



## Case studies

**Trnovo Primary School, Ljubljana, Slovenia**

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## CONTENTS

<b>1. Context of the school</b> .....	3
<b>2. Example of practice</b> .....	3
<b>3. Impact, barriers and enablers</b> .....	5
3.1 School.....	5
ICT development plan, implementation strategy, organisational changes and attitudes .....	5
Resourcing.....	5
The curriculum and ICT .....	6
Assessment of ICT and ICT for assessment .....	6
Organisation of support.....	7
3.2 Teachers .....	7
ICT as a tool for communication and collaboration .....	7
ICT as a tool to improve the quality and efficiency of planning and administration .....	7
The pedagogical role of ICT to improve learning and teaching.....	7
ICT skills .....	8
Participation, motivation, confidence and performance.....	8
3.3 Learners.....	9
ICT skills .....	9
Motivation, participation and confidence .....	9
Participation in all aspects of school life: academic, social, personal.....	9
<b>4. References</b> .....	9

*This is one of 25 case studies produced for STEPS, the Study of the impact of technology in primary schools, to illustrate the impact of ICT, on schools, teachers and learners, and to highlight barriers and enablers to its effective use in the school. Further information can be found at <http://steps.eun.org>.*



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## 1. CONTEXT OF THE SCHOOL

- Trnovo primary school is an urban school for children between the ages of 6 and 15. The school has 640 pupils and a staff of 50 teachers, 2 librarians, 2 remedial teachers, 1 social worker and 1 psychologist. One of the physics teachers acts as ICT co-ordinator for half of their time.
- Half of the pupils live in the neighbourhood, while the other half come from further away, attracted by the good reputation of the school. There is freedom of school choice up to a point: parents can select a school outside their district, but ultimately the receiving school and local authority decide on admission.
- Approximately 30 per cent of the pupils do not have Slovene as their first language. In most cases they speak one of the other languages of the former Yugoslavia.
- Approximately 60 per cent of students proceed to the Gymnasium after 9th grade, with the other 40 per cent attending vocational schools.
- The school tries to respond to the individual needs and characteristics of students, but is limited in this respect due to limited staffing. Two-thirds of all classes are team-taught, with differentiation within classes rather than separating students according to their abilities and needs.
- The school is active in organising projects both within the school and beyond. Examples of work with other Slovene schools and international partnerships are evident throughout the school building.
- The school website actively presents the regular and special activities of the school. Additionally two open days are held each year to which parents and local press are invited.
- Funding comes mainly from local government (buildings, maintenance, ICT), the national Ministry (salaries, ICT), European funds (Comenius) and sponsorship from parents and companies.
- The school has 65 computers, 3 interactive whiteboards and a good fibre-optic internet connection. Almost all teachers and students have internet access at home.
- The school building is pleasant, light and well maintained, but can be noisy at times.

## 2. EXAMPLE OF PRACTICE

Interviews with teachers at the school revealed various examples of practice.



In English language lessons, for example, the teacher uses various online materials both for information and exercises. The teacher is Australian and has good access to numerous educational materials available in, and for, English.

In physics lessons, the teacher uses ICT in numerous ways, for example:

- to prepare different teaching materials and work sheets for students
- as a source of photos, videos, and experiments
- to direct students to a web page with information about physics ([www.ljudmila.org/ostnovo/strani/fizika.html](http://www.ljudmila.org/ostnovo/strani/fizika.html))
- for online tests
- to access the Moodle virtual physics classroom (<http://193.2.241.58/moodle/login/index.php>), where students can find summaries of different topics, exercises, tests, homework, links to interesting web pages, and instructions for their work
- to communicate with parents, students and other teachers
- to access interactive instructional software
- to use the interactive whiteboard.

This particular teacher had prepared a lot of their own materials in materials based on different resources found online and in hard-copy literature. Following classroom-based lessons on a topic, pupils use the computer lab to perform electronic simulations online.

The teacher often uses the computer lab in Slovene language and literature lessons, opening with an explanation of the topic followed by individual work using the computer. The teacher uses online resources to prepare lessons, using peer-created materials (such as grammar and spelling exercises), materials provided by authors, readings of poetry by actors, and newspaper texts. Typical exercises include texts in which pupils have to insert words or punctuation, or order words correctly to complete sentences. This particular teacher also posts lots of their own material online, and maintains class blogs: one of them has received 33,000 visits ([www.slovo.mojforum.si](http://www.slovo.mojforum.si)). They also maintain their own website with materials and links to other websites.

Finally, the school uses Skype and video conferencing to support its international projects.



### 3. IMPACT, BARRIERS AND ENABLERS

#### 3.1 SCHOOL

##### ICT DEVELOPMENT PLAN, IMPLEMENTATION STRATEGY, ORGANISATIONAL CHANGES AND ATTITUDES

- **Impacts**

- School leadership is very supportive of ICT, with a planned strategy for implementation.

- **Barriers**

- Lack of funds and time restrict what can be achieved.

- **Enablers**

- The ICT co-ordinator and innovative teachers receive good support from the school principal and deputy.

##### RESOURCING

- **Impacts**

- The infrastructure in itself is relatively good, but support is limited to one teacher, half-time, supported by a colleague on a voluntary basis.
- The school uses Moodle as its learning management system (LMS).

- **Barriers**

- There is no provision for technical support – support is provided directly by suppliers, and has to be logged and paid for on a case-by-case basis.
- There are insufficient funds for replacement of equipment.
- Some computers are too old for higher-use demands.
- Teachers would like computers in every classroom.
- Teachers would like to have more interactive whiteboards.
- The ICT co-ordinator has to combine a half-time job as physics teacher with technical support, support of teachers, development of ICT innovations, and planning and provision of in-service training, in addition to involvement in a number of international projects. Limitations in support make the school less innovative in ICT use than it could be.

- **Enablers**

- Although there is not a particular lack of equipment, more organised technical support (either locally or provided by the local authority) and prioritisation of support for teachers within the school would be beneficial.
- More funding would allow the school to expand and update equipment.
- It might be beneficial to consider a client-server arrangement in the future, which would prove more efficient and cost effective.

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## THE CURRICULUM AND ICT

- **Impacts**

- ICT is used in all subjects, but to differing degrees. Although the National Curriculum includes elements of ICT, it is not prescriptive in terms of how it is delivered so schools and individual teachers have autonomy in this respect.
- The role of the Ministry of Education as an enabler is very important. The Ministry supports the development of different didactical software, produced by teachers and companies, in different ways: financial, technical and as advisors.

- **Barriers**

- Slovenia represents a very small market for commercial learning resources, hence there are a lack of suitable resources.

- **Enablers**

- Teachers are very active in producing materials themselves, helping to overcome the lack of commercial resources, although would welcome more time to do this.

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## ASSESSMENT OF ICT AND ICT FOR ASSESSMENT

- **Impacts**

- Although ICT is not used or assessed in national examinations, it is used for diagnostic testing by teachers themselves. Some teachers use online tests prepared by themselves or other teachers, and consider this to be helpful. Teachers ask students to create PowerPoint presentations as part of assessment exercises.

- **Barriers**

- There is a lack of ready-made assessment materials.



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## ORGANISATION OF SUPPORT

- **Impacts**
  - See Resourcing above.

## 3.2 TEACHERS

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### ICT AS A TOOL FOR COMMUNICATION AND COLLABORATION

- **Impacts**
  - Approximately 50 per cent of teachers use ICT for communication and collaboration, and all teachers use email.
- **Barriers**
  - Some teachers still request printed materials.
- **Enablers**
  - Teachers would like key information to be posted on the school website or intranet, and feel that this would save them time.

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### ICT AS A TOOL TO IMPROVE THE QUALITY AND EFFICIENCY OF PLANNING AND ADMINISTRATION

- **Impacts**
  - All records, documents and financial accounts are created and maintained electronically, as are communications with parents and the local authority.
- **Barriers**
  - Printed documents are still required for some purposes, such as for review by the Inspectorate.

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### THE PEDAGOGICAL ROLE OF ICT TO IMPROVE LEARNING AND TEACHING

- **Impacts**
  - The pedagogical effects of ICT are limited. Good teachers will be better with ICT, but ICT does not make a poor teacher good. In subjects such as physics, ICT provides substitutes for equipment that the school cannot afford and enables teachers to conduct experiments and simulations which would be too risky or expensive in real situations.

- **Barriers**
  - There is a risk that pupils develop only a superficial understanding of a topic when using ICT: for example, there is a tendency to not fully explore a topic or validate the authenticity of sources. Students still need to develop a sound knowledge base, but this can prove difficult when faced with access to the huge range of resources that ICT can provide.
  - Sometimes the technology fails, for a variety of reasons. This is frustrating for teachers and especially for those who lack confidence in their own ICT abilities.
- **Enablers**
  - The motivation of pupils has increased, and they develop new skills, such as finding information. Schools should focus on helping students to master information skills, but to do this, teachers require more time to master these skills themselves.

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## ICT SKILLS

- **Impacts**
  - Skills are improving constantly. Teachers no longer see ICT skills as 'optional'.
- **Barriers**
  - There is a lack of time for training and practicing ICT skills. As a result, some teachers are still reluctant to use ICT.
- **Enablers**
  - A reliable technical infrastructure is essential.

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## PARTICIPATION, MOTIVATION, CONFIDENCE AND PERFORMANCE

- **Impacts**
  - ICT is helping to improve participation, motivation, confidence and performance.
- **Barriers**
  - The lack of time available to teachers is a barrier, and the changing demands on teaching over recent years are often underestimated. Teachers can no longer reuse methods and resources collected over a period of time, but must instead constantly master new technologies and develop new resources, not to mention the impact of students' unlimited access to information both inside and outside school. Rapidly increasing knowledge of ICT causes frustrations: as one teacher said: "The more we work, the more we have to do!".

### 3.3 LEARNERS

#### ICT SKILLS

- **Impacts**
  - Students have extensive ICT skills in areas such as gaming (boys) and online communications (girls), but have more limited skills in areas such as office applications. Students also lack higher-order information skills.
- **Barriers**
  - Students assume themselves to be more knowledgeable than they perhaps are.
- **Enablers**
  - Using ICT in school contexts helps students to learn 'by osmosis'.

#### MOTIVATION, PARTICIPATION AND CONFIDENCE

- **Impacts**
  - Students' motivation is positively influenced by using ICT in creative ways.
- **Barriers**
  - Motivation, participation and confidence might be a temporary effect, if learning is not adapted to new contexts, experiences and interests.
  - The expectations of parents relating to home use of ICT can sometimes be a barrier.

#### PARTICIPATION IN ALL ASPECTS OF SCHOOL LIFE: ACADEMIC, SOCIAL, PERSONAL

- **Impacts**
  - Students are very positive about the school atmosphere and the conditions in which they work, learn and play.

### 4. REFERENCES

- **Sources:**
  - Interviews with various staff including the physics teacher/ICT co-ordinator, English teacher, and Slovene language and literature teacher. Also, interviews with 9th grade students.
  - Observation of a physics class in a computer lab.



- School brochure (in English).
- **Further information:**
  - School website ([www.ljudmila.si/ostnovo](http://www.ljudmila.si/ostnovo)).