

The Importance of Information Technology in the Activity and Professional Development of Teachers

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Abstract: *The use of information technology in the activity and professional development by the teachers, represents an extinguished necessity of the current stage. The new technologies come to the aid of the teacher, in the exercise of his profession. Using them makes the teacher's work more efficient, it helps him save time and space in making the necessary documents for carrying out, in good conditions, the activity. The development of information technologies has boosted the professional training of teachers for the use of TIC tools. Traditional teaching methods are not replaced by technology, but this can improve both the course material and the relationship between students and the teacher. Educational institutions must take advantage of the opportunities offered by technology and create programs, special software to offer the student an interactive, rich and varied learning experience. Technology is everywhere around us, and this must determine us, those responsible for the educational act in schools, to change the way students assimilate information during class hours.*

Keywords: *information, technology, education, teacher, professional training, educational institutions, students, educational document.*

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1. Introduction

“The new digital age determines a new type of approach to the educational phenomenon through new communication and information technologies”[6]. Thus, a new education is born, that virtual type of education, online, leading us to the conclusion that there is a new perspective of approaching the educational process in the conditions of postmodern societies. Today, the system developed in the technology learning process is characteristic of the informal education formula. “The applicability and impact force generated by these technologies must lead to their widespread introduction into mainstream general education. The advantage in the case of new technologies is the high degree of receptivity of young people, consumers of new media” [7]. New technologies for processing and transmitting information influence, in all spheres of activity, the way of communicating and interacting.

In education, we believe that, at present, the essential issue is the correct understanding of these resources. ”Through the variety of informational content and the variety of support, they can be an effective tool in teaching, learning and evaluation when they are subordinated to a clear pedagogical conception/vision” [5].

Modern tools and technologies do not eliminate the role of the teacher, but they enrich the pedagogical tools in accordance with the aims of each educational cycle.

2. Theoretical Background

The term was first used in 1958 in an article in the Harvard Business Review, in which Leavitt and Whisler state: “New technology does not yet have a well-established name; we will call it 'information technology’.”[6] “Information technology is an element of connection between classical electrical engineering and much newer computer science, many professional institutions profiled (initially) electrotechnical extending over time to the field of information technology. Not to be confused with Computer Science and computer systems” [7].

Information technology finds application in multiple areas related to data and information, such as: processors, computers, hardware and software, programming languages, data structures and more. All elements that process, in one way or another, data, information or knowledge are considered to be part of the broad IT field.

That is why higher education institutions have introduced new departments, courses, profiles and appropriate exams, to keep up with these trends in IT, in addition to the fields of Informatics and Information Systems.

We consider that the introduction of new information technologies in the activity and professional development of teachers brings many benefits to the education system. The use of multimedia tools leads to a much better understanding of concepts and ideas than the classic tools so far.

In addition, they offer “unlimited learning resources and the ability to jump from one reference to another, to discover the meaning of each concept at the touch of a button. In this way, the possibility of an integrated understanding is offered and cross-disciplinary approaches are encouraged” [4]. New Information and Communication Technologies have “significant potential to stimulate innovation and change in current education and training systems, but in general terms, technological progress is much faster than the pace of change in education and training” [2].

Education has been and remains the cornerstone of a good future, the best legacy a child can receive. But when the future is reconfigured by technology, the book turns into a tablet, and education must turn into education for life, not for grades.

3. Argument of the paper

The world we live in is in constant motion, the speed with which information circulates and with which technology evolves is greater than ever. Real learning in the virtual environment is no longer a novelty for many of us, the Internet being the main source of information for most of the world's population. In this context, in which especially young people increasingly use the computer, and especially the Internet, to get information, to learn and especially to spend their free time.

The use of the computer in the classroom is seen as a necessity, and, moreover, as a natural stage of progress. A progress, which entails a number of advantages, and, implicitly, a number of disadvantages. This is only an anchor to today's reality, a reality in which people are becoming increasingly dependent on technology and all that it entails, the solution not being the refusal to accept the inevitable, but finding the best ways to integrate. of working with the computer in our work, as teachers in a constructive manner - to facilitate students' access to information, to streamline the educational process and to maintain their interest in learning.

4. Arguments to support the thesis

Nowadays, the computer is, indisputably, a beneficial means of didactic training. We can say that it is a revolutionary instructive means, with an impact on the educational process as it has not existed since the appearance of textbooks.

The computer provides learning through play. Many educational products turn learning into a fun activity. Because children learn most easily when they play and because children enjoy playing on the computer, computer learning can be the ideal solution. The child learns new things without making a special effort and without getting bored or easily distracted.

5. Arguments to argue the thesis

The computerization of education is a reality today. Educational software can be used in any discipline, making possible a different understanding of phenomena and knowledge.

Whether we are talking about the use of a Power Point material, or we are talking about a software or an educational game, or we are talking about E-learning, the use of the computer in the classroom entails, as I said, a number of advantages. and disadvantages easily understood.

5.1. Structure

“The new roles involved in the teaching profession require appropriate initial and continuous training, achieved on the one hand by increasing the share of learning issues and on the other hand by including sequences on new information technologies” [3].

The emergence of new devices and the development of old ones has also led to increased opportunities for useful and attractive lessons.

“When designing the pedagogical approach, the first question that the teacher asks is: What objectives do we pursue? They are to establish their didactic strategies for the full achievement of the proposed objectives as well as the means to be used” [1].

When the teacher “designs his/her teaching activity, he/she will take into account the moment when he/she wants to apply the information technology in teaching, if and when its use is necessary to achieve the proposed objectives, ie:

- how information technology correctly provides access to information;
- how information technology can help them demonstrate, explain various aspects;

- the way in which information technology helps to analyze existing models, to communicate, to search for information” [6].

Analyzing “the triangular model of mediated, educator-computer-educated interaction, the following observations can be made: the interaction between teacher and student is realized through the computer” [4]. This requires that each user (both the student and the teacher) have certain computer skills and minimal knowledge of how it can be used. In this sense, there is more and more talk in recent years about the need for information technology literacy. The common repertoire involves, in addition to accessibility elements and common codes, and compatibility between computers. Educational messages are transmitted indirectly between the two agents, as opposed to traditional face-to-face teaching-learning situations. “The disturbances of the messages that appear in the learning situations from the ordinary class, are reduced to a minimum in the virtual environment. However, other distortions may occur, such as those related to the proper functioning of the computer, the transmission of information, power outages, the speed and storage performance of the computer, etc.” [3].

The use of modern technologies in school “is part of the natural evolution of learning and suggests a natural solution to modern challenges to learning and the needs of students” [1].

The computer provides learning through play. Many educational products turn learning into a fun activity. Because children learn most easily when they play and because children enjoy playing on the computer, computer learning can be the ideal solution. The child learns new things without making a special effort and without getting bored or easily distracted.

The computer facilitates the understanding of new notions, which the child finds more difficult to approach. They are easier to understand through the computer as it provides visual and auditory support and makes interactivity possible. In addition, the child no longer has to just listen to the information provided by the teacher, but discovers it himself and has the opportunity to see “what happens if. “The computer makes possible the modeling and simulation of phenomena that cannot be observed in reality. Does the child not understand how the chemical reactions take place or cannot easily imagine how a volcanic eruption occurs? The computer can successfully compensate for the insufficient endowment of school laboratories and can facilitate the understanding of processes or phenomena that are not obvious. In addition, the child can redo anytime and whenever he wants laboratory experiments, can view multimedia animations and can simulate different phenomena naturally” [7].

The computer makes it easier to solve problems. Through feedback tests, which when the child is wrong, give him clues to solve (both theoretical clues and in the form of similar problems). In this way, step by step, the child is helped to understand and learn how to solve different types of problems.

The computer used in learning helps to consolidate information. Theoretical information is not enough for learning, and the student needs situations in which to apply the knowledge he has learned. Therefore, most educational games contain a wide range of exercises through which the child fixes his knowledge.

Another advantage that computer learning offers is the possibility to test the level of knowledge that the student has reached. Test results are provided in seconds, usually accompanied by recommendations on how the student can improve their performance.

The usefulness of these tools lies in the fact that “users (our case - students) actively participate in the learning process by obtaining information in a variety of ways that leads to improved digital skills. At the same time, they have the role of stimulating the capacity to understand and interpret the information provided” [6].

The evaluation is also done with the help of the computer. Feedback is fast and efficient. This way of organizing the lessons positively influenced the development of the classes, removing the monotony of the classic lessons. Thus, the students showed a real interest in the content taught, got involved in the lesson and asked additional questions. From a pedagogical point of view, we believe that the extremely generous offer of online multimedia tools allows the creation of educational materials through which we can express our creativity.

The role of these tools is that users (in our case - students) can actively participate in the learning process by obtaining information in a variety of ways that will lead to improved digital skills. They also have the role of stimulating the ability to understand and interpret the information provided.

The computer must thus be seen as a tool in the education of students. It depends on each teacher and parent how they choose to use it and how they teach their children to use it. Through computer lessons and educational games, “teachers increase students' interest in school because it stimulates their imagination and learning through discovery”. [2]

On the other hand, there are many disadvantages of using the computer in the classroom, including:

A possible dependence on the computer, accentuated by the fact that even at school learning is mediated by it. The student's tendency to use the computer for any activity he has to perform and sometimes to take the information with his help, without going through the filter of his own thinking.

Decreased interest in consulting sources of information in physical format, decreased interest in reading and the classical way of teaching and learning a certain content.

“The impression of passivity in thinking, determined by the fact that through the computer the information is only given to the student and that he is no longer challenged to discover them himself, to be himself the promoter of his own learning process” [1]. This is not a real disadvantage of using the computer in the classroom but rather depends on the teacher's ability to make this process/method a success or a failure. Any material, regardless of the manner in which it is taught to the student, can be assimilated by him as a theoretical content “beautifully packaged” or as a first step towards discovering new information. “If the teacher chooses to offer the student through the computer only a theoretical content, without causing him to be part of the learning, it is entirely his fault” [5].

“Their integration in the traditional teaching-learning-assessment process is an opportunity to integrate technological innovations with the interaction and involvement offered by the traditional way of knowledge” [6].

6. Conclusions

The task of education and training based on new information and communication technologies is not to demonstrate that it has immediate results in a competition with other types of educational systems, but to replace some of the current structures with a new spectrum of superior performance, in meeting the inherent changes that take place in culture and civilization.

With the certainty that information and communication technologies will become tools of universal utility, it is necessary to develop in this sense a new way of thinking and behavior that will allow teachers to cope with any new requirement. Each teacher will need to receive a basic training in ICT.

In order to achieve a quality education and to obtain performances, we must use both modern and classical methods in our activity.

The harmonious combination of these, make students become more creative, they will even look for solutions to integrate new technologies in the educational instructional process.

We, the teachers, have the task to train children in healthy activities, to offer them situations in which each of them can find themselves, to be able to choose what is good and what is bad.

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