



Living  
Schools  
Lab

# Observation Case Studies

Czech Republic



# Introduction

With the participation of 15 partners, the two-year Living Schools Lab project promoted a whole school approach to ICT use, scaling up best practices in the use of ICT between schools with varying levels of technological proficiency. Visits to the project's Advanced Schools in 12 countries were carried out to observe school's best practices leading to a report and recommendations on developing and mainstreaming of whole school approaches to ICT.

In addition to this, twelve case studies present the evidence gathered as part of the school observation visits to two Advanced Schools in each of the 12 countries: Austria, Belgium, Cyprus, Czech Republic, Finland, France, Ireland, Italy, Lithuania, Norway, Portugal, and the United Kingdom. Alongside the case studies, each Link Observation Visit was detailed in a blog post, along with useful links and practical ideas to try in the classroom: <http://isl.eun.org/observation-visits>.



## **A framework of eight main questions was used to develop the case studies:**

1. What types of technologies and resources are available in the Advanced Schools?
2. Are there recent national initiatives that have had an impact upon whole school development of ICT?
3. Who leads the decisions about the development of ICT?
4. What types of training and professional development are available to teachers?
5. How is ICT being used in different subjects?
6. What kinds of research and development are the teachers engaged with?
7. Are the Advanced Schools engaged in any partnerships or networks?
8. Are there particular areas that could be mainstreamed or replicated?

All case studies contain information that has been reviewed by National Co-ordinators. The studies outline evidence gathered as part of the Link Observation Visits and throughout the Living Schools Lab project. Further information is available on each school website about the individual school, although this may be in the home language.

All of the school visits were undertaken by Diana Bannister MBE, University of Wolverhampton. These case studies should be read in conjunction with the project's Link Observation Visits final report available at <http://fcl.eun.org/isl>.

# Observation Case Studies: Czech Republic

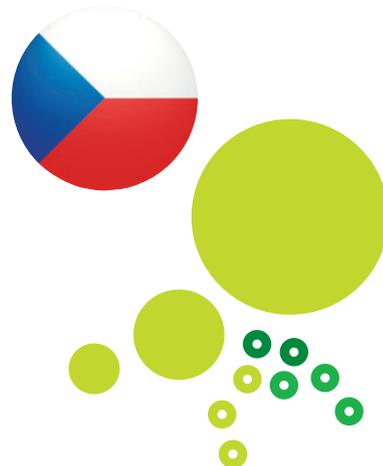
September 2013

## Základní škola Dr Edvarda Beneše | Prague | Czech Republic

Number of students	751
Age group of students	6–15 years
School website	<a href="http://www.zscakovice.cz/">http://www.zscakovice.cz/</a>
Name of principal	Martin Strélec
LSL project Lead Teacher	Petra Boháčková

## Gymnázium Teplice | Teplice | Czech Republic

Number of students	850
Age group of students	15–18 years
School website	<a href="http://www.gymtce.cz/">http://www.gymtce.cz/</a>
Name of principal	RNDr. Zdeněk Bergman
LSL project Lead Teacher	Marcela Řeháková





## 1. What types of technologies and resources are available in the Advanced Schools?

At **ZŠ Dr Edvarda Beneše** in Prague all of the 40 teachers have access to a personal laptop to prepare and conduct their lessons with. Some classrooms (in a part of building designed for younger students) are equipped with a computer; therefore teachers do not carry their laptop there. A WiFi connection is freely available in almost all classrooms and all staffrooms, therefore students can use their laptops or other devices during lessons to get connected to the internet and search needed information. Students can even bring in their mobile telephones which can be switched on and used for lessons, but no calls are allowed.

The school has three fully equipped computer labs, which have been upgraded in the recent years. Alongside this, Prague municipality has financed a class set of 32 iPads in 2012 for ZŠ Dr Edvarda Beneše, this was because those schools which are located in Prague, are not allowed to demand subsidy for ICT equipment from the European structural fund. A new set of 15 iPads have been purchased newly at the beginning of school year 2014/2015.

All teachers have email addresses which are at disposal for students and parents as well, moreover some of them have developed their own websites to publish useful information and teaching materials.

Gymnázium Teplice owns approximately 140 PCs, 41 projectors, 7 interactive whiteboards (some of them include voting systems). There are three computer labs, students can use a study equipped

with several PCs as well. All computers have an internet connection; some parts of the school have WiFi. Students are allowed to use their mobile telephones to access information for learning. All computers are connected to the school network, which represents a collection of varied files for the management of the school, teachers and students. The access to these files is therefore graduated according to different levels of confidentiality, users are divided into groups with distinct rights.

**Gymnázium Teplice** strives to change all the technologies after six years of use. Due to financial reasons, second hand computers are sometimes bought. The school also cooperates with local companies, which occasionally donate older equipment.

Both of the Czech schools use *Bakaláři*, the virtual information system and online learning environment. This gives students and their parents regular details about what is going on at school. The system itself offers a wide range of information that is updated regularly. Students can access the learning topics online and homework; they can also get to know about their grades or evaluation comments. Parents can for example check their child's absence in lessons. Students can set up individual consultation or tutorials with teachers as well as submit their homework electronically. However, they are not allowed to make their materials public, only teachers can put materials into a shared file. Staff are expected to open up *Bakaláři* at least once a day.

## 2. Are there recent national initiatives that have had an impact upon whole school development of ICT?

A huge reform of the education system called Framework Education Programme was implemented in the Czech Republic between 2005-2008. The main idea behind the reform was to make schools more independent from the central administration. The aim was to allow teachers to work on their own initiative to develop a richer variety of teaching approaches with the emphasis

on constructivist methods. As a consequence the reform encouraged competitiveness of different schools and programmes. Curricular documents are developed at two levels – state and school. In the system of curricular documents, the state level is represented by the National Education Programme (NEP) and Framework Education Programmes (FEPs). Whereas the NEP formulates the

requirements for the education which are applicable in initial education as a whole, the FEPs define the binding scope of education for its individual stages (for preschool, elementary and secondary education). The school level is represented by School Education Programmes (SEPs), on the basis of which education is implemented in individual schools. The School Education Programme is created by each school according to the principles prescribed in the respective FEP.

In 2014 Czech government approved a common strategy in education called Strategy 2020 and a Digital Strategy 2020 aimed particularly at the area of ICT is being finalised by the Ministry of Education (MoE) at the moment. This digital strategy outlines main priorities and goals within ICT in education up to 2020. This strategy should be approved by the government in the coming months and then followed by concrete measures such as teacher training.

The development of ICT in education was also one of the purposes of a special initiative under ECOP adopted in May 2010 - EU money to schools (2010-2012). This initiative was managed by the MoE and aimed at all elementary and secondary schools (excluding schools in the capital city). It supported various innovative curricular approaches (not only ICT) in different areas of teaching: MST<sup>1</sup>, financial literacy, reading and information literacy, foreign language teaching, inclusive education,

usage of ICT in all the subjects. Schools could apply for a grant directly to MoE. It was expected that approximately 2/3 of the whole budget will be invested to ICT. Examples of supported areas within ICT are: digitalisation of textbooks, e-learning, further teacher training, modernisation of schools' equipment – purchase of DVDs, cameras, netbooks, tablets, notebooks, computers, software programmes, interactive whiteboards (IWBs), e-skills trainings (different training organised by a range of institutions), etc. Within the initiative, teachers could get financial support of creating digital learning materials which would be shared with peers.

In the last decade, there has been an expectation that all teachers will use the computer and become digitally literate. Teachers could take part in courses to enhance their ICT skills, nowadays there is an expectation that they are able to use basic communication and presentation tools (such as email or PowerPoint). In addition, a lot of teachers use the interactive whiteboard, which has become a regular and useful tool, especially at primary schools. Teachers can become a member of a different teacher online communities, the most visited one is known as a methodological portal “rvp.cz”. The portal contains amount of digital learning materials created by teachers, which can be reviewed by peers. News related to education is published there as well. The portal is run by an organisation under the MoE called the National Institute for Education.

### 3. Who leads the decisions about the development of ICT?

Schools in the Czech Republic are directly managed by regional (secondary schools) and local (primary schools) authorities. Regional and local authorities are school founders, they are responsible for money and control of the schools.

The role of the headteacher is crucial to the success of the school use of technology; this is largely because the headteacher makes the decisions about the schools curricula and also the financial investments. Both headteachers in the LSL Advanced Schools believe that lead staff have an entrepreneurial attitude to developments in school.

The headteacher of ZŠ Dr Edvarda Beneše said he saw as a priority “the students to be able to access the technologies of real life and to have them at school so that the students develop skills for lifelong

learning.” The headteacher of the Gymnázium Teplice said that he wanted the school to be seen as innovative. He attended project meetings in other countries and found out what other schools were doing. The headteacher has also participated at European events such as the Lifelong Learning Programme. The role of the headteacher recognises the need for distributed leadership within the school and clearly acknowledges the expertise of the other colleagues. In Gymnázium Teplice, the forward vision and changes are discussed mainly at a department level; subsequently the head of each subject takes new ideas forward to the headteacher.

Due to the financial situation in the education field, gaining money for up-to-date ICT equipment requires substantial effort. For that reason, both schools “try to participate in as many projects as

1 Mathematics, Science and Technology

possible". Gymnázium Teplice has appointed a project co-ordinator who is responsible for knowing about the projects being undertaken by the school.

This means that there is awareness about how the work of the project can impact upon whole school change and development.

## 4. What types of training and professional development are available to teachers?

In the Czech Republic, the local authorities approve the budget of the schools and its framework use. However, the majority of training is decided by the school. It is usually necessary to pay a course fee. In the interview, the leading teacher expressed that it would be useful for more funding for courses to be made available, because whilst there is choice, it can be difficult to allocate time and money to be able to attend the courses.

The school purchased a class set of iPads and all teachers got training on how to use them by external company. The LSL lead teacher and one other teacher at the school has then provided individual support as requested. Staff took also part in other ICT courses within the year on face-to-face or on-line basis.

In addition, the school helps teachers from other schools to use modern technologies effectively; for example, one of the teachers took part in discussions on the methodological portal "rvp.cz" and helped the other teachers with the use of IWB. The school has repeatedly held workshops on using IWB in classes within the school as well.

At **Gymnázium Teplice** teachers are involved in further professional development – either in use of interactive whiteboards or MS Office courses – Word, Excel, and PowerPoint (it is for all teachers). Then teachers attend regular courses about how to use the school system including the e-register, and the virtual learning environment. At least one teacher from each department participated in seminars to learn how to use the interactive whiteboard and then cascaded the training to other staff. Some of the teachers meet once or twice a year as part of the 'SMART school' which is organised by a local company called AV Media.

Gymnázium Teplice wants to develop the teacher's profile and get each teacher to decide which area they would like to develop as part of their professional development. Each teacher would have a file and this would allow the school to monitor the professional development of all staff.

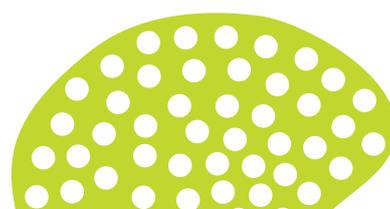
Gymnázium Teplice is a training centre for teachers in the surrounding area. The school offers a range of courses that have been approved by the Ministry of Education; e.g. Using Interactive Whiteboard, Teaching Foreign Languages Using ICT and Interactive Whiteboard, Effective Learning and Teaching Using MS Office and Preparation of Project Materials, Digital Graphics in Art or Using Freeware Programmes and the Internet when teaching.

Training in the use of ICT is not mandatory, but it is recommended. There are certain types of training according to ICT level and needs of teachers. There is a list of accredited agencies and schools by MoE. To become the accredited school, which can charge for training, it is necessary to gain approval on the basis of a submitted plan.

The courses take place within the academic year.

Both leading schools offer a CPD (Continuing Professional Development) course for other schools, for example in IWB effective learning and teaching.

At **ZŠ Dr Edvarda Beneše**, the headteacher says that "as a school, we can provide our own experts so that teachers can support each other". The headteacher encourages staff to build their own PLN (personal learning network) – a community of people with the same interest (in this case ICT) where they can discuss problems, ask questions and share practice. The lead teacher of ZŠ Dr Edvarda Beneše says, "It is recommended by the school that we observe one another teach twice per term, particularly if we want to see another teacher using a specific technology." The teacher takes notes, but there is no formal feedback. The formal feedback is provided by headteacher in case that he observes lessons.



## 5. How is ICT being used in different subjects?

**ZŠ Dr Edvarda Beneše** uses for example Edmodo<sup>2</sup> that is an online communication and collaboration application for students and teachers. The school believes that students have already realised its importance for their studying especially in acquiring foreign languages.

In the students' foreign language learning they are encouraged to talk with students from another school using Skype. Students use online tools for creating mind maps, for brainstorming, for blogging and this helps the students to document their progress.

Teachers have also used a wide range of apps, for example Tellagami<sup>3</sup>, to provide a voice over to learning resources. This can be used across all aspects of the curriculum.

Students at this school also use cameras, camcorders or voice recorders during lessons or planned projects, they know the basic way of processing videos and photos in certain applications. Moodle is used to conduct online education for students both inside and outside of the school, therefore they can plan and organise their own self-paced study. Teachers are able to assign different learning to different students. The student can select the sequence of activities and the teacher can monitor progress. Again, working with Moodle or using Google Docs students receive comments from their teachers and they can discuss it with teachers and other students in forums. The school supports a "Bring Your Own Device" (BYOD) programme meaning students can work with their own iPads or mobile phones.

Students are also introduced to the system called Crocodoc<sup>4</sup> where they can submit their home assignments on-line, share other documents with their classmates and edit them on-line.

The school bought four interactive whiteboards and headteacher offered them to teachers who were interested in. "Slowly the teachers learned to use it. Most of the teachers feel the need to use technology and others will when someone shows them." The headteacher said that the only area where he has enforced the use of technology was the electronic class book. (Bakalář)



There is a computer in each class, the teacher writes down marks, and records them on the computer; everything is recorded digitally. All PCs are connected to the Internet; there are labs which have additional equipment. Teachers, students and parents can see the lesson topic. They can see grades, evaluation and homework.

At **Gymnázium Teplice** students have access to study materials on the school network and teachers send a lot of materials via the school communication system. The system is accessible only to the teachers, students and their parents that have passwords. The homepage of the school is described by the school as "the most visited web page among Czech secondary school web pages." The system itself offers a wide range of information that is updated regularly. Students can get to know about their grades, evaluation, homework, they can even find out (online) which topics were taught in the lessons. Students can set up individual consultation or tutorials with teachers and send their homework in an electronic way.

<sup>2</sup> [www.edmodo.com](http://www.edmodo.com)

<sup>3</sup> <https://tellagami.com/>

<sup>4</sup> [www.crocodoc.com](http://www.crocodoc.com)

Gymnázium Teplice demonstrates a whole range of everyday ICT usage in various activities –preparation of tests for students, PowerPoint presentations when teaching, students assessments, homework setting, students preparing their own presentations and presenting them, doing homework online, doing research online about students’ preferences and opinions.

During the lesson observation the teacher accessed the resources from the shared files for teachers where a huge bank of materials has been built up

over time. All the teachers share their resources; the Virtual Learning Environment is viewed as the hub of the school information. The lead teacher admits that “it took a lot to convince other staff about sharing the resources, but it is so worthwhile.”

The school is able to demonstrate an effective way of using ICT in many curriculum subjects: Biology, Geography, Physics, Chemistry, Mathematics, History, Music and Arts, and Foreign Languages (English, French, Spanish, German, and Russian).

## 6.

### What kinds of research and development are the teachers engaged with?

The leading teacher in the Czech Republic said “As a school, we don’t use research, we see this as more the role of the University and we concentrate on methodology.” This suggested that research is something that is done to the schools, rather than with them. It indicates that schools see universities as a leading authority on certain types of research, rather than recognising the opportunities to engage in collaborative understanding in order to move classroom practice forward.

At Gymnázium Teplice, the school was involved in a number of European school cooperation projects such as Comenius. All of the teachers are

constantly engaged in developmental research. “We don’t generally work with other schools, unless for projects where we go abroad, not with schools in CZ.” The school is currently involved with a project called “Let’s play with maths” and this will enable school to have an interactive whiteboard and produce tasks for various ages<sup>5</sup>. The leading teacher at Gymnázium Teplice says that it is important for the school profile to be engaged in projects.

ZŠ Dr Edvarda Beneše has recognised the benefits of engaging with European projects to learn from and with other schools across Europe.

## 7.

### Are the Advanced Schools engaged in any partnerships or networks?

In the Czech Republic, getting partners for schools and additional funding belong to the responsibility of the headteacher. Although there is no national guidance available on this, both of the Advanced Schools were able to demonstrate examples of school partnerships and partnerships with local businesses.

ZŠ Dr Edvarda Beneše has worked with partners to fund the WiFi connection at school. These private companies provide better WiFi connection for homes too. Gymnázium Teplice is involved in Microsoft Partners in Learning Programme who are the only formal partners. The funding for the computer lab

at school was supported by Hewlett Packard. “It is important to look for more opportunities to engage with the local community,” said the lead teacher at Gymnázium Teplice.

Both of the schools are also active on an international level. They have been involved in a number of eTwinning and Comenius school partnership projects. All of the projects have improved both language and ICT skills of both teachers and pupils. Gymnázium Teplice had for example in 2009 a project with Iceland, Norway and Switzerland to develop a “Didactic Park” producing interactive learning materials.

<sup>5</sup> [www.lyska.net/MathProject](http://www.lyska.net/MathProject)

ZŠ Dr Edvarda Beneše is engaged with other European projects such as iTEC, inGenious and Creative Classrooms Lab. This is seen as a way to gain additional funding and to learn from colleagues in other countries. The school also helped to translate an English version of a presentation about tips of using iPads into Czech (“103 zajímavých aktivit pro využití iPadů ve třídě”), the school took part in

the first Czech ‘digital learning day’ where students prepared activities and showed how they can use ICT effectively.

Both schools encourage an open dialogue with the community of stakeholders, e.g. Gymnázium Teplice distributes questionnaires to collate feedback from parents and students.



## Are there particular areas that could be mainstreamed or replicated?

### ZŠ Dr Edvarda Beneše

- Role of headteacher: The headteacher says “as a headteacher it is important to observe the teachers and watch lessons. It is important to speak to the students.” The headteacher looks at the lesson materials to see what the teachers are doing, he provides them feedback and advises. Concerning the future use of ICT in education, he claims that “it is very difficult to say what is going to happen in the future because it depends on progress in the technology. In the next ten years, we will certainly have more devices available for students and maintain strong connectivity.”
- 1:1 approach: School’s headteacher is aware of the fact that students want to be connected to learning 24/7 at school and at home. He believes that schools will have to provide online courses in the near future. Apart from that he emphasises that school has other functions apart from education, for example, social interaction.
- Outdoor education: There has been consideration of how ICT can be used in outdoor spaces. The use of iPads is encouraged in the school’s fully outdoor eco-classroom.
- ICT labs are not just used for ICT, but in varied lessons.
- Different tools and virtual environments are used to publish and share the students work (YouTube, blogs, school’s website).
- Students have designed a trail using QR codes to enable the local community discover information in a nearby park.

### Gymnázium Teplice

- This school has developed its own profile exam where students have four hours to respond to a task, but they are allowed to use the internet.
- Funded the role of a project co-ordinator (released from 0.25 teaching hours with responsibility for bid writing, project development, to seek opportunities for innovation funding and activities across the school).
- Identified two key staff to receive additional training, but with the responsibility to cascade this training to the other teachers.
- Involved the students in designing the showcase ‘tour’ of the school. This enables the students to be aware of how school is developing and encourage them to contribute innovative ideas.
- Technology features within interactive and semi-permanent displays allowing students to learn in corridors and in dedicated areas without being instructed.
- Creation of the Virtual Learning Environment, where teaching materials and other important information are shared.



# Observation Case Studies

## Czech Republic

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