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Advantages and Disadvantages of Using Information Technology in Learning Process of Students

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ABSTRACT

This study examines the advantages and disadvantages of using leading information technology to teach primary and lower secondary school students. The study sample consisted of 50 students between the ages of 11 and 14. The questionnaire included four types of scientific research questions, consisting of discovery, descriptive, explanatory, and evaluation questions. This study belongs to the methodology of quantitative research, where the measuring instrument is the questionnaire. The research revealed that students use information technology effectively Over 80% of students use the Internet and benefit from its many advantages, especially in getting new information and communicating with people. On the other hand, information technology hurts concentration in class and consumes a significant amount of time.

Keywords: Educational technology, information technology, learning of students, quantitative research.

INTRODUCTION

Technology enriches educational experiences by providing limitless learning options that can guide students on their quests to learn. Information technology (IT) use has expanded beyond matters related only to hardware and software. Just recently have the implications of the use of IT in major educational areas such as curriculum content, learner activities, teacher role, and assessment practices (Voogt, 2008). The productive integration of information technology communication into teaching and learning involves not only surfing the internet but also making knowledge more practical for all students.

Education should be adapted to ongoing changes in technology and use them extensively in the learning process. These changes in education must rapidly respond to domestic developments in terms of quantity and quality of transmitting knowledge and skills systematically, coherently and stably to students. In this era of information and communication technology development, the use of this technology in the learning process

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has become a necessity for students. This development is directly related to the updating of knowledge and new skills in the field of teacher education. Technology has the power and the potential to transform the professional environment of the students into learning facilitators.

Technology creates opportunities for students to learn and collaborate with one another through the exchange of ideas and experiences and joint problem solving.

When preparing for lessons that use information technology, teachers should make focused plans and in select materials that respect the basic principles of teaching. The teachers have to know about various software in what settings they can be used and how they shall organize the work, also what goals they can serve. They need to have computer literacy to manage to create, and thus organize good learning situations that help pupils in these settings (Postholm, 2007).

Different applications of information technology offer great benefits for students by bringing excitement to students and creating progress in relief and independence in their development. The proper use of information technology promotes and develops a variety of skills in students, such as mathematical skills, communication skills, critical thinking skills, problem solving, teamwork, and research skills (Reinhold et al., 2020). The benefit to students increasingly will depend on the skill with which teachers are able to use these tools. Given that these skills are unlikely to be used unless they fit with teachers' existing pedagogical beliefs, it is necessary that we increase our understanding of teachers' beliefs as part of our efforts to increase teachers' computer technology skills and uses. This will not only enable teachers to use computers to their full potential but will enable students to reach theirs as well (Gilakjani, 2012).

According to Borysiuk (2013) in his article "Benefits and disadvantages of the use of information technologies in education", the benefits of using the information technologies are: 1) increased interest in and overall motivation for education; 2) individualization of education; 3) objectivity of control; 4) activation of education through the use of attractive and rapidly changing forms of information presentation; 5) formation abilities and skills for the creative activities; 6) training of information culture; 7) mastering the skills of operational decision-making in a complex situation; 8) students' access to databases of information that enable them to quickly obtain information; 9) intensification of self-student work; 10) increase in the volume of completed tasks; 11) increased motivation and cognitive activity due to the diversity of exercises, including the possibility of game time; 12) enhanced of information flow; 13) online education offer new opportunities for more active involvement of students in the educational process. Also, in his article Borysiuk (2013) states that the advantages of using information technology are: 1) it creates a more interactive experience; 2) it provides unlimited resources; 3) it helps build necessary skills for the future; 4) it saves precious resources; 5) it instantly updates information; and 6) it does not take up much space (Borysiuk, 2013).

Galle says information technology offers other educational advantages such as: 1) increased credibility for the teacher, 2) instant access to numerous resources, 3) the automation of dull material, 4) the creation of a collaborative learning approach, 5) teaching core vocational skills with more ease, 6) the modernization of classrooms, 7) the centralization of needed data, 8) enabling students to work at their own pace, 9) the opportunity to learn in different ways, 10) increased motivation of them, 11) and affordability (Galle, 2018).

On the other hand, information technology may present problems for the preparation and delivery of classes. It can be a distraction, provide inappropriate access, and offer false information, make cheating easier, be expensive to maintain, and hinder basic skills (Borysiuk, 2013).

Information technology can also be difficult to integrate into lesson structures. For example, class schedules may not provide sufficient time for Internet use during lessons. Also, teachers could become overly focused on creating visually attractive illustrative methods rather than lesson plans. Education on the basis of computer programs should not replace direct communication between teachers and students (Borysiuk, 2013).

Regarding the disadvantages of information technology in education, Galle states that: 1) it may be distracting to students, 2) it may disconnect students from face-to-face relationships, 3) it may make cheating easier, 4) it may disadvantage certain students, 5) it may cause students to use unreliable resources for learning, 6) it may make curriculum planning more difficult or expensive, 7) it may replace the teacher, 8) it may create privacy issues, 9) it may create medical issues, 10) it may cause children to lose track of time, 11) it is often limited, and 12) it may create dependence (Galle, 2018).

A worrying problem is that information technology by students is often misused by students who spend hours on the computer and use it for pointless things such as Facebook and various games. These children lack concrete guidelines to steer them into beneficial use. Family plays a major role in controlling the children while using the computer. Also teachers play a very important role with their instructions which can stimulate students to use for educational needs.

Psychologists Basov and Abram, as cited in Mexhuani (2014) shown that “children who play more games tend more to exaggerate the amount of violence in the world that surrounds them than those who play less” (Mexhuani, 2014). In addition, it was found that those children who play more games, tended more than those who played less, to accept the fear "when students tend to accept the fear of a bad person breaking into their homes ", or "when a random bad person could harm them ". Those who see a lot of movies and other programs that show criminal violence see their city as a dangerous place (Mexhuani, 2014). In the classroom, many teachers are turning to digital media to strengthen students’ basic skills. Using video and audio technology brings course materials to life in a way that stimulates young minds and facilitates learning. One reason for this improvement is that digital media tools can be used to address each student’s individual learning style, thereby empowering students to achieve their potential (Apple, 2002).

The success of innovative practices of technology use in schools is strongly related to the particular characteristics of each school. Infrastructure, equipment, a favorable school culture and the support from staff make the development of innovative practices with ICT easier (Sangrà & González-Sanmamed, 2010). Once students become familiar with technology, they quickly learn to use it proficiently. This opens up an exciting new world of learning possibilities for them, and their potential for achievement skyrockets. Students gain new skills and become familiar with new technologies that will help prepare them for future success in an increasingly technological world. Information technologies provide the opportunities of global interactions. Students can learn from interactions with the information, interface, teachers and co-learners using global networks (Hussain & Safdar, 2008, Shadiev et al., 2018).

Research Problem

General research problem is that:

How much do students use information technology and what are the disadvantages and disadvantages of its use by students?

Sub-problems of research are followed by the questions as below:

1. How many children use information technology during the day?
2. How do parents react when their children use these tools (computers, iPads, phones)?

3. What are the students' views about using information technology?
4. Does information technology positively or negatively impact students?

METHODS

This study uses quantitative research methods where the instrument is the questionnaire. The researcher collects and analyzes the quantitative data. The quantitative data and their subsequent analysis provide a general understanding of the research problem.

a) Aim of the study

This study examines the impact of leading information technology on teaching lower secondary school students and shows advantages and disadvantages of technology information for students.

b) Study group

The population used in this research was all 5^{th} - 9^{th} grade students of primary and lower secondary schools in Kosovo. The study sample consisted of 50 students in grades five through nine whose ages are between 11 and 14.

c) Data collection

The research was done through a questionnaire. The questionnaire was designed to gather the opinions of female and male students related to using digital technologies and social networking, and advantages and disadvantages of using technology in education. The questionnaire consisted of 10 questions including demographic information, e.g., gender, the educational level of parents, age, and monthly household income level. Included in the student questionnaire are detection questions, descriptive questions, explanatory questions, and evaluation questions. All of the questions were optional. The students were given approximately five minutes to fill out the questionnaire.

d) Data analysis

The data were analyzed by descriptive statics, while the difference was analyzed through an ANOVA test, to find advantages and disadvantages of using information technology by students in the classroom during the learning process. IBM-SPSS Statistics 20 was used for quantitative data analysis.

FINDINGS

Findings are expected results of our research. They are presented through two tables and two figures providing answers to the four research questions.

Table 1. *What does the information technology presents for you?*

Students' responses (n=50)	**N**	**%**
Innovation	24	66%
Impediment	11	30%
Benefit	15	4%
Total	50	100%

According to students, information technology tools help them to be always up to date by being informed about innovations around the globe (66**%** of them respond to this option), 30**%** of students see it as a barrier, and 4**%** see information technology as a benefit.

a) Research question 1:

How many children use information technology during the day? (See Table 2)

Table 2. *Frequency of use of information technology by students*

Students' responses (n=50)	**N**	**%**
Two hours' or 'four hours'	43	86%
Twelve hours'	3	6%
Almost all day'		
Do not use it	4	8%
Total	50	100%

F=11.74779, p=000852

78% of students responded that they use technology '*Four hours' or* '*Two hours',* while 8% responded '*Do not use it'* and 6% say they use it '*Twelve hours'.* No student responded to the option '*Almost all day'.* One-Way ANOVA concludes there is a statistically significant relationship between students in lower secondary education and the use of the Internet by children (F=11.74779) and (p=000852).

b) Research question 2:

How do parents react when their children use these tools (computers, iPads, phones, projectors)?

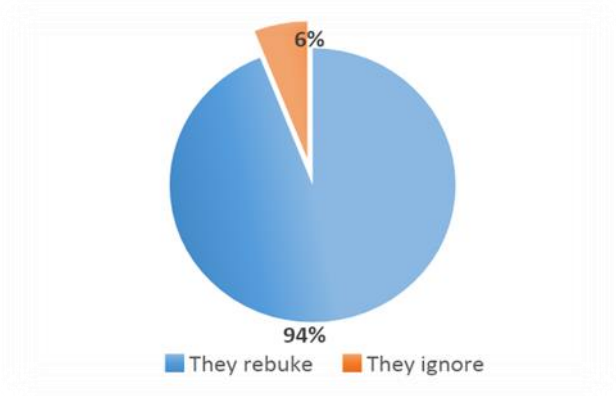

Figure 1. Parents' reaction when their children use electronic devices (computer, telephone, iPad).

94% of students say that their parents rebuke them when they use technology *(computer, phone, iPad),* and 6% say that their parents ignore them when they use technology.

c) Research question 3:

Which are perceptions of the students about using information technology?

Regarding the advantages and disadvantages of using information technology, '*Training for new tasks', 31.21% of* pupils say '*Training for new tasks*' has advantages *31.21%,* and 1.07% say it has disadvantages. 29.30% of pupils say '*New knowledge'* has more advantages and 4.30% say it has disadvantages. 28.66% see *'The significant loss of time'* as an advantage and 5.38% see it as a disadvantage. 50.54% of pupils view information technology as a disadvantage in *'Communication with people'* while 1.91% see it as an advantage. 38.71% view information technology as a disadvantage in *'Impact to achieve*

correct resources', while 8.92% see it as an advantage. The result is significant ($p< 0.00001$) and $x^2=155.5715$ (Table 3).

Table 3. *Advantages and disadvantages of using information technology*

	Advantages		Disadvantages	
(n=50)	**N**	**%**	**N**	**%**
New knowledge	46	29.30%	4	4.30%
Communication with people	3	1.91%	47	50.54%
Impact to achieve correct resources	14	8.92%.	36	38.71%
The significant loss of time	45	28.66%	5	5.38%
Training for new tasks	49	31.21%	1	1.07%
Total	157	100%	93	100%

d) Research question 4:

Does information technology positively or negatively impact students?

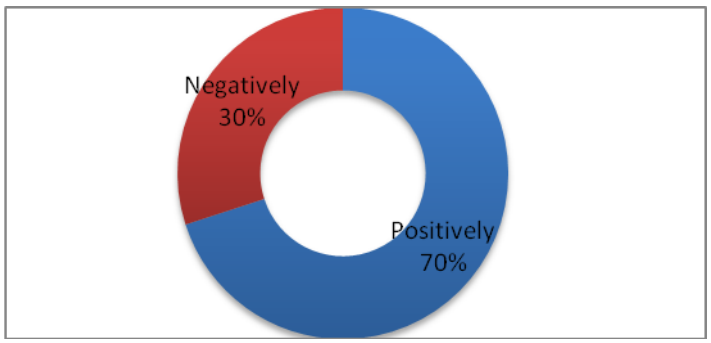

Figure 2. Impact of information technology on positive or negative

Information technology tools by students have a positive impact on achieving their learning (70% of students consider this), and 30% of them consider that the means of information technology can have a negative in learning.

DISCUSSION and CONCLUSION

Numerous studies say information technology use by teachers and students should focus on educational purposes rather than practical computer tools and programs. Independence, group work, basic reading, writing, drawing skills, and other habits of the high level of knowledge are prerequisites for a successful use of information technology among students. Teachers need (80%) non-technical skills and (20%) technical skills, while students must first elaborate on the information they receive, then tie it with experiences that they recognize from their own lives, and link them to real life and nature (Lawrence, 2007). Students can also interact with different people, as with classmates, teachers, students of other classes, students from different communities and people from around the world through modern electronic devices. When students work in groups, they are required to be active and cooperative. Teachers should ensure that such interactions are effective (Brown, 1997).

Jakobsdóttir (2001) in his research he concludes that student computer use in the schools with perhaps more nontraditional teaching methods appeared to be more widespread. According to a study released by Educause in 2004, technology has increased student access to learning (Smarter Services, 2017). Different people have different levels of comfort with

new matters. Technology can open more doors and introduce new experiences. These new experiences will also result in new discoveries about the world (Gaille, 2018).

Kulik (1994) in his finding explains some positive and negative effects of technology information on achievement of students. Students who used computer based instruction scored better, at the level of 64% on the achievement test, compared to students in the control group without computers scored at the 50% level. Students learn more in less time when they receive computer based instruction. Students like their classes more and develop more positive attitudes when their classes include computer based instruction. And the negative finding is that computer did not have positive effects in every area in which they were studied (Schacter, n.d).

Sandholtz et al. (1997) concluded that the impact of technology in schools is somewhere between it's the only way to make a positive change in schools to it's a new fad. They see technology as a strong tool for positive change but it must be presented in the right ways (Muir-Herzig, 2003). Tolmie (2001) argues that it is unlikely, given the complexity of the research context, that the addition of any new element into the classroom environment could have a straightforward impact on learning (Pilkington, 2008). When students have access to powerful mobile devices and digital resources that are continually updated, they realize that learning does not stop at the end of the school day. In addition, technology empowers students to take control of their own learning. By providing students with tools to engage and create, as well as monitor their own progress, students are put in the driver's seat and become owners of the learning process (The Aspen Institute, 2014).

Research, globalization, educational games, distance education, and web seminars are the five positive effects of technology on education. The advancement of technology has made research easier for students. Technology enables students to take courses on the Internet at their convenience. Web seminars are exciting ways to facilitate learning from anywhere in the world. Students can learn the basics of spelling, counting and other early educational lessons through computer games that make learning fun. Students can pick and choose what mediums they prefer to learn content and maximize their study time. Students have immediate access to anything they do not understand or want to learn more about. Students are no longer solely dependent on teachers, parents, or other educated people to be their only sources of information. Students are in charge of their own learning, and technology levels the playing field in many ways (Smarter Services, 2017).

While the positives far outweigh the negatives, the downside of technology still exists. Misinformation has been around since the old fashioned "telephone or gossip" game which requires absolutely zero technology. Another negative consequence of technology for student learning is having a record of foolish things they say and do. These days no matter where you are, almost everybody has a device with which to record an event. The Technology does foster laziness and contribute to the instant gratification sensation. However, it provides information more quickly, which allows for more time to learn (Smarter Services, 2017).

O'donoghue et al., (n.d) in their article explain that many researchers suggest three main impacts that the information technology will have on education that will consequentially impress upon all societies. Firstly, Schurer (1997) questions the possible demise of human attributes. He believes that those brought up with telematics are intelligent but suffer a deteriorated emotional capacity such as socializing with people they never actually meet therefore omitting the whole social experience from their lifestyle. This is turn restricts development attitudes and cultures. Secondly, Joo (1999) believes the Internet is not an educational innovation since it does not take into account cultural precedence. Finally, there is the additional danger identified by Barnard (1997) that the current revolution is tele-communications threatens to create an expanding gap between the computer literate and the technologically deprived or technophobic.

Technology also allows parents to become more engaged with the learning process through tools that provide real-time access to information on their child's progress and the ability to communicate virtually with school teachers and leaders. Parents are also a key element in teaching safe use of these powerful tools. In collaboration with schools, parents have the important responsibility of teaching their children how to be respectful and safe digital citizens.

Technology has a strong influence on the education of today's students. Over 80% of students surveyed for this study use the Internet to gain many advantages, especially obtaining new information and communication with people. 70% believe information technology has a positive impact, while the 30% believe it has a negative impact. Negative impacts include poor concentration in class and significant loss of time.

There is a statistically significant relationship between students in lower secondary education how they are using the information technology (F=11.74779) and (p=000852). Information technology makes training for new tasks, gaining new knowledge, and saving time easier. However, technology can make communication and research more difficult.

Parents have an important role in the education of their children, so the most of the time they watch what their children see on the smart phone, the internet, etc. But, it happens that they even ignore these and have no control over their children. Teachers and parents keep the main role in allowing the use of the right of children to information technology. Parents often scold their children regarding the position of the computer during the often unduly conside

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