



Digital Literacy in the First Three Years of Primary School: Case Study in Slovenia

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The article deals with the importance of digital literacy, as well as with the role of school and teachers in developing digital literacy among primary school children. The theory of digital literacy is entering school curriculum in many different forms, be it as an independent or a cross-curriculum subject. While the differences in student knowledge of this field are very big, there are also discrepancies between teachers' qualifications and motivation. The study focuses on digital literacy with the example of Slovenian primary schools (first three years, children age 6 to 9). Digital literacy is a part of didactic recommendations for mandatory subject curriculum. Computer use in classes depends on individual teacher's resourcefulness and his or her ability to use computers or the Internet, which in turn has an important influence on students' digital skill development. Qualitative study methods were used in the survey to ensure that the participants understood the meaning of digital literacy integration in classes. Three primary schools were invited to participate in the survey and three interviews were conducted at each of the three (teachers, parents and students were interviewed). A conclusion was made that teachers and students associate differences in digital literacy with students' knowledge, learning skills and use of information and communication technology (ICT). Parents associate the differences with the use of ICT that is connected to the socio-economic background of individual families. Teaching with the use of ICT plays an important role in boosting digital literacy in primary schools, although this depends largely on teachers' motivation and further education. The conclusions of this study show that education policy-makers will have to consider giving a different role to digital literacy within school curriculum.

Keywords: computer skills, digital literacy, primary school, teaching ICT, curriculum, Slovenia

Introduction

Apart from literacy skills of reading, writing, listening and speaking, there has been an increase in the establishment of digital literacy, which includes knowledge and skills in the field of information and communication technology (ICT) (Lim & Oakley, 2013, p. 4). Different authors define digital literacy in different terms such as computer, Internet, digital, media and information

literacy. Literacy as a term (Stordy, 2015, p. 472) depends on the intended use of technology and on the understanding of literacy. Literacy in digital technology is the ability of an individual or a group of people to use technology as a tool of work or study. Fraillon, Schulz, and Ainley (2013, p. 17) describe computer and information literacy as the ability of an individual to use computers for researching, creating and communicating with the aim to become more effective at home, in school, at work and everyday life.

Improving digital literacy is included in the 'European 2020 Strategy' (Eurostat, 2015, p. 192). Because all Internet users are exposed to risks, the European Union started the 'European Strategy for a Better Internet for Children' in 2012. The strategy focuses on protection from and education of children about dangerous internet materials (p. 197). In 2007 the Government of the Republic of Slovenia adopted the 'Development Strategy for the Information Society until 2017' (Brečko & Vehovar, 2008, p. 15–16), in which it included plans for increasing ICT integration into school curricula. This, in turn, raises the level of ICT skills and knowledge by individual users. In Slovenia's development strategy 2014–2020, digital literacy is 'of primary importance' (Ministrstvo za gospodarski razvoj in tehnologijo, 2013, p. 12), as 'only digitally literate individuals will easily and equally integrate into the information society' (Ministrstvo za gospodarski razvoj in tehnologijo, 2013, p. 13).

Digital Literacy of Children and the Role of Schools

Children start using ICT in preschool age (Eurostat, 2015, p. 192) and to properly develop their brains, children have to start learning early. This includes developing computer skills starting from kindergarten to the third year of primary school (Saçkes, Cabe Trundle, & Bell, 2011, p. 1698). Škrabar and Sulčič (2009, p371) also emphasize that developing ICT skills and knowledge with children in primary education is important for lifelong learning. Developing ICT skills is connected with the use of ICT in classes, so ICT has to be included in the school curriculum (Kilfoyle Remis, 2015, p. 53), although the inclusion of ICT by itself is not enough. An important role is played by teachers that encourage and teach students (Krapež, 2013, p. 18–20), enabling them to use the computer as a tool for acquiring knowledge. Teachers require knowledge (Gill, Dalgarno & Carlson, 2015, p. 36) to effectively integrate ICT into curriculum in a way that will develop digital literacy of students.

ICT in Classes: The International Dimension

The Computer Science Teachers Association (CSTA) is an association that promotes teaching computer science and encourages schools to show how their curricula ensure coordination with CSTA K-12 (see <http://csta.acm.org>)

/Curriculum/sub/K12Standards.html) Computer Science Standards (Kilfoyle Remis, 2015, p. 53). CSTA K-12 Computer Science Standards are used as a curriculum model in primary and high schools around the world. Another standard that represents the basis of teaching essential computer knowledge and skills is NETS-S (see <http://www.iste.org/standards/ISTE-standards/standards-for-students>), defined in the document 'National Educational Technology Standards for Students' (Williamson, 2011, p. 4).

Ways of integrating ICT into teaching are related to individual subject goals (Bhaumik, 2012, p. 250). ICT can be used to teach traditional subjects because it makes learning more attractive to students (p. 251). In the first three years of primary schools teachers and students use computers as a didactic tool for effective learning and teaching (Vanderlinde & Braak, 2011, p. 124). In classes, ICT can be used for electronic presentations, visiting websites and accessing other resources available on the Internet. It can also be used for communication purposes between different users. The use of ICT in teaching is closely connected with the teachers' skill to give classes (Bhaumik, 2012, p. 247)

Hesterman (2011, p. 353) concludes that students with at least three computers in the classroom have more opportunities to use one. Allowing laptop computers (Cardellino & Leiringer, 2014, p. 851) in classes is very favourable to new ways of teaching and cooperation between students and teachers.

Modern technology enables teachers to find new ways of teaching. ICT has an important role in education because it acts as a tool for learning and teaching (Voogt, Knezek, Cox, Knezek, & Brummelhuis, 2011; Bhaumik, 2012; Kivunja, 2014). New ways and methods of teaching are very important for an innovative ICT use in classes and for developing students' digital literacy (Kivunja, 2014, p. 81). However, Cardellino and Leiringer (2014, p. 849) conclude that there will always be differences in use of ICT in classes due to the fact that some teachers will follow the development of technology and adapt their teaching methods, while others will not.

The use of ICT provides many opportunities for self-learning that enable students to acquire knowledge about the safe Internet use (Selwyn, Potter, & Cranmer, 2009, p. 929). Parker and Lazaros (2014, p. 25) identify typing skills as a very appropriate way of acquiring the most basic computer knowledge and skills. According to Toki and Pange (2014, p. 190), including digital storytelling in classes is a creative and simple way of motivating the youngest students to participate.

ICT in Classes: Slovenian Primary Schools

In Slovenia, primary schools last 9 years and is divided into 3 three-year cycles (Krek & Metljak, 2011, p. 112). In Slovenian schools, adopting and

learning about ICT is an important factor in ensuring equal opportunities for all students (Krek & Metljak, 2011, p. 19). In Slovenian primary schools, ICT is integrated in the curriculum through didactic recommendations for ICT integration into compulsory subjects that do not include basic knowledge of computer sciences in their knowledge standards (Novak, Velikanje, & Krajnc, 2013, p. 150). Therefore, the implementation of ICT in classes depends on individual teacher's resourcefulness and their abilities to use computers and the Internet. This determines the development of digital skills for students of the first three years of primary school.

ICT has also entered Slovenian primary schools through the curriculum of a non-compulsory optional subjects on computer sciences for students of the second three-year period (Ministrstvo za izobraževanje, znanost in šport, 2013) and through the compulsory subject of computer sciences (Ministrstvo za izobraževanje, znanost in šport, 2002) for students of the third three-year period.

In Slovenian primary schools a computer is a compulsory equipment in every classroom during the first three years. How much and in what way the digital material is used in teaching depends on each teacher (Brečko & Vehovar, 2008, p. 48). The curriculum for individual subjects include recommendations for ICT use in classes (p. 22). In the first three years of primary school, students and teachers use the computer as a didactic tool that helps students learn and teachers teach more effectively (Škrabar, 2010, p. 796). Provided that a teacher organizes lessons correctly, the didactic computer programs can help with presenting new teaching content (Mori & Kovše, 2007, pp. 6–8). In the first three years of primary school, teachers most frequently use didactic computer programs in mathematics, natural science studies and Slovenian (Škrabar & Sulčič, 2009, p. 385). Free computer programs are available for teachers on the Internet (p. 377). There is a lot of e-content that can supplement teaching materials if used in accordance with the curriculum. By adding a computer into the classroom, a teacher can motivate and teach students so they will be able to use computers as tools of acquiring knowledge (Krapež, 2013, pp. 18–20). The use of e-content is very popular among teachers (Čampelj & Čač, 2011, p. 8) as there are many classroom activities (Pesek & Mustar, 2011, p. 21) connected with e-content that encourage teachers to use them.

Methodological Approach and Methods Used

The object of this study is the in-depth understanding of digital literacy inclusion into the first three years of primary school. The empirical part was planned with a qualitative study method. The study (Easterby-Smith, Thorpe & Lowe, 2007, p. 49) was conducted through a paradigm of social constructionism. With this approach, we gained a deeper insight into the thinking,

wishes and expectations of the students (as well as their teachers and parents) of the first three years concerning digital literacy inclusion in classes. Another aim was to further understand the differences in digital literacy of the students of the first three years. The study about digital literacy in the first three years of primary school was also conducted because the author of the paper, a first-cycle teacher, notices that bringing computers into the classrooms is left upon individual teacher's resourcefulness and ability to use computers and the Internet. This study attempts to thoroughly define the role of teachers in including digital literacy in classes with consideration to didactic recommendations in mandatory subject curriculum.

The subject of the study were three different primary schools. The sample was subjective because the schools were chosen by the researcher. The credibility of the study was enhanced by triangulating sample groups (teachers, parents and students). The following questions were asked prior to the study:

- What are the views of different groups (teachers, parents and students) participating in the first three years of primary school on digital literacy of students of the first three years?
- How do different participants of the first three-year period understand and interpret the use of ICT in classes?
- What is the attitude of teachers in the first three-year period towards didactic recommendations in curriculum?
- How important is the role of the teacher in promoting digital literacy among students in the eyes of the first three-year period participants?

The study has certain limitations because it focuses on digital literacy in the first three years of three primary schools. It also has methodological limitations because it was carried out on a small sample, which means that the results cannot be extrapolated to all Slovenian primary schools. Generalization was not the aim, neither an immanent characteristic of the qualitative study. Another limitation of the study that cannot be entirely avoided is the researcher's bias as a teacher in the first three-year cycle at one of the primary schools.

The data was acquired by interviewing the three groups of the first three-year cycle participants on each of the schools. Interviews were conducted with six first-cycle teachers of the first three-year cycles at each of the primary schools, six parents of the first three-year cycle students who are interested in digital literacy inclusion in classes and four students of the first three-year cycle at each school whom teachers identified as having good speaking skills.

To ensure anonymity, the participating schools were referred to in capital

letters A, B and N. Each interview was immediately followed by a transcription. In the interview transcriptions, the interviewed teachers were given female names beginning with corresponding school letters. In the transcription, the interviewed parents were made anonymous by assigning them male names beginning with corresponding school letters. Furthermore, the interviewed students were assigned diminutive names beginning with corresponding school letters.

Three semi-structured interviews were conducted at each school (with a group of teachers, a group of parents and a group of students). Group interview (Easterby-Smith et al., 2007, p. 111) is one of the approaches to using a qualitative method of an in-depth interview. For the purpose of the study, a semi-structured group interview (p. 114) was conducted with a number of prepared questions that served to form the structure. Questions for each of the three groups of the first three-year cycle participants contained similar subject matters that were adapted to the participant characteristics. The interviews (pp. 120–121) were directed by starting with additional questions, summarizing and making sure the answers were improved without digressing. In the group interview with students (Đurić, Popović Ćitić, & Meško, 2010, p. 37), a method of guided group interview for children was used, taking into account their age, group size, time and place of the interview and the way it was conducted.

The analysis of primary verbal information acquired through the semi-structured group interview was carried out at the end of data collection. The information gathered from the interview transcription was encoded, categorized, analyzed and interpreted based on the combination of content analysis method and assertion analysis. The information gathered from the audio transcription of the semi-structured interviews was encoded. While encoding, the text was written in different colors. In the encryption process, key concepts (patterns) were identified and assigned accordingly to different groups in a theme. The data obtained was arranged and compared in the table consistent with the participants of the study (teachers, parents and students). The patterns repeating within individual themes were arranged with respect to the aim of the study and the data was encoded once again. The key patterns acquired in the process of re-encoding were thus arranged into new themes that were assigned to new categories. Once the data was arranged accordingly, it was analyzed and interpreted so the study questions could be answered. The findings of the study are presented below.

Findings and Interpretation

According to the purpose of the study we tried to answer the study questions asked. The answers were encoded into four categories that will later be presented in detail:

- Digital literacy of students
- ICT in curriculum
- Digital literacy of students
- Role of the teacher

Digital Literacy of Students

The aim of the study was to explore the views of various first three-year cycle participant groups (teachers, parents and students) on differences in digital literacy of the first three-year cycle students. The purpose and aim of the study was to answer the study question: 'What are the views of various first three-year cycle participant groups (teachers, parents and students) on differences in digital literacy of the first three-year cycle students?' The participants attribute the differences in students' digital literacy to the knowledge and skills of students, as well as to their use of ICT.

Knowledge and Skills

It was discovered that students at each of the three schools under study use computers for playing games, watching video materials or photographs and also for studying by acquiring and refreshing knowledge. Children start using ICT at a young age (Eurostat, 2015, p. 192). The study showed that teachers at schools A and B notice that students spend a lot of time on computers and that there are differences in knowledge of ICT use among students. In the primary school system (p. 192), knowledge and skills in the field of ICT are also important.

Use of ICT

The study showed that the teachers at schools A and N attribute the differences in digital literacy among students of the first three-year cycle to the use of personal computers, laptop computers, tablets and smartphones that are mostly used for playing games. A study in England (Barker, Franklin, & Meadows, 2000, p. 21) showed that the use of laptop, handheld and personal computers increases possibilities for improvement in digital literacy for the youngest. It also showed that the teachers at school B attribute differences in digital literacy among students of the first three-year cycle to modern education equipment. This fact is also stressed by Hesterman (2011, p. 357).

Parents' opinions at all three schools show that students use modern technology very differently. Parents at school N say that differences in digital literacy among students are obvious because some of them do not have access to laptop computers, tablets or smartphones at home. Children with access to computers in the early age of their development (Saçkes et al.,

2011, p. 1698) considerably minimizes lack of basic computer knowledge due to socio-economic family status or limited use of computers.

ICT in Curriculum

One of the aims of the study was to examine the teachers' view of didactic recommendations in curriculum. The purpose and aim of the study was to answer the study question: 'What is the teachers' view of didactic recommendations in curriculum?' Teachers associate these with knowledge and skills of students, with didactic recommendations in curriculum and with curriculum in general. The study showed that teachers at all three schools agree that incorporation of digital literacy into curriculum is ambiguous. They find most recommendations in the mathematics curriculum (Ministrstvo za izobraževanje, znanost in šport, 2011)

Knowledge and Skills

Teachers at school B observe that acquiring basic knowledge and skills in computer science can be incorporated into the existing curriculum. Recommendations for cross-curricular integration in annual classes reports are only written in the Mathematics Annual Report (Ministrstvo za izobraževanje, znanost in šport, 2011, p. 29). Teachers at school B believe that the number of classes for systematic digital literacy development can be increased by reducing the number of hours in other subjects, because the approach to incorporate ICT (Bhaumik, 2012, p. 250) into teaching is connected with the goals of individual subjects.

Didactic Recommendations

Teachers believe that didactic recommendations in existing curriculum are too poor and too general for teachers to incorporate digital literacy into classes. Kellner (2007, p. 15) adds that recommendations for digital literacy do not include common approaches to teaching, studying and grading of digital literacy. Therefore, incorporating ICT into curriculum (Elston, 2007, p. 1) requires teachers to consider the difference between teaching ICT skills and using ICT. Teachers at school N put particular stress on project-based educational planning in cross-curricular integration. Project-based educational planning (García-Valcárcel, Basilotta & López, 2014, p. 67) is one of the ways for students to acquire and expand their knowledge in cross-curricular integration.

Curriculum

Teachers propose a systematic incorporation of computer science into obligatory subject curriculum. Kilfoyle Remis (2015, p. 53) adds that teaching computer science has to begin in preschool education. Because of that,

computer science (Giavrimis, Giossi, & Papastamatis, 2011, p. 288) needs to be defined in curriculum and ICT has to be included in classes preparation. Teachers at schools B and N suggest vertical planning of digital literacy development until an appropriately and systematically remodeled curriculum becomes available. The study showed that school N already has a plan to put in place digital literacy development for the first three-year cycle students. Understanding and pursuance of targets in ICT (Vanderlinde & Braak, 2011, p. 132) is very demanding, that is why teachers have to be included in the planning of ICT incorporation into the curriculum. At the same time, teachers have to be included in the planning of ICT incorporation at school level.

Digital Literacy of Students

An aim of the study was to explore the attitude of different first three-year cycle participant groups (teachers, parents and students) towards ICT use in classes in the first three years of primary school. The purpose and aim of the study was to answer the study question: 'How do different first three-year cycle participants understand and interpret the use of ICT in classes?' The participants associate their observations with knowledge and skills that students acquire through the use of ICT, e-content and with safe Internet use.

Knowledge and Skills The study showed that teachers at schools A, B and N use desktop computers and interactive whiteboards in classes. Parents at school A believe that the use of ICT in classes is appropriate because students of the first three-year cycle acquire enough knowledge of ICT in classes. Parents at school B associate the use of ICT in classes with the use of interactive whiteboards, desktop computers and tablets. Apart from interactive whiteboards and desktop computers, teachers at school B also use laptop computers and tablets. During classes, a teacher can use ICT (Bhaumik, 2012, p. 247) for different purposes such as electronic presentations or accessing websites and other resources available on the Internet. It was discovered that teachers at schools B and N use computer classrooms to refresh teaching materials. Cardellino and Leiringer (2014, p. 850) warn that some teachers will follow the development of technology and adapt their teaching methods, while others will not.

The study showed that parents at school B consider computers as a teaching accessory, while parents at school N see computers as teaching accessories for students with learning difficulties. Parents at school N also identify computers as teaching accessories for study papers or projects. Writing these helps students learn about and understand computers mostly as means of acquiring knowledge and skills connected with computers, as

well as the Internet. Teachers and students of the first three-year cycle (Vanderlinde & Braak, 2011; Škrabar, 2010; Bhaumik, 2012; Voogt et al., 2011) use computers as didactic tools. Parents at schools A and B do not consider daily use of computers reasonable because students first have to acquire writing and reading skills, even though use of ICT (Barker et al., 2000, p. 20) plays an important role in developing these skills.

Students at schools included in the study use interactive whiteboards in classes. E-content for use with interactive whiteboards (Sambolić Beganović, 2011, p. 15) is very helpful for teachers to conduct classes. Students of all schools included in the study want to learn to type. Parker and Lazaros (2014, p. 25) add that typing is a very appropriate way to acquire the most basic computer knowledge and skills.

Safe Internet Use

The study showed that teachers at schools A, B and N incorporate safe Internet use in classes with the help of the Safe.si website. Parents at all schools included in the study warn that students need to be acquainted with safe Internet use and be protected from harmful content. The computer and the Internet are parts of a child's life (Elston, 2007), that is why it is very important to teach them about safe Internet use. Students at schools included in the study are aware of the dangers of the Internet. In planning the activities for the use of ICT (Selwyn et al. 2009, p. 930), a school can learn from children's experiences and needs to ensure students a safe and appropriate use of Internet content.

E-Content

The study showed that teachers at school A use the 'Lilibi' web portal, the 'Moja matematika' online workbook, 'Vedež' e-content for environment education, the Modrijan publishing house's interactive overlays, the safe.si, učiteljska.net and www.brezknjige.com websites in classes. Teachers at school B use e-content that enables a study approach to studying in classes. Teachers at school N still use old didactic computer programs (e.g. 'Polžkovi koraki,' 'Igrive številke,' 'Spoznavanje okolja'). For an innovative use of ICT in classes (Kivunja, 2014, p. 81) and for developing digital literacy of students, new forms and methods of teaching are important. Teachers have to be aware (Hicks & Turner, 2013, p. 59) that the use of ICT alone is not digital literacy and that is why they need to make changes in their teaching methods. Teachers at school A believe that old didactic computer programs that were incorporated into classes in the previous years have to be remodeled. Because computers in the computer classroom are not appropriate for the first three-year cycle, hardware also needs to be renewed. Cardellino and Leiringer (2014, p. 851) observe that working conditions for integration of ICT into classes vary greatly from school to school.

Teachers at school N think that at least four to five computers are necessary for refreshing teaching material in a classroom. Teachers can include ICT in classes (Hesterman, 2011, p. 357) if there is enough appropriate ICT available.

Parents at school N associate the use of computers in classes with e-content available on the 'Lilibi' web portal and the 'Moja matematika' online workbook. Students at schools A and N learn to use the interactive whiteboard with the help of learning accessories and the 'Lilibi' web portal. In this way, teachers use appropriate teaching strategies and didactic tools in teaching (Kivunja, 2014, p. 81).

Students at school B use computers and other e-content for doing interactive exercises on Lilibi web portal (<https://www.lilibi.si>), Wikipedia (<https://www.wikipedia.org>) and in the Dictionary of Standard Slovenian Language (*Slovar slovenskega knjižnega jezika*, 2015). Students at school A acquire computer and internet skills by doing exercises in the 'Moja matematika' online workbook. Students at school B learn how to turn on computers and how to use didactic programs, e-content and the Internet. Students (Hesterman, 2011, p. 350) can explore how computers work and use software appropriate for their stage of development. The study showed that students at school A want to learn with the help of desktop and laptop computers. Students at school N want to learn more didactic games in classes.

Role of the Teacher

An aim of the study was to identify the role of the teacher in integrating digital literacy into first three-year cycle classes. The purpose and aim of the study was to answer the study question: 'How much importance do the participants of the first three-year cycle attribute to the role of the teacher in digital literacy of students?' The study showed that the role of the teacher was interpreted differently by each study participant. Teachers associate their role in integrating digital literacy into classes with motivation, knowledge and skills of teachers, teacher education, colleague support and teaching ICT.

Teachers

Teachers' motivation (Vanderlinde & Braak, 2011, p. 125) for incorporating ICT into classes is one of the key components in developing digital literacy of students. Teachers at schools A, B and N require courses to acquire practical experience because they are aware of the constant changes in technology. Teachers require knowledge (Gill et al., 2015, p. 36) that will help them develop students' digital literacy. Teachers at school A warn that students do not have equal opportunities for integrating ICT into classes. Teachers at schools A and B stress that they need additional computer knowledge to successfully integrate ICT into classes. Teachers teaching first three-year

cycle students about digital literacy at schools B and N see themselves as guides to a safe and beneficial use of ICT. Teachers have to prepare themselves (Voogt et al., 2011, p. 3) for student-centered education.

Teachers at school B emphasize that they get support from teachers with knowledge and skills in digital literacy. Despite the support, teachers at schools B and N depend on their interest and resourcefulness in integrating ICT into classes. Because of that they require additional courses and computer teacher support. Computer teachers (Hesterman, 2011, p. 353) have a role in teaching ICT in classes, as well as in helping other teachers with the use of ICT in classes. The study showed that teachers at schools A, B and N believe their role in teaching ICT is very important. Teachers have to be aware (Hicks & Turner, 2013, p. 59) that the use of ICT alone is not digital literacy and that is why they need to make changes in their teaching methods.

Parents

The role of the teacher in developing digital literacy of students is also interpreted differently by parents. They associate it with a teacher's knowledge and skills, teaching ICT, cooperation, education and lifelong learning. Parents at schools A and B see the role of the teacher as very important in teaching the use of ICT and developing digital literacy of the first three-year cycle students. With their competency (UNESCO, 2016, p. 26), teachers can contribute to the improvement of curriculum and classes. Parents at school B believe teachers have to develop digital literacy of students in an appropriate way and educate themselves at the same time. Parents at schools A and B warn that digital literacy in modern society is connected with lifelong learning. Teachers need to think (Hicks & Turner, 2013, p. 59) about integrating students into digital literacy development that will help them in lifelong learning.

Students

Students associate the role of the teacher with lifelong learning. Students at schools A, B and N see the role of the teacher in developing digital literacy as very important. Students believe the way a teacher teaches is very important because they teach them about life. The use of ICT in classes (Brečko & Vehovar, 2008, p. 20) helps students develop skills needed for living.

Conclusion

The study provides an in-depth understanding of incorporating digital literacy into primary school education for the first three-year cycle participants (teachers, parents and students). The study was based on a sample of

three primary schools, therefore the results can neither be generalized to all Slovenian primary schools, nor was this the intention. Study findings provide an insight into the field of digital literacy from three different points of view (teacher's, parent's and student's) and are also interesting to other primary schools, particularly as a consideration of the teaching methods.

The study showed that students of the first three-year cycle have different experiences in using computers. Teachers attribute the differences in digital literacy of the first three-year cycle students to the use of ICT, as well as to the students' knowledge and skills for ICT use. Parents warn about the differences in digital literacy of students in the first three-year cycle. They attribute this to the varying use of ICT due to unequal opportunities to use modern technology at home. The students included in the study use computers for playing games, watching video content or photographs and also for learning. Students want to learn typing skills. The participants included in the study (teachers, parents and students) see the use of ICT in the first three-year cycle classes as a means of acquiring computer and Internet knowledge and skills. This is made possible by the use of various ICT, safe Internet and e-content. All three schools integrate safe Internet use into classes. Parents also stress that teachers need to give a lot of attention to safe Internet use when using ICT, while students are aware of the dangers of the Internet.

In obligatory subjects' curriculum, ICT is included as a didactic recommendation in the first three-year cycle of the Slovenian primary schools. Didactic recommendations in existing curriculum are too poor and too general for first-cycle teachers to integrate digital literacy into classes. Teachers propose that schools create a vertical plan of digital literacy development, while considering differences in the use of ICT and learning ICT skills. All teachers strive for a systematic curricular reform of obligatory subjects, which would have to thoroughly define the field of computer science. The role of the teacher in the integration of ICT in teaching is one of the key factors in the revised curriculum of the Slovenian primary schools, where the integration of ICT is very vaguely defined. The participants included in the study attach great importance to the role of the teacher in developing digital literacy of students. They associate the role of the teacher with a teacher's motivation, knowledge and skills, teacher education, teaching ICT, colleague support and lifelong learning. Teachers at all schools included in the study are aware that they need motivation, as well as computer knowledge and skills to successfully integrate ICT into classes. Teachers warn about the lack of courses for acquiring knowledge and skills needed to develop students' digital literacy. Students associate the role of the teacher in developing digital literacy with lifelong learning, that is why the system of

education and schooling needs to be reformed and oriented towards lifelong learning.

Our contribution to the theory and practice in the field of ICT use in education (which belongs to the field of business data processing) include recommendations for a different role of ICT in curriculum. The study findings suggest that digital literacy should be defined by target and content with the guidelines for digital literacy activities and standards for the first three-year students within the existing curriculum. In this way, teachers could more easily plan and incorporate digital literacy development of students in classes. The study findings present a strong message for policy makers. We suggest that policy makers plan additional resources needed to equip classrooms with ICT to enable teachers to include digital literacy in classes. We also believe that principals should be made aware of the importance of digital literacy vertical planning in schools. At the same time, principals need to provide teachers with additional resources, practical courses and computer teacher support in order to enable ICT integration into classes.

The lives of all today's students are strongly influenced by computers. Many of these students will work in areas related to computing. Many jobs that today's students will have are not yet accurately defined, which means that computer knowledge will become increasingly important in every profession of a modern society (Computer Science Teachers Association, 2011, pp. 2–3). An essential skill for acquiring occupations in the 21st century is the ability to critically reflect and solve problems using modern technology (Kivunja, 2014, p. 81). If schools want to take advantage of ICT in the best way (Voogt et al., 2011, p. 3), they need to make good preparations for changes. Teachers need to prepare for student-centered teaching. The skills of the 21st century (Williamson, 2011, p. 3) needed for a life in a digital society are written in the 'enGauge' document. Literacy in the digital age requires individuals to be familiar with the operation of computers, to create and use video content, and to critically analyze information from various media to use it effectively. The K-12 Computer Science Framework (Computer Science Teachers Association, 2011, p. 2) includes an in-depth understanding of computing and meets the requirements for the ever-increasing need for jobs where computer skills are expected. Basic understanding of computer science enables students to become educated and creative designers of technology, which will ensure quality of life in a digital society.

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