Adolescents' informal computer usage and their expectations of ICT in teaching — Case study: Serbia

Dragana Glušac[*], Vesna Makitan, Dijana Karuović, Dragica Radosav, Dušanka Milanov

University of Novi Sad, Technical Faculty "Mihajlo Pupin", Djure Djakovića bb, 23000 Zrenjanin, Serbia

ABSTRACT

This paper presents research with the basic goal of establishing the structure of informal computer use among adolescents in the Republic of Serbia, and of verifying the existence of a statistically significant correlation between this and their expectations regarding the implementation of ICT in the teaching process. This research was conducted by examining the opinions of 14—18 year-old adolescents regarding their computer use, Internet and social networks, and their expectations related to ICT in teaching. The results were obtained from 318 questionnaires consisting of 32 questions distributed among a representative, focused sample of adolescents: seventh and eighth grade primary, grammar and high school pupils in the Republic of Serbia. The research was carried out during the 2013/2014 school year. Data processing included a descriptive and correlative analysis which showed that Serbian adolescents are very active when it comes to informal computer use, and that there is a statistically significant correlation between the dimensions of computer use among adolescents and their expectations regarding ICT in teaching. The obtained results provide a foundation for the prediction of educational strategies regarding mandatory ICT integration in teaching courses, and the implementation of ICT in realizing teaching content.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction and motivation

The primary motivation for this research proceeded from the fact that the Republic of Serbia has been going through a transition phase for the last two decades as has the entire educational system, together with the observation that Serbian adolescents have mostly accepted modern information communication technology (ICT) in their everyday lives. Furthermore, as a generation growing up in a period of transition, adolescents are the carriers of the changed values system and they therefore have different relations with each other and education.

ICT is most present in their lives outside of school, through its informal use (Demirbilek & Mutlu, 2010). Strong ICT habits are being created gradually, alongside lifestyle changes, altered modes of behavior, thinking, and expectations from the environment in which they live and the educational system where they spend much of their time, and which is seen as a factor affecting their futures. There is a widely-held belief that a connection exists between behavioral choices among adolescents and future outcomes, particularly in terms of their educational and occupational achievements (King, Meehan, Trim, & Chassin, 2006; Troutman & Dufur, 2007). Use of ICT seems to be an everyday socio-cultural phenomenon for adolescents (Watten, Kleiven, Fostervold, Fauske, & Volden, 2008).

On the other hand, many research studies have indicated the fast ascending frequency and intensity of computer usage in young people. According to the Statistical Office of the Republic of Serbia in 2013, from a sample of 2400 households in the Republic of Serbia, 75.5% have computers in their own possession. The number of internet connections increased from 18.5% in 2006 to 55.8% in 2013. Despite the fact that this is the bottom of the European scale, those data indicate great progress. Also, 84% of the examinees declared that they use a computer every day, with the population aged between 16 and 24 being the most intensive users, at about 96%. A total of 66.5% of the examinees also said they used the internet for educational purposes.

---

* Corresponding author. Tel.: +381 (0) 62 801 9712; fax: +381 (0) 23 550 520.
E-mail addresses: glusacdragana.zr@gmail.com (D. Glušac), vesna@tfzr.uns.ac.rs (V. Makitan), aruena@tfzr.uns.ac.rs (D. Karuović), radosav@tfzr.uns.ac.rs (D. Radosav), dusanka.milanov@gmail.com (D. Milanov).

Those results show that in the last 7 years in the Republic of Serbia the internet has cut out a clear path and its implementation and exploitation have received a wide response among the population, especially the young. Similar research studies in the world show the same trends, thus making it useful to consider them at micro levels. For today's adolescents the computer is an everyday thing in terms of both its private and professional aspects. Society's traditional adolescent issues of intimacy, sexuality, and identity have all been transferred to and transformed by the electronic era (Subrahmanyam & Lin, 2007). Therefore, the assumption about the digital paradigm implementation in teaching processes is inevitable, because life with computers is an unthinkable way of living for today's youngsters.

The technological development of human civilization indicates the need for changes in educational concepts as well. Information and Communication Technology is creating a new trend in the teaching methodology of education (Karthikeyan, 2013). New standards and technologies have been accepted worldwide in the education area, and they have significantly improved previous concepts and educational models (Lam, McNaught, & Lee, 2014; Zhang, 2014). At this technological moment we are witnesses to the rapid modernization process of educational technology, which brings strong individualization and exploration components to teaching. The possibilities of technology and new media are another new segment that requires exploring and will become an interesting subject in children's research (Rogulj, 2014).

Most countries, including Serbia, have adopted strategies for education which define the crucial directions of development in this area, and have defined standards and course competencies through government decisions. However, in terms of ICT use, schools are autonomous and are accountable for organizing the teaching and learning processes (Tondeur, Van Braak, & Valcke, 2007). Thus, the situation arises where the models, levels, methodologies and success of ICT use in teaching worldwide are different, even within the educational system of one country, and even between different teachers within the same school. It is necessary to set up a guidance framework for e-learning courses in higher education for the training of future teacher to apply this knowledge in practice.

This paper researches adolescents' problems related to the structure of ICT use which influence their expectations of the application of new technologies in the education process. The concrete research question is whether pupils' modern way of living in the ICT environment, together with the popularity of the internet and social networks (SNSs) and computer presence in adolescents' everyday lives in general influence their expectations of ICT implementation in the teaching process. That is the main question of this research.

The wider problem noted in this discussion is also the adjustment of the education system (the structure of ICT use and adolescents' expectations from all educational technologies) to the goal of enhancing the effects of the education process. In order to answer such a question, the first part of the study, theoretical background, encompasses a discussion based on literature relevant to the design of research studies, the evaluation of the quality of the evidence obtained therein, and the possible utility of the conclusions. In the theoretical debate, we focus on three major challenges in the literature: expectations in the adolescent period, ICT and adolescents and ICT use in teaching.

The second part of the paper describes the research that was conducted by examining the opinions of 14–18 year old adolescents about their usage of computers, the internet, and social networks and their expectations related to ICT in teaching. Descriptive analysis will then be presented in order to show whether Serbian adolescents are active in informal computer usage, and what the structure of their informal computer use is. The conclusion about the existence of a statistically significant correlation between the dimensions of computer usage by adolescents and their expectations of ICT in teaching will be shown by means of correlation methods.

This conclusion is significant because it indicates the level of necessity for the implementation of e-learning methods in the teaching process with the goal of increasing educational achievement. It shows whether the motivation for class work enriched by electronic study platforms exists. The academic contribution of the research should enable the prediction of efficient educational strategies in the area of mandatory ICT integration into the teaching methods of all subjects which seeks to contribute to the development of the education system and thus the community itself.

2. Theoretical background

2.1. Adolescents' expectations

Adolescence is a period of exploration, when planning for the future emerges as an important developmental task (Erikson, 1968 cited in Beal & Crockett, 2010). It may be defined as the period in life when most of a person's biological, cognitive, psychological, and social characteristics are changing in an interrelated manner from what is considered child-like to what is considered adult-like (Lerner, Boyd, & Du, 1998). As adolescents make the transition into adulthood, they become more focused on their desires and aspirations for the future, and show increased selectivity in goal-directed behavior (Cantor, 1990 cited in Beal & Crockett, 2010). In the period of adolescence, childhood, shaped by parental wishes and ambitions, is left behind, and as adolescents gain experience, they develop more self-knowledge, which should lead to further refinements in their aspirations and expectations (Eccles, Barber, Stone, & Hunt, 2003). They create their own world of desires and plans. The ways in which adolescents perceive themselves and their world are very important because the concepts which adolescents form of themselves and of the world in relation to themselves exert a strong influence on their behavior (Strang, 1957).

According to Vranjesević, Trikić, Koruga, Vidović, and Dejanović (2003), adolescents' expectations are the same as those of adults, and they are: maturity, seriousness, responsibility, contemplating the future, planning, increasing life experience, and more commitments and worries. They particularly point out the dimension of the future and their proactive attitude to that, emphasizing the importance of that change, thinking about the future, having plans for the future and not living in the present moment only, like before. They change their personal opinions of themselves. The term adolescent egocentricity, i.e. personal belief in one's self-importance, advantage among others, etc. is well known.

According to the research carried out into the new values of Serbian adolescents in 2012, tendencies are moving not only towards the individual affirmation of every person, but also the total affirmation of individualism (Petrović & Zotović, 2012). The results of this study showed that self-actualization and hedonistic utilitarian values enjoy the greatest popularity among youngsters, which indicates that young people are showing an increasing tendency towards 'narcissistic culture'. Their own opinion is very important to them and they use it as a starting point in their evaluation of the world around themselves. On the other hand, school also plays a big part in the formation of the values system of youngsters. This raises the question as to whether these influences, regardless of whether they are spontaneous, uncontrolled or carefully planned, are part of the official or hidden curricula at the strategic level of education.