Engaging students into learning processes and promoting collaboration within school community through digital solutions in the Primary School Vežice

🚶 About our school

- **Location**: Rijeka, Primorje-Gorski Kotar County
- **Established**: 1914
- **Status**: Public school that provides primary and lower secondary education (1 – 8 grades)
- **Number of pupils:** 373 (in 2016)
- **Website:** http://os-vezica-ri.skole.hr/
- **Contact person:** Violeta Nikolić

⚛ Why did we innovate?

One of the key goals of the school is to make education a joyful experience to students, their parents and teachers, and teaching a joyful activity to teachers. Another key goal is to foster students' personal growth and development into the capable, happy, and successful people. The school has introduced innovations to contribute to realisation of these goals in practice. The school believes that innovative approaches encourage students to be more engaged into learning processes; motivate teachers to prepare students to master essential key competences; and foster more collaborative relationships between teachers, students and their parents.

⚙ What were our innovations?

The school has introduced a number of innovations into its daily practices: iPads for teaching purposes; e-Diaries; a web-based platform alleviating communication between students, parents and

teachers; apps for communication between the school leader, teachers and other school staff; and robotics classes, among others.

The Primary School Vežice has organised itself as an 'iSchool' underlining the fact that since 2012, it has been using iPads in daily teaching practices. The overall goal of the 'iSchool' is to transform the current way of teaching into interactive one accompanied by multimedia and the Internet. The school fosters digitalisation of teaching materials, production of videos and digital books (iBookAuthor), and learning through playing. Teaching materials and tasks are sent via e-mail, e-reading is supported, tests of knowledge are conducted online, which leads to acquisition of digital competences.

The main methodological characteristic of using iPads in the school is the application of so-called "flipped learning". Students acquire the knowledge by themselves, whereas the teacher has the role of mentor – he/she leads and guides the students. Such an attitude implies higher engagement of students for the preparation of teaching classes, more research in teaching and more group work. The first set of iPads was bought for all teachers and for students of the grade 8 with the lowest achievement rates in the school. Later on, five additional iPads were bought for teachers of the lower grade classes (grades 1 – 4).

The use of iPads has inspired the school to develop robotics as an elective activity, which has a growing interest from its students. In 2015, the school applied for the participation in the Croatian Makers project organised by the Institute for the Development and Youth Innovation, as a part of which the school received five educational sets of the mBot robot. The students also create robots by themselves, which means that they are learning electronics in the primary school – e.g. a car with remote control managed from an iPad.

Since 2013, the school has been using e-Diaries (*e-Dnevnik*) instead of standard paper-format diaries. This web application for managing classroom books in electronic form was first developed by the Croatian Academic and Research Network (Carnet). e-Diaries has a system of reports that enables pedagogical monitoring, preparation of reports for the sessions of teachers' council and various reports on students' grades and absences.

The school also uses a web-based platform Edmodo to better organise communication between teachers and students, by creating a secure virtual classroom group and to enable it in times after the regular classes have finished. Edmodo allows sharing the content (e.g. digital resources for students), sending information on and accessing homework as well as different notices for students and their parents, creating and sharing online polls for students. This platform is also used as means to teach and train students in digital literacy, and internet security. Parents are also allowed to use Edmodo for communication with teachers. What differentiates Edmodo from some other similar tools is the fact that anonymous posting is not possible, and that private messages between students are not possible because students can only communicate with the teacher or the whole class.

The school leader has also introduced several apps for communication with teachers and other school staff, e.g. Google Drive, Blackboard. The school leader also promotes communication with teachers via e-mails, thus making the information available to all during all times.

⭐ What have we achieved?

Pupils

The effects of using iPads at school were investigated and evaluated in cooperation with the Faculty of Philosophy of Rijeka. The results demonstrated that students were better motivated for learning,

and slightly improved their school achievements. Students were more cooperative in building the teacher-student relationship, and teachers were more open to students in the sense of acknowledging their potentially better knowledge on ICT technologies, which resulted in students being praised for skills they have acquired in their leisure time.

According to the interviewed teachers, the use of iPads enabled better communication between the students in particular because the students with lower grades openly cooperated with better-performing students, which resulted in a peer-learning process. The interviewed geography teacher has also observed that the students have become more motivated to study not only because they used iPads, but also because they were able to use iPads for learning outside the classroom, for example, in the nature.

Based on the teachers' statements from the focus group, the implementation of Edmodo offered a space for students who are more anxious and reserved to open up in a virtual community. In addition, the application provided an opportunity for students to develop their skills in visual communication. Moreover, those students who have difficulties with their homework have been given the opportunity to discuss the issues with the teacher via Edmodo.

According to the interviewed informatics teacher, students participating in the robotics classes have become highly motivated for learning and more cooperative. As a result, instead of planned two teaching hours per week the school now offers four or five hours on robotics. The school also partcipates in the competitions on robotics organised by the Institute for the Development and Youth Innovation. The students of the Vežice School already won the 1st single place and the 3rd team-based place in 2015.

Teachers

Virtual communication through Edmodo has demonstrated to be highly welcomed by teachers as well. Students, who are usually shy and less active during the school classes, open up to them more easily in a virtual world. This positive aspect is appreciated by teachers because they can indirectly motivate students to do more, to participate more actively, share their views and ideas which they do not feel comfortable sharing in the classroom and even achieve better results.

According to the school leader, an open flow in communication at school has fostered creativity of teachers because they were not afraid to share their opinions and ideas.

School as a whole

The school motivated publishers to develop digital versions of the textbooks as an option for parents, students and teachers. The publishers made it easier for the iSchool to teach with iPads because the students had their literature handy on the tablet, and therefore the weight of the school bags was diminished. In addition, digital books are free for socioeconomically disadvantaged students across Croatia.

The process of change: what helped us succeed?

School level

According to the school leader, the main supportive factor was the willingness and openness of teachers to new teaching methods, since there was awareness that outside school, students use computers, tablets and other electroic devices on a daily basis. Trainings for teachers were organised by Apple Croatia, offered for free and delivered on Saturdays in the total of 50 training hours.

The interviewed school staff underlined that the school leader's motivation and enthusiasm to introduce and support innovative teaching and learnig solutions was another crucial factor.

The decision to introduce iPads was also influenced by the fact that the school had needed financial resources (income received from the sales of the school apartment).

The precondition to have the possibility to use iPads and online tools in the classroom was the instalment of Wi-Fi in all classrooms in 2008, which is still a rare practice in Croatian schools.

The organisation of "Project days" at school motivated students and teachers to investigate different possibilities provided by iPads: for each Project day, one topic is chosen (e.g. food) and prepared by teachers of different subjects with a focus on the learning content prescribed by the curricula. Students are offered workshops during which the learning content is mastered, either with iPads or practical exercises.

Other supportive elements include invitations to the school leader and the teacher of informatics to participate in conferences and to present the school's good practices, which is in a way reflecting the acknowledgment of the school's good work.

National level

The Croatian National Curriculum Framework presumes a high level of professional competence of teachers and their ability and flexibility to effectively utilise a range of methods and teaching aids, and successfully organise education and teaching. This high level of freedom in teaching is a supportive factor on a system level. In the Primary School Vežice, the flexibility in the choice of teaching methods and tools was respected.

The existing legal framework in general supports passively the use of ICT technologies, in a sense that it does not limit or hinder the use of such technologies at school.

One of the ministers responsible for education who was the minister when the innovation was first implemented at school, supported the action because he was a professor at the Faculty of Electrical Engineering and Computing and therefore was aware of the benefits of ICT technologies for teaching and learning. His support was mainly non-financial, and only minor financial resources were attributed to the school (e.g. to visit conferences) in the name of the iSchool project.

International level

The Primary School Vežice cooperates and exchanges ideas with schools in the UK and the Netherlands through collaboration web tools, such as Google Drive, BlackBoard, Google Hangouts. The Steve Jobs School in the Netherlands shared their experience with the school (short workshops on using iPads) and sent some used iPad cases to the Vežice School in the first implementation stages. The school staff also travelled to the UK to visit the Apple school and learn from them.

 # The process of change: what limited us?

School level

In the beginning of the iSchool development, the school could not provide iPads for all students, therefore parents were asked to provide iPads for their children. Although the majority of parents during last five years were supportive to investing in iPads, parents of students of the 5th and 6th grade did not approve that idea. To inform parents about the possibilities and effects of the ICT technologies

use in teaching, school started to organise workshops for parents on various specific themes, such as internet security, benefits of implementing iPads for teaching and learning, how parents can control students' learning and their achievements via iPads etc. Initial lack of information on the efficiency of teaching methods among parents resulted in the initial resistance to innovation.

At the beginning of the iSchool project, there was a lot of fear and scepticism among some teachers. Although the majority of teachers gradually accepted iPads, there are still some who resist to change, from the personaland professiopoint of view.

Municipal level

As the financial school autonomy was recently transferred from schools back to municipalities, schools cannot decide on their budget allocation but have to consult with local authorities and ask them to finance their needs.

The local community (other schools in the city and wider surroundings, the city's management structure, sports organisations, music schools, etc.) did not support the iSchool project in the beginning, neither via financial nor professional support. Only after the innovation was implemented for a few school years, did the wider community of other schools show interest in the results and changes that happened at school.

National level

The strictly prescribed duration of one teaching hour of 45 minutes and a teaching schedule which regulates that one subject is taught after the other, does not provide the possibilities and opportunities for arranging the so called "block of teaching hours", i.e. two teaching hours for one subject. This creates a barrier since teachers are not given sufficient time for planning and delivering project-based and experiential learning, which are time-demanding.

The support from national institutions, such as the Ministry for Education and the Teacher Training Agency has been rather weak and insufficient. According to the interviewed school staff, the support for implementing the systemic changes is more declarative rather than based on tangible support measures.

Sustainability of change

The use of iPads and Edmodo have been sustainable for several years now because they have been used by teachers, students as well as supported and used by parents. They have become a part of a regular school life and teaching practice.

The school transfers good practices to other Croatian schools interested in applying tablets or other IT tools in teaching practice, participates in national and international conferences related to IT in education, where the school staff presents its practices and results.

Further exchange of experience and good practices happens on regular basis during the school leaders' yearly conferences and trainings organised by the Teacher Education Agency, and at teacher CPD activities organised by the same Agency where opportunities for presenting best practice cases are encouraged.

What did we learn in the process? Key messages

Since the position of the school leader is an elected position for a duration of four years, with possible re-elections, there is a risk that the implementation of innovative practices could depend on the lifecycle of the school leader who introduced and implemented those innovative practices.

The following factors on the system-level would help to bring the school's innovation into the mainstream practices across country: higher financial resources; the authorities' commitment to provide operational support (e.g. cover transport costs for teacher trainings in other cities); committed strategy on the national level, or at least regional level to implement ICT for teaching; the strategy preparing teachers for "modern" changes in teaching and learning; educating higher education students (future teachers) on how to use ICT in the classroom as well as providing them with theoretical backgrounds of pedagogy linked to ICT; educating parents on investments in ICT.

Further reading

- **A full report** 'Supporting School Innovation across Europe' explores the conditions in the school education system that can enable or constrain positive change in schools.
- **12 case studies** explore the national approaches and individual school innovations. They include the perspectives of key national education experts and stakeholders who were interviewed and took part in workshops.
- **24 individual profiles** give a quick view of the changes and experiences in each school.

Available here:
www.schooleducationgateway.eu/innovation

- The school profiles also feature as part of the European Toolkit for Schools, alongside a range of materials and many other inspiring examples of practice from European countries.