

## EMPOWERING STUDENTS FOR VIOLENCE PREVENTION WITH HELP OF MULTIMEDIA LEARNING RESOURCES

### OSNAŽIVANJE UČENIKA U PREVENCIJI NASILJA UZ POMOĆ MULTIMEDIJSKIH OBRAZOVNIH SADRŽAJA

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#### Abstract

In order to answer the needs for empowering students, teachers and parents in the area of e-safety, NGO "Suradnici u učenju" helped five primary schools in European Union-funded project "Children's safety on the Internet" developing new school curriculum area for children's safety on the Internet for students aged 7-14, their parents, teachers and local community. Curriculum consist of pedagogical-didactical model, acceptable use policies, multimedia resources, textbooks and guides. The project aims were improving students' digital competences and encourage children to assume responsibility for their own safety with a focus on empowerment, emphasizing responsible behaviour and digital citizenship and to raise e-safety awareness. In this paper we discuss the content and evaluation of school curriculum developed in that project. The curriculum was tested with students aged 7 to 14, their parents and teachers. Results show that the curriculum and learning resources fully satisfied students' expectations and that the team of authors successfully implemented modern strategies in the curriculum and resources creation. That school curriculum is now used as base for new national curriculum of subject Informatics and cross-curricular topic Use of ICT. Resources created for school curriculum are freely available for further use on project web site <http://petznet.hr>

**Keywords:** *e-safety, electronic violence prevention, school curriculum, digital skills, children's safety online*

#### Sažetak

Kako bi osnažili učenike, učitelje i roditelje u području e-sigurnosti, udruga „Suradnici u

učenju“ surađivala je s pet osnovnih škola na provođenju EU projekta „Sigurnost djece na internetu“ razvoj novog školskog kurikulumuma za sigurnost djece na internetu za učenike starosti 7 do 14 godina, njihove roditelje, učitelje i lokalnu zajednicu. Kurikulum se sastoji od pedagoško-didaktičkog modela, politika prihvatljivog korištenja, multimedijjskih sadržaja, udžbenika i priručnika. Cilj projekta bio je poboljšanje digitalnih kompetencija učenika, poticanje učenika u preuzimanju odgovornosti za svoju sigurnost s fokusom na osnaživanje uz odgovorno ponašanje, digitalno građanstvo te podizanje razine osviještenosti o sigurnosti na internetu. U ovom radu govorimo o sadržaju i evaluaciji školskog kurikulumuma koji je napravljen u tom projektu. Kurikulum je testiran s učenicima 7 – 14 godina, njihovim roditeljima i učiteljima. Rezultati pokazuju da kurikulum i obrazovni sadržaji zadovoljavaju učenička očekivanja te da je autorski tim uspješno primijenio moderne strategije pri razvoju kurikulumuma i sadržaja. Spomenuti školski kurikulum upotrijebljen je kao osnova pri stvaranju novih kurikulumuma za Informatiku i međupredmetnu temu Uporaba IKU. Svi sadržaji su javno dostupni na mrežnoj stranici projekta <http://petznet.hr>

**Ključne riječi:** *e-Sigurnost, prevencija elektroničkog nasilja, školski kurikulum, digitalne vještine, sigurnost djece na internetu*

#### 1. Introduction

##### 1. Uvod

European Parliament and the Council of the European Union included digital competence in

key competencies which each person needs to possess in order to adapt to the rapidly changing world. Their definition of digital competence, along with knowledge and skills, include critical attitude toward the responsible use of ICT. In this digital age children are focused on computers and mobile devices from early childhood. It is of utmost importance to teach them how to use those devices properly and appropriately [1].

At the moment, students in compulsory schools in Croatia have a chance to obtain ICT related skills and knowledge only if they choose an elective subject - Informatics in grades 5 to 8, or if similar extra-curricular activity is enabled for grades 1 to 4 [2]. However, the topic of e-safety is not part of actual Informatics curriculum at all. Therefore not even the minimum of children's knowledge about appropriate and safe use of internet is obligatory at the time. Education Sector Development Plan 2005-2010 [3] considers equipping people with the skills to use information and communication technology in everyday life as one of the prerequisites for active involvement in an information-based society.

According to the UNICEF's survey in Croatia [4], 85% of children have Internet access at home, their favourite activities on the Internet are seeking entertainment, communication with friends, and use of social networking sites while using the internet for research and learning are less frequent. The same survey showed that 34% of children experienced some form of electronic violence, comparing to 12 % of European children, who say that they have been bothered or upset by something on the internet [5]. Findings from EU Kids Online research "Risks and safety on the internet" suggest that digital skills training needs continued emphasis and updating in terms of training, safety features and applications operation to ensure that all children reach a minimum basic standard and to prevent digitally isolated and unskilled children [5].

In order to answer the needs for empowering students, teachers and parents in the area of e-safety, NGO "Suradnici u učenju" helped five primary schools in European Union-funded project "Children's safety on the Internet" developing new school curriculum area for

children's safety on the Internet for students aged 7 -14, their parents, teachers and local community. The curriculum is designed in a way which gives schools, teachers and students certain autonomy in choosing the content, methods and forms of work. It provides the educational and learning outcomes and standards of their acquisition whilst addressing all key competences of the European Union following violence prevention strategies and guidelines [6] & [7].

## 2. Project development and implementation

### 2.1. *Razvoj i implementacija projekta*

Project "Children's safety on the Internet" was a European Union-funded project (October 2013 - December 2014) which NGO "Suradnici u učenju" and Veliki Bukovec primary school developed together with partners, primary schools Popovača, "Mladost", "Gripe" and "Mato Lovrak", financed from a grant scheme "Further development and implementation of the Croatian Qualifications Framework" (Europeaid/131254/M/ACT/HR).

The project objectives were:

- to develop learning outcome-based school curriculum area for children's safety on the Internet which will enable holistic approach involving students, parents and teachers on the same goal;
- to develop and implement appropriate pedagogical and didactical model for student centred learning which will make the most of teachers' potentials and new technology strength;
- to improve primary school teachers' educational skills and expertise so they could apply the new methodologies for student centred learning;
- to improve students' digital competences and encourage children to assume responsibility for their own safety as much as possible with focus on empowerment, emphasizing responsible behaviour and digital citizenship;
- to raise students, teachers, parents and general public awareness and understanding of issues relating to the children's safety online in synergy with the EU policies [8].

Project facilitated cooperation and experience exchange as well as sharing best practice between

Croatian and EU schools on issues relating to children's safety online and gives equal opportunities to all students to reach standard learning outcomes in area of safe, legal and ethical behaviour on the Internet and to prevent digitally isolated and unskilled children.

Project Pedagogical team worked on development and publishing of school curriculum area which consist of four courses addressing one of four age groups in primary schools (students aged 7-8, 9-10, 11-12 and 13-14). School curriculum is vertically adjusted in five units: information, communication, content creation, safety and problem solving as recommended in EU Framework for Developing and Understanding Digital Competence in Europe [9]. Some of the topics covered in curriculum are: personal data protection, e-mail phishing and scams, netiquette, online communication and collaboration, risks on social networks, responsible use of mobile devices, sharing and authoring rights, identity theft, digital footprints, e-portfolios and online presence, evaluation of information on the Internet, how to protect computer and family, prevention of cyberbullying [8].

### 3. Learning resources

#### 3. *Obrazovni sadržaji*

Each set of teaching/learning materials include textbooks for students, multimedia resources, teachers' guides and guides for parents. Learning objects within teaching/learning materials were created in form of text, hypertext, pictures, animated stories, videos, audios, computer games, social games, colouring pages, photos, interactive quizzes, learning quests. Along with the classic printed textbooks, students, teachers and their parents can use digital versions in PDF formats, as well as digital e-books. Moreover, virtual classroom provide students with a personalized learning platform. Students are allowed to choose a content themselves – texts, examples, presentations, posters, comics, exercises and quizzes to study, as well as the pace at which they will go through the content individually and learn.

Teachers' guides provide lesson plans with summary and learning outcomes enriched with suggestions for technology and resources so that

every teacher can easily see which equipment and resources are needed and how to broaden their knowledge. Guides for parents accompany each lesson from the student's textbook with short explanations, additional family activities which parents and children can do together at home.

The characters which illustrate various topics are created specifically for this curriculum. Special attention was paid to gender equality, therefore there is an equal number of male and female characters and it is easy for children to put themselves in the shoes of any of the characters. Multimedia and digital resources were created for all lessons, special attention was payed to creation of 22 computer games and interactive quizzes and 56 animated stories, audio and video clips which give students an opportunity to learn individually, through games and problem-solving activities. Digital materials have a specific design, the content is automatically adjusted to the device display and its resolution which enables students with special educational needs to use them more easily. More than 800 learning resources are organized in a database and freely available on the project website petzanet.HR [10].

### 4. Curriculum piloting

#### 4. *Pilot-testiranje kurikuluma*

School curriculum was tested and evaluated by two sides - schools which take part in project and external advisors. Pilot testing was performed with 201 students (aged 7 - 14) - 2 classes from each participating schools. The testing was organized in September and October 2014 in all schools. In every class ten lessons were delivered in the weekly schedule, two lessons each week. Testing of the curriculum was monitored by using the pre-test and post-test questionnaires created especially for this project with age appropriate language and design accompanied with teachers diaries and focus groups with students and parents after the curriculum was delivered. The questionnaire consisted of three groups of questions: general, e-safety and digital skills, and satisfaction with learning resources.

In the pre-testing there were 25 students of the 1st grade; 44 students of the 2nd; 18 students of the 3rd; 18 students of the 4th; 15 students of the

5th; 34 students of the 6th; 22 students of the 7th and 25 students of the 8th grade. In the post-testing there were 22 students of the 1st grade; 43 students of the 2nd; 18 students of the 3rd and 19 students of the 4th; 12 students of the 5th; 36 students of the 6th; 18 students of the 7th and 20 students of the 8th grade. In the pre-test 49,7 % were male and 50,3 % female pupils and in the post-test 46,6 % were male and 53,3 % female pupils.

The average age of first internet use is 5,6 which means that students start to use Internet before they start 1st grade, and that age is lower than findings in EU Kids Online research [5] which showed that the average age of first internet use is seven.

Research The International Computer and Information Literacy Study (ICILS), conducted by IEA - International Association for the Evaluation of Educational Achievement, 2013 in 21 countries showed that only 1 % of Croatian teenagers are on the highest level of computer and information literacy that includes critical evaluation [11]. Although results from ICILS cannot be compared with results of this question it shows us that young students tend to believe everything they find on the Internet. Considering the fact that 77 % of them started to use Internet before entering 1st grade emphasise the importance of lessons developing critical evaluation of information in the curriculum.

**Table 1** Critical thinking and evaluation

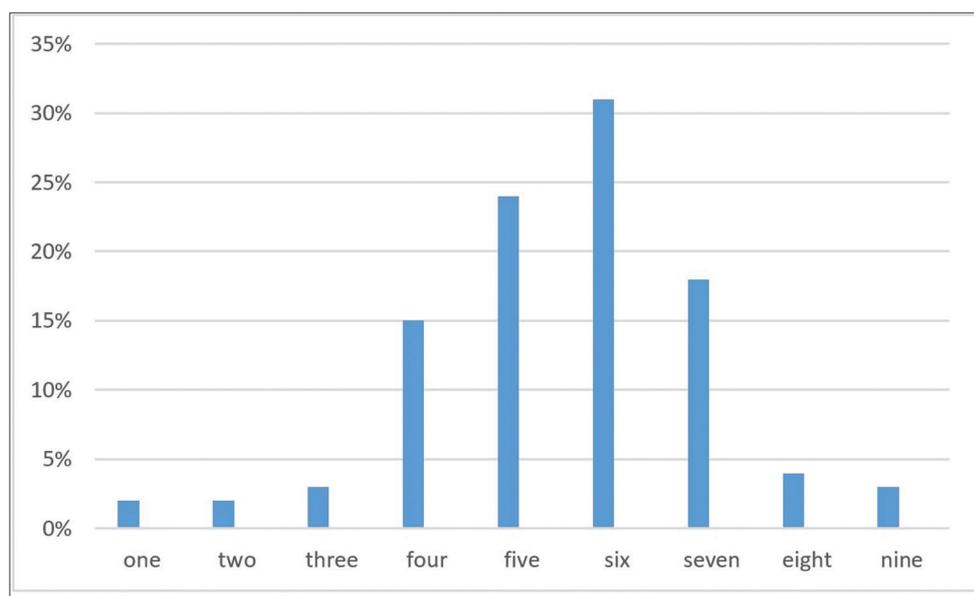
**Tablica 1** Kritičko promišljanje i vrednovanje

Can you believe everything you read on the Internet? (in %)				
Grade		Yes	No	I don't know
1st & 2nd	Before	20,9	79,1	0
	After	4,7	87,5	7,8
3rd & 4th	Before	0	100	0
	After	0	100	0
5th & 6th	Before	0	93,9	6,1
	After	0	100	0
7th & 8th	Before	2,1	89,4	8,5
	After	0	94,7	5,3

In Table 2 you may find some comparison of students answer prior and after pilot project implementation.

The question regarding competences of friends who did not take part in this research also addresses one of the important digital competences - helping others, sharing knowledge and bridging the digital gap [12].

The Last part of the questionnaire contained questions regarding students' satisfaction with learning resources. In general students were very satisfied with lessons delivered in project (92 - 100 %). Comparing students' satisfaction with different kinds of learning resources, students mostly liked animated stories and videos than games and worksheets and in the last places e-book and textbooks.



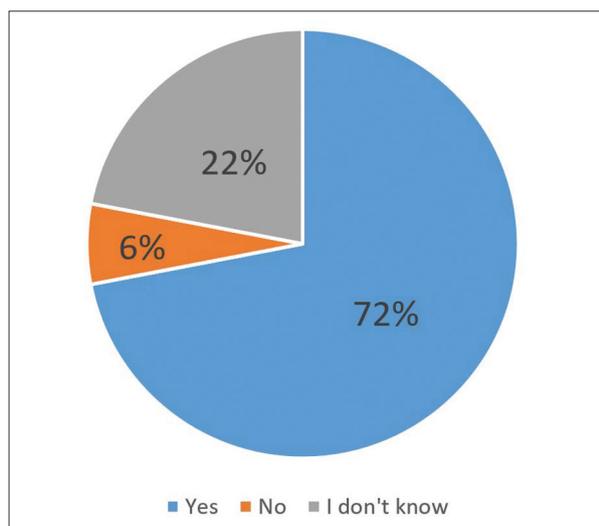
**Graph 1**  
How old were you when started using the Internet?

**Graf 1**  
S koliko godina ste se počeli koristiti Internetom

Before	After
63 % of students knew that they are leaving digital footprint every time they use the Internet	83 % knew that
71 % of the students agreed with the statement that the content that you post on the Internet someone else can seize and represent themselves as their author.	90 % agreed with that statement
65 % of students disagreed with the statement that the information you find on the Internet may be used without mentioning the source.	83 % disagreed
79 % of the students thought that the victims of electronic violence should not hide that they are victims and wait for abusers to stop	81 % thought that
50 % of students agreed or strongly agreed that creation of hate group on social network and posting in it is bad as hitting someone in real life.	71 % agreed
56 % of students disagreed with the statement that “if I find out that someone is a victim of cyber bullying it is best not to interfere, and only watch from the side.”	73 % disagreed
66 % of students think that different rules of behavior apply on the Internet than in real life	40 % think that
13 % of the students agreed with the statement that they may disclose their personal data on the Internet	3 % agreed

**Table 2**  
Pre and post comparison

**Tablica 2**  
Usporedba podataka prije i poslije implementacije projekta



**Graph 2** Do you think that your friends need additional knowledge about the use of the Internet, its good and bad sides?

**Graf 2** Mislite li da vašim prijateljima treba dodatno znanje o uporabi Interneta, njegovim dobrim i lošim stranama

Students in grades 1<sup>st</sup> & 2<sup>nd</sup> just answered question with Yes/No and senior grades gave marks 1 - 5. Such high grades show that learning resources fully satisfied students' expectations and that the team of authors successfully implemented modern strategies in the curriculum and resources creation. Results also show tendency toward multimedia resources in all grades and could be

used as recommendation for future creation of curriculum resources. (Table 3).

When asked “Would you like to have lessons about children’s safety on the Internet next year too?” 82,2 % of students from all grades answered yes, which is also a significant sign that the curriculum content, learning resources and the way of teaching was set up in the way that suits needs of today’s learners.

**Table 3** Average marks for different learning resources

**Tablica 3** Prosječne ocjene za različite obrazovne sadržaje

	1st & 2nd	3rd & 4th	5th & 6th	7th & 8th
<b>Textbook</b>	95 % yes	4,8	3,9	3,7
<b>e-book</b>	95 % yes	4,9	3,7	4,2
<b>Worksheets</b>	100 % yes	4,9	3,8	4,3
<b>Computer games</b>	100 % yes	4,9	4,3	4,3
<b>Animated stories and videos</b>	100 % yes	4,9	4,2	4,7

## 5. Conclusion

### 5. Zaključak

The limitations of this research were the strict timeframe of project implementation, and a small number of students, teachers, parents and schools.

The project timeframe dictated a narrow time slot for the implementation of the curriculum and its testing, so we found out that the implementation was more intense than originally planned. The results of the research were immediately used for improving the quality of the created curriculum and learning resources and after that, all updated resources were published online for free, unlimited use. For measuring influence of this curriculum in prevention of electronic violence, long term research is needed which was not possible in this project.

What is promising is that in 2014/15 school year alongside with the originally planned five schools, around 20 schools started to use the learning resources and in the 2015/16 school year the number of schools raised to over 50. Also, the learning resources and the school curriculum "Children's safety on the Internet" under its short name "Pet za net" have found their place in the new national curriculum for the cross-curricular subject called Use of ICT as well as in the curriculum for Informatics (Computer Science) subject for all primary and secondary schools in Croatia.

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Urednica digitalnog časopisa “Pogled kroz prozor” i portala ucitelji.hr. Autorica niza udžbenika i zbirki za informatiku i matematiku za osnovne i srednje škole te znanstvenih i stručnih članaka.

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