

The Benefits of Using Technology to Optimize Student Learning in the Classroom

Nicoleta Duță, Victoria Gheorghe

1. University of Bucharest, Faculty of Psychology and Education Sciences, Romania, nicoleta.duta@fpse.unibuc.ro.
2. University of Bucharest, Faculty of Psychology and Education Sciences, Brunch Buzău, Romania, victoria.gheorghe@fpse.unibuc.ro.

DOI: 10.63467/all14.art2

Abstract

The use of technology in teaching practice is contemplated as a necessity facing the adaptation to the current needs of society. The purpose of this research highlights the benefits of using technology in education and to optimize students' learning in the classroom. The study emphasizes the results of a recent research accomplished survey Likert-scale. The participants in the research are 150 students from the secondary education institution in Buzau. The results obtained by analyzing the responses of the subjects included in our sample have shown that a group of students have the same opinions regarding the benefits of using technology in the classroom.

Keywords: ICT, education, motivation, classroom, learning.

1. Introduction

In this article we present practical approaches to the question of the benefits of technologies in education, in learning of the students. Improving the quality of the education process and the

skills developed in students are two interrelated desires of the current society in the field of education. Today, more and more teachers are using technology to improve the quality of teaching and help students learn more actively. Educational technologies provide flexible learning opportunities. Research shows that online activities offer learners some flexibility in terms of time, place and pace. Technology has transformed the teaching and learning environment.

2. Literature Review

Based on the literature review and from a pedagogical perspective, technology allows students to take control of their learning, reflect on practice, and establish the context that allows them to handle new learning situations.

The use of technologies in education is becoming a new form of communication with students, and teachers can use these new tools for different purposes. We now live in a digital age and today's learners have different needs. Learning doesn't just take place in the classroom, but outside of it as well. In present, technology has transformed the teaching and learning environment. Educational technologies offer flexible learning opportunities. Research affirms that online courses provide learners with some flexibility in terms of time, place and pace.

Today, the digital age is considered one which we need to embrace. Technology in education opens a huge world of possibilities as to how we convey, share, and engage with students presenting different ideas, facts and theories.

The challenges facing teachers today are complex and diverse. Its performance has been rethinking based on educational models focused on student learning, which also demand substantial changes in the academic-administrative organization of education institutions.

According to Amutha (2020) ICT are influencing all aspects of life. There is no doubt that ICT brings a massive change in the field of education also, it makes the teaching- learning process effective and interesting.

Educational technologies offer flexible learning opportunities. Research affirms that online courses provide learners with some flexibility in terms of time, place and pace (Gedera et al., 2015).

Using technology and educational platforms in teaching activities can enhance learning. In the classroom, motivation drives many behaviors and it is important to understand the role of the ICT in an educational environment (Coccea, M. & Weibelzahl, S. 2006).

Innovative technologies not only have the potential to evolve pedagogical practice, but also completely transform entire learning environments. When technology is leveraged with a very strategic vision and change management plan, the results can be revolutionary (Groff, 2014, p. 8).

Technology is most effective when there is a holistic strategy to integrate digital and no digital resources; the school's infrastructure needs to facilitate the use of the technology being introduced.

A series of educational phenomena such as "synchronous and asynchronous interactions in virtual and mixed learning environments, learning management platforms and tools, digital educational resources, the educational use of different applications and digital tools, virtual assistants for learning and teaching, digital skills of teaching staff, educational policies and specific programs" (Istrate O., 2022, p.3) determined the emergence and rapid development of a new, interdisciplinary field of study called *digital pedagogy*.

3. Methodology

3.1. Objectives of the research

This study investigates the role of technology in engaging students to learn effectively and explores their attitudes toward using technology in the classroom. At the same time, this article aims to develop useful suggestions for educators, students and teachers in schools to actively involve students in the didactic activity, thus improving the quality of education. This study was conducted at a secondary education institution in Buzău, with 150 students who answered the questionnaire with items that concerned their attitude towards the technology used in the classroom.

3.2. Research sample

In order to know how the attitudes of students regarding the use of technology in the classroom, and thus detect the main benefits but also difficulties that students may have in their studies in

general, was designed Questionnaire as a technique data collection information and they were asked questions: *To what extent do you consider digital technologies to be effective in the activities? Digital technologies support the effective development of course content? How well do digital technologies support collaborative learning? What benefits do you think you have had from your teachers' use of digital technologies?*

A total number of 106 students answered the questionnaire.

In total, 15 closed Lickert type questions or with pre-formulated answers were asked. For multiple-choice questions, respondents could add other answer options, thus completing and enriching the collected data:

- *What are the ways of integrating digital technologies within the lessons/courses? Please fill in as many options as possible in addition to those already listed (e-mail, online groups, chat, educational platforms, other situations).*
- *What are the digital platforms used in the lessons/courses? Please fill in with other variants used in addition to those already listed (Moodle, Adservio, Google Suite, Socrative, Other...).*
- *What is your preferred way of teaching the lesson/course? (direct teaching, face-to-face, interactive; Direct teaching, face-to-face with visual support; distance teaching, via the Internet, synchronous; distance teaching, via the Internet, asynchronous; other).*
- *What disadvantages have resulted for you from the use of digital technologies in the lessons/courses? (difficulty managing time; too much attention paid to technology; violation of privacy, cyber bullying behaviors; ignorance of cyber security rules; other.*

In what follows, we present a more detailed description of the sample structure: by age, the majority of respondents, 49.1%, are between 18-19 years old (see **Figure 1**).

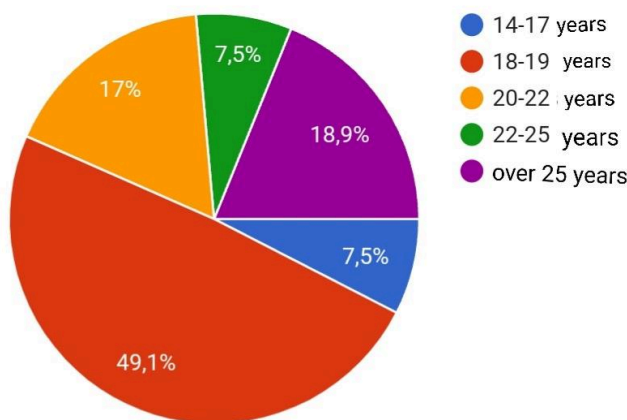


Figure 1. Distribution of population by age

3.2. Procedure

The procedure followed to obtain the data was the written application of the questionnaire, sent to the students by email (Google Forms).

4. Results and Discussions

The results obtained by analyzing the responses of the subjects included in our sample have shown that a group of students have the same opinions regarding the benefits of using technology in the classroom.

The respondents' preference for the use of digital technology in teaching activities (*To what extent do you consider that digital technologies are effective in teaching activities?*) is expressed in a relatively high percentage: strongly agree -5- 69 (65,1%) and agree-4-28 (26,4%) (see **Figure 2**).

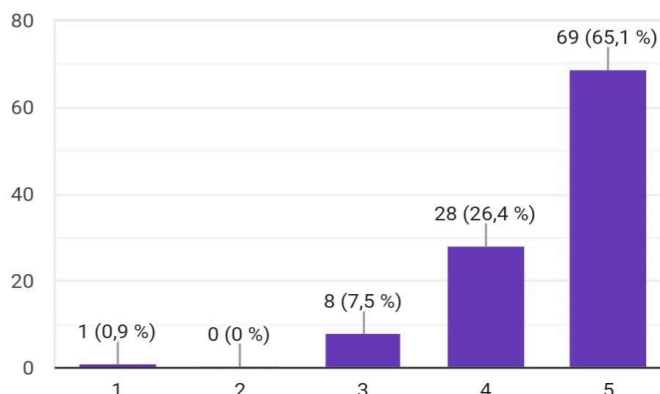


Figure 2. Graphic of responses students

Contrary to students' desire or perception of digital technology being used in teaching activities, its actual use, according to students and students, is much lower, 13.2% (strongly agree) and 28,3% (agree) (see **Figure 3**). From here, one of the clear directions for optimizing the didactic process can be formulated, through the use of digital technology on a larger scale by at least 25% compared to how it is currently used.

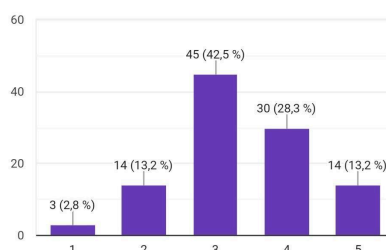


Figure 3. Graphic of responses students

Also, another important factor is students' commitment to learning and using an online environment and the ability to share their own creations with other students by providing constructive feedback.

In an overwhelming proportion (45% - to a very large extent and 45% - to a large extent), the respondents believe that digital technologies help them to better understand the learning content. Digital technologies support the effective development of course content (see **Figure 4**).

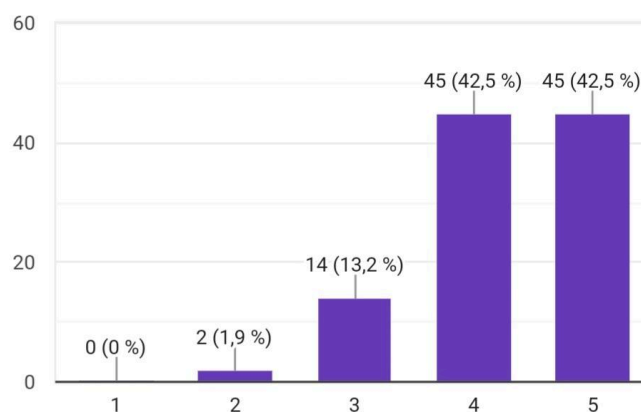


Figure 4. Graphic responses of subjects

I noticed how well digital technologies support collaborative learning (see **Figure 5**).

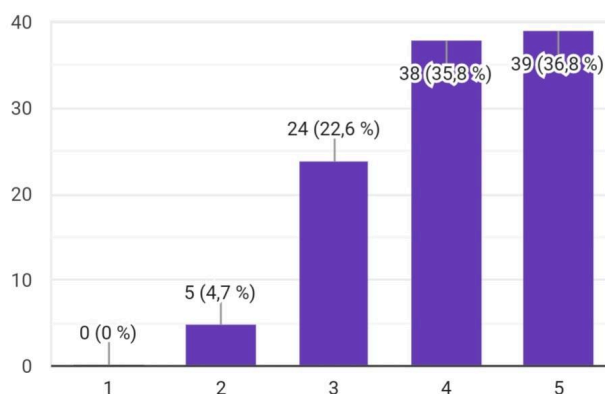


Figure 5. Graphic responses of subjects
(digital technologies support collaborative learning)

The use of technologies in education is becoming a new form of communication with students, and teachers can use these new tools for different purposes. Also, another important factor is students' commitment to learning and using an online environment and the ability to share their own creations with other classmates by providing constructive feedback.

Depending on the students' opinions about the benefits of using digital technologies in teaching activities (*What benefits do you think you have had from your teachers' use of digital*

technologies?), teachers build working alternatives. In this sense, the respondents highlighted a number of benefits:

- their active involvement in activities
- development of digital skills;
- quick access to information;
- differentiating the learning activity and personalizing it according to one's own pace and interest;
- access to varied and quality resources;
- autonomous learning;
- access to recorded lessons;
- effective collaboration in groups.

As we have noted from data collection the students are motivated by the atmosphere during classes the use technology. The climate is established through some hours motivating and attractiveness by applying modern working methods (in groups, guided discussions, debates, use of the new technology, forum and the classroom). The climate needs to at the same time be relaxed and captivating, and the teacher to manifest enthusiasm and passion.

It should also be noted that no respondent denied their role in facilitating learning, which demonstrates, once again, the role of learning anchors that digital technologies fulfill for students. These results in other concrete measures to improve the school's offer:

- the material and financial investment in the substantial digital training of teachers in the stage of initial and continuous training;
- creation of the formal, supporting curriculum in a digital version,
- encouraging teachers to work in interdisciplinary teams to create relevant curriculum for students, in accordance with the future requirements of education, society and direct and indirect beneficiaries;
- permanent digital modernization of school facilities;
- the collaboration of educational institutions with institutions capable of creating digital curriculum or the creation of much stronger IT departments at the level of schools and faculties.

The data analysis indicates the use of technology in the classroom to offer support for understanding content courses, optimize learning and provide increased motivation for continuing didactical activities.

5. Conclusions

The study's conclusions show that technology has had a significant impact on engaging students in the educational process, increasing motivation for learning and facilitating teamwork. Incorporating problem-based learning, collaborative learning, experiments, and the use of technology, allows for greater interaction and the opportunity for students to practice newly acquired skills and knowledge. "Accessibility and customization, increased motivation and engagement, collaborative learning, development of essential digital skills, digital learning and flexibility, effective assessment and monitoring, access to experiential learning through VR (virtual reality) and AR (augmented reality) technology" (ChatGPT, Personal communication, september 28, 2024) are the ways in which digital technologies supports the development of relevant skills for the future and the improvement of students' academic performance. Although it investigates students, the study is addressed to teachers who need vision, scientific perspectives on the education of the future in order to build meaningful educational actions.

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