

## **Playful Learning in Children's Library: New Technologies for Digital Natives**

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**Abstract:** Emphasizing the necessity of using innovative methods of work in order to preserve the ties between libraries and new generation users, to improve the quality of library services, to encourage children to read, as well as to modernize the learning process, we will present models of use of information technologies in workshops for children and youth within the Children's Department of Belgrade City Library. Presenting the examples of good practice, we will show the models of intelligent implementation of elements of computer games within the educational process and their use for encouraging children's imagination, creativity and learning. Teachers, professors, pedagogues, psychologists and librarians will be offered solutions on how to, using information technologies and gamification elements, help students master the school curriculum more easily and extend their knowledge.

**Keywords:** playful learning, library for children and youth, information technologies, computer programs, reading and learning

### **1. Introduction**

We are the witnesses of numerous and turbulent changes brought about by information revolution, taking out almost all areas of life. In terms of reading, an illustrative description of the situation we may find in the words of the contemporary Serbian children's author, Dejan Aleksić, who said during one of his interviews, that the reading today had become an almost anachronic activity. The tempo is accelerating, whereas the reading requires peace, tranquility and a lot of time.

The impact of information revolution on reading, education and culture has absorbed the attention of scholars and practitioners around the world, having been the subject of numerous discussions. Participants of those discussions can be divided into digital optimists and digital sceptics (Vučković & Stokić, 2011). While sceptics emphasize that the information era introduces speed and superficiality, and the disappearance of in-depth reading and understanding, electronic enthusiasts on the other hand, point out the advantages of new technologies, convinced that the digital literacy is a new chance for humanity,

and that the young generation has no emotional difficulties in accepting the new media (Vučković & Stokić, 2011).

One thing is certain: new technologies dramatically change the learning process and the nature of childhood itself. Children are growing up in front of screens, and there is almost no question raised as to whether electronic devices should be used, it is rather their overuse that is an issue. Due to the time children overspend in front of a computer, most often for entertainment purposes, it is difficult to grasp the creative and educational potential of information and communication technologies offered to the child.

## **2. “Digital“ librarians for digital natives**

Sharing the belief of digital optimists, “digital“ librarians of the new age are aware of the exceptional possibilities of information technologies in the educational process and in making the digital generation information literate. They are curious and aspire to find innovative ways to apply the ICT in working with children and young people, in order to stimulate their development, develop the media culture of children and improve the quality of educational process. Characteristics and possibilities of information technologies can significantly affect the pedagogical-educational process itself and improve its quality to a great extent. Development of the new technologies is an accelerated process, therefore it is nearly impossible to predict each and every way it would become a component part of the educational process at all educational levels (Anđelković, 2008).

Starting from the assumption that computers are the omnipresent part of the child’s visual field and that in the next period they may occupy even more space of that field, the librarians working with children must keep pace with the new technologies so as to be able to relate to clients they are serving. If the digital media are to be perceived as allies, their use could turn out to be of essential importance for modern and innovative promotion of reading. To understand media worlds of children and young and to integrate them as a learning concept is not a simple task, but it is certainly a challenging and wide field needed to be explored.

## **3. A “Mouse“ In The House**

New technologies have also taken a significant place in children’s games. Today props intended for games and playgrounds have been extensively substituted by computer games. We may say that this occurrence has a global character. Positive and negative consequences of playing the computer games and the use of computers by children are subject to numerous surveys. There are interesting pieces of research reexamining parental expectations and concerns, and one of them was conducted in Serbia among parents of children between seven and seventeen years of age. The findings have shown that nearly half the parents had negative attitudes towards the use of computers by children. It can be justifiably supposed that a number of parents formed their attitudes based on the experience with their children regarding the way they used computers, which is in accordance with the data that children rather rarely

use computers for doing their homework assignments. Only 19 percent of parents had positive attitude towards the use of computer by children. English language learning, development of concentration and speed of perception in children, stronger curiosity and development of social skills had been recorded as positive consequences of using computers. Negative consequences are considered as diverting children from school assignments, encouraging aggressive behavior, immediate danger to physical health including concerns that the children growing up with the computer might forget the basic skills such as calculus, writing etc. (Žiropađa, 2007).

A child can use the computer in order to learn something, to prepare for professional activities or to entertain himself/herself (Rečicki & Girtner, 2002). Reality however still shows that the children and young most often spend their computer time by playing games. Due to their attractiveness, interactive nature, sensory stimulation and ability to display almost real images, the computer games represent one of the main forms of entertainment for a modern child. Research based on the sample of 1111 children from 7 to 14 years of age, aimed at gaining a better understanding of how the children used video and computer games and how they integrated these new media into their leisure activities and peer groups, had shown that more than half of the boys and about 29 percent of the girls reported that they played regularly, about 40 percent of the boys and half of the girls said they played occasionally, and only 2.2 percent of the sample had never played any video or computer game (Fromme, 2003). The research findings clash with the expectations of parents whose motivation for buying a PC is most often of educational nature (Rečicki & Girtner, 2003).

Exhaustive and a very illustrative explanation as to why computer games almost magically attract the children was provided by Marc Prensky. He lists 12 reasons why he believes that computer and video games are potentially the most engaging pastime in the history of mankind, some of them being the following: „Games are a form of fun. That gives us enjoyment and pleasure. Games are form of play. That gives us intense and passionate. Games have rules. That gives us structure. Games have goals. That gives us motivation. Games are interactive. That gives us doing Games have outcomes and feedback. That gives us learning. Games have problem solving. That sparks our creativity” (2001).

#### **4. Information-communication profile of Serbia**

Stanišić (2012) considers that “information-communication technologies have extensively changed the entire nature of publication, transmission and the use of information. Thanks to a general, very cost-effective, and most often almost free access to information and the availability of knowledge, the status of schools, the role of teachers and the educational system have also been significantly changed. Developed and less developed countries have a need for accelerated innovation and reform of the educational system, attempting to bring it in line with the elusive and unpredictable technological development”.

It is certain that there is an aspiration at the global level to have the ICT integrated into educational system as much as possible. At the individual level, there are huge differences between the information profiles of individual countries, thus also in terms of implementation of the new technologies in education.

In terms of information profile image of Serbia, one may judge it based on the research conducted by the Statistical Office of the Republic of Serbia in 2015. The data show that out of total number of households in the Republic of Serbia, 64,4% own the computer, 63,8% of households have internet connection, showing therefore notably increasing trend when compared against previous years. Research findings show that 100% of companies on the territory of the Republic of Serbia use computers in their business dealings (SORS, 2015).

Strategy for Education Development in Serbia 2020 recognizes the significance and the role of new technologies in improving the educational system (Ministry of Education of RS, 2012). In order to more successfully integrate technologies in the educational system, the National Education Council of the Republic of Serbia initiated the development of Guidelines for Advancing the Integration of ICT in Education (2013). For the purpose of developing the Guidelines, an extensive research had been conducted about the use of ICT in Serbian schools, which provided an in-depth overview of the current situation in this area. Obtained data, among other things, showed that although computers had been present and available in schools, the basic level of equipment was still not satisfactory, since the equipment in schools varied depending on the profile and size of schools, level of economic development of municipality in which they are found, their participation in the development projects, readiness of school employees and parents to invest in the equipment etc. Such situation hinders a harmonized application of the ICT in the teaching process. Due to unfavorable economic circumstances, a planned approach to procurement of equipment, programs and digital materials is lacking in most schools. In most cases, computers are concentrated in the digital and informatic classrooms, and it very often happens that the teachers cannot synchronize the planned teaching module with the time availability of the digital classroom. The level of application of the ICT, to be most specific, is discretionary on the whole, and surrendered to individual enthusiasm. Most teachers are aware that it is inconceivable to have a modern education without active and daily application of the ICT. However, one can say that the application of the ICT is much more evident in the preparation for teaching classes than in implementation of the teaching process itself. There is a rather evident insufficient knowledge of methods by which it is possible to adequately use the ICT in teaching individual subjects (SPIRU, 2013). In the most number of cases, not even the school library itself is capable of meeting the demands of modern teaching process and interests of students or teachers. The role of libraries in schools continues to be traditional and relates to book distribution, and there is still a very long road ahead until they are fully transformed into multimedia information centers. Library fund is outdated, there are only few video and audio materials and electronic publications, and thus

there is no contribution to a more interesting or a more efficient teaching (Stanišić, 2012).

Implications of the mentioned research for the practice of Serbian public libraries, particularly for departments of literature for children and young people imply the necessity to upgrade the services that would develop skills and routine in the use of computers by young people as vehicles to learn, search, find and efficiently use information resources, thus raising the awareness of essential significance of these skills in the global information society.

### **5. ICT in the classroom: what are students' expectations?**

When it comes to students, in then overall amount of time they spend using the ICT, the time share used for learning is very small. ICT competencies they acquire independently, at home, or by learning from their peers. Social networks are the most frequent form of computer usage during leisure time. Speaking in the favor of the aforementioned, there was a research in tracking the use of new media conducted to study the habitual use of new media by the digital generation in Serbia. Young people mostly identify internet with the social networks, and the use of computers they identify with the internet, except in the case of games. They spend 2 to 5 hours on average on the internet mainly visiting YouTube and Facebook and browsing through entertainment websites. Google is an answer and solution for everything they would like to know, they find learning materials for the primary and secondary school, the digested versions of their reading assignments, complete essays and interpretations of literary works. They open their e-mail accounts almost exclusively in order to create a Facebook account, whereas only those over 18 years of age use the electronic mail for communication with teachers, transmission of information and job applications (Ipsos MediaCT, 2012).

Whether or not students wish to use more ICT in the school education, and what are their expectations was shown by the research carried out during the 2013/2014 school year, conducted among seventh and eighth grade primary and high school students related to the computer use, the use of Internet and social networks, and their expectations referring to the ICT in teaching. Findings have shown that most of the students have a positive attitude towards using the ICT and that a visual learning style is dominant for the majority. They often think "in images" and learn best when the content is illustrated and presented via demonstrative methods and techniques. Students expect learning material to be enriched with multimedia, digital presentations and illustrations and other graphics that improve learning. They also expect computer technology and software to enrich the teaching and working environment where a student would "feel like he is playing" (Glušac et al. 2015).

### **6. Digital playful learning in the Children's Library**

In the period of consolidation and catching up with new technologies in the area of pedagogical-educational work in educational and cultural institutions, the individual initiatives, programs and projects can be extremely valuable at the systemic level.

Departments of children's literature in public libraries play a significant role of the extended hand of educational system. In that sense, libraries are faced with a wide open field of action in finding the adequate methods and approaches to using the ICT in order to make the acquisition of teaching contents by students as interesting, accessible and as valuable as possible.

In the Children's Department of the Belgrade City Library, in cooperation with the pre-school, primary and secondary school teachers, pedagogues and school librarians, we organize numerous innovative, free-of-charge, educational and creative workshops and programs, in order to preserve the ties between libraries and the new generation users, to improve the quality of library services, to encourage children to read, as well as to modernize the learning process.

Since the computer games represent the dominant form of entertainment for students, we have organized workshops in which the computer games were those that were used for making the learning easier and more interesting. At workshops implemented in the Children's Department of the Belgrade City Library, we combined these seemingly incompatible and conflicting categories. Aware of the fact that the development of information culture and understanding of technological innovations provide the children and young with a possibility to express themselves through the new media, we selected those that offered the highest level of interactivity.

Vilotijević (2008) considers that "programs implemented by using the computers should be formed so as to encourage students to construct knowledge, not only to receive information, and didactically shaped facts should be presented so as to contribute to cognitive organization of knowledge, thus focusing the learning process. Students should be able to think and explore, where well applied computer technology can be very helpful".

In that sense, there was a very inspirational seminar organized for the children's department librarians of public and school libraries by the Libraries of Goethe Institute in Belgrade in 2012 under the title of „Creative Gaming: Playful Reading Education”, aimed at changing the reputation of computer games and finding the ways to utilize their educational and cultural potential. The backbone argument of the seminar was that in a certain sense, the elements of computer games and photography, sequences and characters, combined with imagination, creativity, original ideas, and assisted by technology, turn into entirely new and specific product, or a starting point for a new creative process and production of the new media. Seminar findings helped to devise workshops for children and young people where the educational and the user-friendly computer software PowerPoint, Comic Life and Inklewriter were used in a new way in combination with the elements of computer games.

Widely popular user program for creating multimedia presentations, the PowerPoint, we combined with the elements of computer games to create interactive stories, knowledge quizzes and lessons study. Participants of the workshops, who created interactive stories, selected the pictures of their favorite characters, subjects, sequences, environments, which they consequently integrated, along with the adequate text from the folk literature, into the PowerPoint program, thus creating new versions of the story with diversified

plots and endings, adaptations and contemporary interpretations of the folk stories. Especially significant was the hyperlink option, which represented a navigational element for moving from one slide to another, regardless of their presentation order, thus creating an interaction within the story.

The essential attribute of the hyperlink, to inter-connect the presentation elements as you wish with the additional textual, audio or video information in the presentation itself or on the web, is used as an appropriate option for the lesson study, and the combination of PowerPoint and computer games programs is utilized as an adequate platform for studying history, all of which students are able to illustrate with scenes from their favorite strategic games. In the hypermedia system, the information enable students to use data more creatively, the knowledge environment is adjusted to the individual and the learning is individualized, and students are able to access knowledge databases in the order convenient for them, while they create links via association (Vilotijević, 2008).

As the favorite competing game and a tried instrument for knowledge testing, assisted by the hyperlink tool, quizzes were created in the PowerPoint. Correct answers generate points and take the contestant to the next slide or the next game level, whereas wrong answers bring the contestant back to specific lesson segments, with the idea to repeat the lesson.

In the workshops described, children created new creative products, learned through play by devising their own rules, acquired skills to turn the existing contents into their own, constructed new approaches to computer games and were made aware of their creative potential.

Students of primary school age especially showed interest in taking part in the project in which they used their favorite characters from computer games to make comic books with the assistance of the computer program Comic Life. This user-friendly program is very simple to use, it is visually attractive, and offers extremely wide range of educational possibilities. The list of possible options for using the Comic Life software for educational purposes is long, but to start, it is sufficient to say that this program is perfect for writing dialogues, convenient for the presentation of key information, it engages users through thinking, creating and writing, stimulates creativity and the higher-order thinking (PLASQ, 2016). Students were very motivated to participate in the workshops in which they first invented and wrote stories, and then they linked them to their favorite characters from computer games. By using the offered templates and cloud callouts for the text, they created their own comic books in which the computer heroes, assisted by the children's imagination and creativity, were becoming main characters of children stories. Going a step further, we taught the students how to present their favorite literary works to others, retelling them in few sentences and creating, with the assistance of elements of computer games, a brief comic book recommendation to read. When exploring the world of computer games, we the librarians also searched for interesting sequences and characters and with a help of the mentioned program, placed them in the comic book, made recommendations for reading and published them on our Facebook page. It was then that the compulsory part

of the library work became much more interesting, and the recommendations themselves more illustrative and efficient.

Creative writing workshops have always been very popular in the libraries. Free-of-charge, online computer program of a great creative potential, which can perfectly modernize and support these workshops is Inklewriter (INKLE, 2016). This application enables users to create stories with several plots and endings, such as the story of "Choose Your Own Adventure", to store them, publish and share them, and they can also be converted into the format supported by Kindle reader. As to where the story will branch out, and how the plots will intertwine, depends solely on the imagination and inspiration of the program users themselves. Elements of computer games can be skillfully used for the story illustration in this program.

In the abundance of modern teaching tools that stimulate the audio-visual perception of children and implement the didactic principle of visibility, the main role is certainly played by the digital movies. Use of movies in teaching is not a novelty, but the novelty is the availability of computer software that enables a wide range of people to make digital movies simply and free of charge. One of such programs is the Windows Movie Maker. Motivated by the fact that digital movies are very inspirational and relevant educational resource in today's world, and that it is possible to make them free of charge, we launched the project in the Children's Department of the Belgrade City Library, where librarians together with children, pre-school teachers, teachers and parents, made short digital movies. Based on the short folk tale or a poem, we made props, photographed them, and then we processed the photos taken in the Gimp program, recorded the sound in the Audacity program, and finally edited the film in the Windows Movie Maker program. Newly made movies children can watch independently at home, parents can use them as the visual platform for a joint reading with children, and librarians, pre-school teachers and teachers can use them in workshops and teaching as the product around which they will organize other activities.

## **7. Conclusions**

Due to the time children overspend in front of a computer, most often for entertainment purposes, the focus of interest of many pedagogues, and librarians as well, who work with children and the young people, is to uncover the creative and educational potential offered by information technologies, find innovative approaches in using new technologies in pedagogic work, and motivate students to use digital technologies for educational purposes to a higher extent.

Projects of the Children's Department of the Belgrade City Library where computer games were used to facilitate learning and make it more interesting, emerged as a result of the proactive role that the library takes in order to face social challenges, the aspiration of the library to represent a tight link between the young users and the knowledge, the driving force of positive interaction between children and the new technologies, and of becoming the leader in developing new formats to utilize the advantages of technological innovations.

The positive effects of implemented projects show that it is more than necessary to empower young generations to use creative and educational potential offered by the information technologies. To find the way to intertwine pedagogical methods with the new technologies must be imperative if we wish our future generations to be smarter than smart devices.

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