admitted.

Analysis results (VET system in the Czech Republic; selected parts – OECD; January 2010)

STRENGTHS - the Czech VET system has a number of strengths:

- The average academic level of 15 years-old measured by PISA is good.
- The majority of students complete their upper secondary studies; the dropout rate from this level of education is below the OECD average.
- Many reforms have been launched recently, including: the setting up of a new qualification system; the introduction of a national standardised exam in apprenticeship programmes, the launch of a major new adult education initiative, and new tools to improve career guidance.
- The government is actively fostering stronger participation of social partners in VET. Sector Councils provide a good example of the co-operation between social partners and policy makers.

CHALLENGES

- The performance of students and the quality of teaching in apprenticeship programmes (střední odborné učiliště – SOU) is low in comparison to general and technical programmes (střední odborné školy - SOS) leading to the matura exam.
- Governance of upper secondary VET at regional level lacks the transparency and accountability mechanisms that would ensure a match between labour market demand and student choice, and secure quality standards across the country.
- The provision of training is highly variable in terms of the number of students participating, length and quality; it depends on the sector and individual schools. Participation of companies in work place training provision is low.
- The institutional system for social partners' involvement in VET is fragmented. Not all VET related areas are subject to social partners' consultation.

RECOMMENDATIONS

1. Improve teaching and systematically assess the quality of general education in VET programmes, particularly in the apprenticeship programmes. Targeted help should be directed at weak performers.
2. Systematically enhance the quantity and quality of workplace training in both apprenticeship and technical programmes through the establishment of a national framework for workplace training. This should involve well-targeted incentives for schools, employers and students and the establishment of national workplace training standards, backed by effective quality assurance.
3. Introduce a standardised assessment covering the practical elements in technical programmes.

Situation and needs with regard to e-learning in vocational schools and institutions of vocational education and training

SITUATION WITH REGARD TO E-LEARNING IN VET SCHOOLS – FRAMEWORK AND STRATEGIC DOCUMENTS

The Czech Republic has a good telecommunications infrastructure owned by private companies. They have strong backbone networks for provision of IT services for all customers, including schools and public institutions.

Data describing the complex issue of information and communication technologies (ICT) in the educational process in the Czech Republic and the impact of e-learning on the educational process in Czech schools are not available. Nevertheless, it is possible to say that the development of e-learning is directly dependent on the expansion of ICT in education in the Czech Republic, currently supported mainly from public grants.

Strategic documents mapping this area exist and their implementation is currently carried out mainly within projects supported by grants or as individual system projects financed from the ESF. The State supports these projects in the form of co-financing.

Important **documents** that map and also influence the development of ICT in Czech society and secondarily also the development of e-learning in schools are:

- 1999 – State Information Policy
- 2004 – State Information and Communication Policy: e-Czech 2006
- 2009 – Level of ICT in primary and lower secondary schools (document of the Czech School Inspectorate)
- 2009 – School for the 21st Century

1999 – State Information Policy – A Way to Information Society

This strategic document is supported by the Government, there is one chapter directly devoted to the position of the State to e-learning. There are also visions described related to the development direction for ICT (also in schools) but only in general terms.

At the beginning of the part which is dedicated to e-learning, there is the following goal declared: “...National ICT policy in Education is to create conditions for the control of information work, the use of modern ICT in all types of schools and to develop the moral code to work with information...” The Government is expected to require future investment in Education. The accent is placed on the need of continuous education, also in the field of ICT. The reason is the rapid development of innovation in this area which now extend to most professions. Training ICT must be integrated into teaching.

The technologies should help teachers work with information and develop thinking without useless memorizing. The need of partnership approach of teacher is emphasized. He/she cannot succeed in front of well informed pupils only with the authoritarian attitude. Among the strategic objectives in addition to training students in ICT and equipping schools, there is also an accent on further education of teachers in using ICT in the pedagogical process.

Various forms of education should be supported, including distant form. For the development of thinking, creativity and ability to be creative, multimedia, virtual library and other digital devices must be used. For the implementation of these forms, it is necessary to have the support of the public and government and industry support.

2004 – State Information and Communication Policy: e-Czech 2006

The Government's overall strategic vision of ICT policy but focusing specifically on the area of Education. The document defines four priority areas where it seems as the most important safety and availability of communication services. As the second highest priority, is considered information literacy followed by a modern online public services and dynamic e-business environment. In the area of information literacy are mainly to:

- To promote computerization of schools
- To promote information literacy
- To promote e-learning
- To solve problem of digital divide

The information literacy is seen as one of the major factors for further development and prosperity of the Czech Republic. Therefore, the priority of the Government is also expansion of ICT in school education which is a part of State ICT Policy in Education (SIPVZ).

The Government considers the development of information literacy as a key condition for solving current problems in the economic and social area and for further development of the whole society and its economy, culture and overall prosperity. At the same time, the Government recognizes that information literacy will become an increasingly important part of the overall education and will increasingly determine the quality of life of the whole population and will have also an impact on opportunities for employment of individuals.

As the main obstacles on the way to the highest level of information literacy are identified the following:

- Insufficient motivation and low awareness of the potential of ICT;
- Fear of the first beginning steps, of expected difficulties and demands;
- Low availability of ICT products and services, especially computers and internet connection which is given by their relatively high costs due to the purchasing power of the citizens;
- Limited opportunities to gain information literacy skills and keep them.

The absence and lack of information literacy among citizens creates a strong handicap that can lead to the differentiation and stratification of population, or it can deepen this differentiation. The problem known as the "digital divide". The Government considers as absolutely necessary to actively fight this danger by removing barriers and promoting training opportunities in information literacy for the broadest strata of the population. The State identifies a significant opportunity to increase the level of information literacy in technologies and services (in e-learning) and in educational software in general. Therefore, it is supported to implement and use them in the sphere of education and public administration and also in education of wider population.

The Government is fully aware that due to the rapid development of ICT area, the achievement information literacy is not a one-off, but it has a continuous character. It must therefore be a part of the continuous lifelong learning system. The State considers as a basic part of the whole system of lifelong learning education schools that must provide basics of information literacy to all their graduates. In addition, the Government wants to use an educational potential of schools also for dissemination of information literacy in adult population in the form of courses for the public.

The Government also considers as essential that there is a possibility to an objective assessment of skills and knowledge in the field of information literacy. The basis for certification is identified in the

system of certifications ECDL – European Computer Driving Licence. A part of the qualification of public employees should be therefore information literacy, including appropriate certification.

2009 – Level of ICT at primary and lower secondary schools (document of the Czech School Inspectorate)

In 2009, the Czech School Inspectorate conducted a monitoring which objective was to objectively evaluate the status and use of ICT in Czech primary and lower secondary schools. They found out that the schools are relatively well equipped with computers concerning the number of PCs per pupil but the equipment was outdated. Most PCs were purchased within the State ICT Policy in Education (SIPVZ). After the end of this central support, the volume of ICT support in schools decreased by 80% in 3 past years.

Under SIPVZ, almost all teachers went through the basic course of ICT use but only 30% of them the training how to apply ICT. Lack of experience and knowledge of the work with ICT and outdated hardware and software discourage the work with new programs and their use in teaching. Only 20% of lessons teachers use ICT although 90% of pupils would appreciate more frequent use of ICT in school.

There is not a similar report available for upper secondary schools. By the qualified estimate, it is possible to say that the situation at the upper secondary schools is slightly better than at primary and lower secondary schools but basically there is possible to identify similar problems which are solving by primary and lower secondary schools.

2009 – School for the 21st Century

It is an action plan for implementation of the Technologies Development in Education for the period 2009-2013 prepared at the level of the Ministry of Education on the basis of the Government decision. The document follows the approval of the State ICT Policy in Education in 1999. It is the first document and interest in the specific activities after 10 years when the State declares its real interest in the use of technological upgrade in educational sector.

There are new objectives defined for the State support of ICT. It is no longer just about provision of ICT literacy to everyone anymore and access to ICT at schools, including connectivity and further teacher training. This time, it is important that the teacher training is up-to-date and reflect current trends in education. The focus is also on the co-operation of teachers and pupils who work with their own technical tools, in or out of school. Higher attention is also devoted to ethical aspects of using ICT and to the support that all pupils have comparable conditions that the access to ICT does not become one of sources of social exclusion.

According to the survey of Eurostat in 2008, the internet is used at school by 89% of pupils who are over 16 years which is the highest level to be compared to other EU member states (the EU average is 67%). At the same time, there is no evidence that this use is for educational purposes. The survey of the Czech Statistical Institute in 2006 showed that 78% teachers used internet for teaching at least once a year (the EU average is 74%). This discrepancy shows that teachers have in comparison with pupils the delay. And the objective is to remove this discrepancy.

The majority schools are still equipped by desktop computers which are placed to the special classrooms. There exists an awareness that ICT should be implemented to all subjects but it is insufficient and distorted. A long-term goal must start changes leading to an optimization of using ICT tools in classes and respecting ICT development towards using mobile devices (mobile phones, iPads, iPods, netbooks, etc. with internet connection). The equipment the majority of pupils by these

private devices fulfil the vision “1:1” (1 computer per 1 pupil). Nevertheless, it is necessary that teachers are able to react to this when they are teaching. It is important to provide teachers with information background and methodological support. The support should be directed not only individuals but the whole team at school, including school management. Innovations in education through ICT respect the school-level curriculum and helps to the individualisation of School Education Policy in different schools.

The State identified the following development activities as appropriate:

- Increasing technological competence of teachers and school management representatives (focus on using ICT at faculties of education in preparing new teachers in initial training)
- Ensuring ICT equipment at schools and connectivity
- Equipping teachers by mobile devices with internet connection (to enable make teaching and learning digital)
- Providing methodological and technical support (as a very important part of the development)

Action plan tools (approved by the Government in 2008) are a part of this document and accent among others the overall strengthening school equipment and overcoming digital divide between pupils attending different size schools. There is also a focus on development programmes enabling systemic support, evaluation and monitoring of school orientation in accordance with this document.

Other possibilities for further EU funding are also recognized. There is also a reflection of the European Commission document from 2005: “i2010: European Information Society 2010”.

Role of ICT and e-learning during innovation and modernisation of VET

In the school system, there is a large number of organisations dealing with e-learning and an important number of sub-projects supporting use of ICT. Nevertheless, a fundamental change is linked to the project “Internet to schools” (project of the State ICT Policy in Education – SIPVZ www.e-gram.cz) which enabled an internet connection to several thousands of Czech schools and predestined the future development also in education via e-learning. Within this project, the Czech Ministry of Education, Youth and Sports (MŠMT, www.msmt.cz) introduced computers, peripherals, internet connection and related internet and intranet services to schools which were not equipped. Project web site www.indos.cz provides all important information to users of the project as well as basic information to the lay public and experts.

One part of the project constituted from standardization of teachers competencies in using ICT and new trend is also given by the standard of Further Education of Pedagogical Staff (DVPP) for school management and ICT as well as school curriculum programme coordinators. ICT has therefore become a tool in the work of teachers which help them in their educational activities.

Entities participating in providing support, development and use of e-learning in VET (IVET and CVET)

* Ministry of Education, Youth and Sports of the Czech Republic

- Grant support of contribution-based organisations using this support usually within system individual projects
- Responsibility for quality of full-time and distant education
- Delivery of accreditations to distant courses
- Organisation of the ESF projects

* Regions

- Financial support of distant education and e-learning
- Own offer of e-learning courses for public

Example: Olomouc Region (<http://webvzdelani.olportal.cz/>). Educational portal of Olomouc Region is realizing internet space for free access to learning texts, tests and learning applications from the field of information technologies. Participation in making draft, preparation, implementation, testing and development is open to public mainly from teachers and students.

*Primary, lower secondary, upper secondary schools and higher professional colleges

- Development of educational programmes
- Teacher training in using ICT
- Use of modern didactic methods

*Higher Education institutions

- Partial support by information about education via e-learning
- Partial e-learning courses

Example: Activity of University of Ostrava or Faculty of Mathematics and Physics, Charles University in Prague

*Non-governmental organisations

- Support of ICT use in classes
- Development of e-learning content
- Participation in using e-learning systems

Example: Organisation “Březen měsíc internetu BMI” (March Month of Internet) is a non-governmental and non-profit organisation which mission is supporting development of internet as a global communication tool, typical for information society, and using modern technologies in interest of development civil society. This organisation implement its objectives thanks to a number of educational and popularising activities in the Czech Republic and also within international project cooperation.

Example: Action Junior Internet which is already eighth year it take place in the frame of March Month of Internet (www.brezen.cz) and is dedicated to young people till the age of 18 who use internet not only for having fun. They can apply with their web sites, design or texts about internet to internet contests. Contests participants are invited to a conference with programme about internet, full of lectures, presentations, discussions and contests about internet.

*Private companies

- Offer of educational systems /LMS – Learning Management System) for schools
- Content development of e-learning courses for school institutions
- Counselling during implementation of ICT into school curriculum
- Development of thematic content
- Organisation of vocational courses, soft skills

NEEDS WITH REGARD TO E-LEARNING IN VET SCHOOLS

On the basis of documents mentioned above, surveys and methodological support of schools (e.g. within www.rvp.cz) , it is possible to define current needs of schools and pedagogical staff. The fulfilment of these needs can lead to the ICT development, using of e-learning at schools included.

Problems and development needs for spreading e-learning at vocational schools

*Technical

Problems, barriers	Development needs
Compatibility with existing programs used at school or with operational system	Currently, it is already disappearing problem which is being solved by providers and service distributors by development of new approaches: a number of FOSS are already multiplatform (Mozilla Firefox) or web-based (Moodle) or is running in cloud (Google Doc).
Users signing in	It can be solved by using various tools and services but by ensuring it the financial and staff costs are increasing
Sharing printers	
Launching educational programs specifically for Windows	

*Personal

Problems, barriers	Development needs
Non-awareness of e-learning principles; non- awareness of FOSS and its possibilities of use	Support of information background, support of distribution of existing information sources (e.g. magazine Open source & practice accessible for free in printed or electronic version about potential of use of FOSS in Education and business)
Fear of something unknown	Support of information background, methodological support and training.
Non-motivated staff (they are not interested in e-learning/ they consider transformation of their own learning material into digital content as time demanding and not well appreciated work)	Support by the school management for implementation ICT innovations, including also information background about demands which are expected from school employees when new innovations are implemented. (teachers, technical support). Support by financial motivation. Methodological support and connecting useful information (e.g. ICT implementation into classes is possible to link to implementation of School Educational Programmes, project method, etc.)
Non-trained staff (option from: they have basic skills in using PC; to: they consider as e-learning when they send their own material for teaching via email or put it on the web site	Support of information background, methodological support and training.

*Financial

Problems, barriers	Development needs
Non-awareness of own solutions	Not all types of innovations face demands on implementation. There is a need of better information background about financially accessible innovations.
Any innovation brings financial demands (for equipment or for paying staff participating in implementation)	
Operational costs concerning FOSS (it is not only about low costs at the beginning) – e.g. costs related to modifications of data structure, initial staff training	Currently, it starts to be a disappearing problem which is being solved by providers and service distributors by development: a number of FOSS are already web-based (Moodle) are running in cloud (Google Doc). Costs related to removing problem are in this case decreasing.

* FOSS = free & open source software

*Organizational

Organizational problems are usually a mix of technical, personal and financial problems. The way how schools are working and curricular reform are not a barrier in implementing ICT into teaching process.

Measures, programmes and initiatives to support e-learning in vocational education and training, especially in vocational schools

In the Czech Republic, the systemic attention to the development of ICT at schools (e-learning included) is paid in intermittent waves. The most important attention concerning financial volume and global extent was dedicated to schools in the period 2000 – 2006. The further activities are more likely one-time character or less important impact. They are mainly about activities related to support and methods (publication, portals, ...).

REPRESENTATIVE INITIATIVES SUPPORTING DEVELOPMENT OF E_LEARNING AT SCHOOLS IN TIME

- 2000 – 2006 – implementation of State ICT Policy in Education (SIPVZ)
- 2004 – Use of ICT in primary schools classroom (Střešík, J.)
- 2005 – Role of e-learning in schools – Information for educational managers (University of Ostrava, Květoň, K.)
- 2007 – Infotech 2007 – Modern information and communication technologies in Education (Palacky University in Olomouc, Dostál, J.)
- 2009 – JTIE – magazine for technical and information education (published since 2009 up to now, publisher is Palacky University in Olomouc)
- 2010 – ICT at school – Methodological Handbook for school management and ICT methodologists (Pedagogical research institute in Prague, Neumajer, O.)
- 2010 – School 21 Profile
- 2011 – Educational programs (Palacky University in Olomouc, Dostál, J.)
- 2011 – 2nd Generation Internet for teachers (Palacky University in Olomouc, Dostál, J.)

REPRESENTATIVE SYSTEM ACTIVITIES – STATE SUPPORT

2000 – 2006 – Implementation of State ICT Policy in Education (SIPVZ)

In the period 2000 – 2006, based on the Governmental decision, the State ICT Policy in Education (SIPVZ) was implemented in the Czech Republic with a support from the State budget.

Before that, it was planned to support information literacy of teachers, pupils and students, citizens and employees of public administration. The implemented activities in educational institutions were organised in the following way:

- Till the end of 2006: finalize internet connection to all educational institutions (libraries included),
- Continuously: finalize ICT equipment of educational institutions with the aim to achieve and maintain at least the European average of equipment (in case of schools mainly number of pupils per computer, number of teachers per computer, number of computers per school and computer lab).
- Continuously: support development of corresponding offer of information literacy courses and of opportunities for electronic education as a part of lifelong learning.

- Continuously: increase speed of internet access in educational institutions with the aim to achieve at least the European average in speed of access.
- Continuously: systematically increase information literacy educational institutions staff (teachers and librarian)
- Continuously: increase ability of schools to use ICT, e-learning technologies and educational software including their implementation into teaching process.

Although the goals were to be implemented by the plan approved by the Government “Concept from 1999”, there have been many differences that have produced a negative impression with the public (in: Education for the 21st century). All designed goals were not met.

The delivery of ICT infrastructure, connectivity included, was ensured across the board. The quality of connection, however, today does not meet current requirements and internal infrastructure is not designed systematically in most schools. The function of administrator is often solved unsystematically and chosen teachers do this work instead of teaching work or beyond their pedagogical tasks. Within SIPVZ all teachers were trained but mostly at the basic level of ICT use. A globally spread and updated methodology about using modern technologies in various disciplines is missing. Teaching staff also do not feel the need to further enhance knowledge and skills in this field.

Already in 2004, the concept was extended until 2010 and the Government agreed to grant additional years 2007-2010. In 2006, however, the Parliament did not approved this financial support anymore which caused so many problems to schools with the financing ICT in 2007.

E- support of ICT development in schools (methodologies, trainings)

Although the State currently does not support globally provision of schools with computers or does not implement across-the-board training, these activities are supported by a large number of projects co-financed by the ESF and State budget. They can be:

- a) grant, partial
- b) system, individual

a) grant, partial

These projects are numerous and are implemented in all regions of the Czech Republic. In recent about 5 years, it is about projects mainly funded from the operational program Education for Competitiveness (ECOP) and the Operational Programme Prague - Adaptability (OPPA).

These projects enable mainly to finalize equipment schools technology meeting current requirements and further training of teaching staff or innovations of teaching process by using ICT, including introduction or development of e-learning.

The advantage of these partial-projects is the implementation tailored to the school. The disadvantage is missing continuity and low level of sustainability, particularly relating to the innovation of technological equipment.

For example the supporting portal www.metodik.cz is funded from ESF. The portal is administrated by an association which aim is to provide information and methodology, especially to ICT methodologists (coordinators) in schools, but also to teachers and to those who are interested in the use of ICT and e-learning. The website contains information about courses including Moodle teaching materials and other information which can be downloaded. It offers help in realising specific ICT projects in schools and provides information about using WebQuest in teaching.

One of the supporting web sites which are quite specifically targeted is about work with interactive whiteboards. Its name is portal www.veskole.cz.

Portals focusing mainly on training teachers in the field of e-learning are e.g. e-learning in as a part of teaching process at the Masaryk University in Brno, about development and implementation of e-learning in school (<http://is.muni.cz> / Elportal), then for example IT and e-learning at Mendel Secondary School (within a project Education and Culture).

b) System, individual

Within system projects, so called individual, they are dealing with problems across-the-board, it means that an assistance is provided to all entities which are interested in the support. At present (after the State Information Policy) it is important particularly methodological support for the introduction of ICT into teaching process (especially in the context of curricular reform and implementation of educational frameworks).

The main methodological support provides Methodological portal <http://RVP.cz> which is primarily focused on supporting curricular reform and has only grant resources (in: Education for the 21st century). Provider is the Ministry of Education and the development of the portal is funded by the ESF. The portal offers a methodological support, information sharing but also education. The part of RVP portal is now also a former separate portal [spomocnik.cz](http://spomocnik.rvp.cz/) which is now available on <http://spomocnik.rvp.cz/>. This section focuses on support for the use of modern technologies in teaching process.

As one of the tools which can be used by school management and ICT coordinators were workshops which trained the work with evaluation tool **School 21 Profile**. The education was focused on the conceptual work in evaluation of teaching with ICT (topic: monitoring multiple indicators that help schools determine the extent to which they are successful with the integration of ICT into the life of the whole school. This training was part of an individual system project Methodology II implemented by the National Institute for Education.

E-learning is also used as a methodological support and information resource for other specific areas. Most of these portals were developed and operates with support from the ESF. For example, the National Institute for Education provides teachers with e-learning in career counseling (<http://ekariera.nuov.cz>) within system projects VIP Career I and II.

The problem with any form of project financed from the ESF during last 10 years is a high degree of un-sustainability. Also in the case of projects with longer duration. Many separate portals for methodological support do not exist anymore. Either their agenda was taken over the existing portals, or they disappeared.

PUBLICATIONS AND OTHER METHODOLOGICAL SUPPORT

In addition to the support including methodological support, there are several **publications** about using ICT and e-learning in teaching process available in the Czech Republic as well. Besides the system support within the portal metodik.cz which is administrated by the National Institute for Education (an organization directed by the Ministry of Education), an extensive activity in this area is developed also by Palacky University in Olomouc (UP Olomouc). Examples of recent publications:

- 2004 – Use of ICT in primary schools classroom (Střešík, J.)
- 2005 – Role of e-learning in schools – Information for educational managers (University of Ostrava, Květoň, K.)
- 2007 – Infotech 2007 – Modern information and communication technologies in Education (Palacky University in Olomouc, Dostál, J.)
- 2010 – ICT in school – Methodological Handbook for school management and ICT methodologists (Pedagogical research institute in Prague, Neumajer, O.)
- 2011 – Educational programs (Palacky University in Olomouc, Dostál, J.)
- 2011 – 2nd Generation Internet for teachers (Palacký University in Olomouc, Dostál, J.)

Since 2009, Palacky University in Olomouc also publishes magazine for technical and information education (JTIE) in electronic and printed form. It is a scientific journal which focuses on publishing results of research investigations, theoretical studies, theses and other important communication (e.g. conferences, etc..) related to the issue of Technical Education, Information Education and Didactics of Informatics. There are articles published by Czech and foreign authors. The magazine is independent and appears at least twice a year. Selected articles are indexed in the scientific database Google Scholar.