The challenges of education in front of new technologies

Os desafios da educação frente as novas tecnologias
Los desafíos de la educación frente a las nuevas tecnologías

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ABSTRACT:
The research deals with the obstacles and challenges of education in the face of new technologies. The objective was to know the recurring obstacles regarding the use of technologies in view of the current reality of schools. The research problem asks what are the obstacles that challenge professionals regarding the use of technologies in the school routine? Bibliographic, descriptive research was used, through the identification, registration and analysis of factors that are related to the theme in question. The main conclusions point out that the teacher is devoid of training in the use of technologies and materials and methods that are conducive to doing everyday teaching and the school needs adaptation to the contemporary technological context.

KEYWORDS: Education challenges; New technologies; Ongoing training.

Introduction

The research deals with the obstacles and challenges of education in the face of new Technologies. Since, historically, these obstacles make it impossible to carry out in-service training and prevent the school from adapting to the contemporary technological context. Bearing in mind that the technological resources available in public schools are Always few, insufficient to meet the demands of educational institutions.

History has shown that the public school is not fully prepared for the Direction of the contemporary world, as the training of teachers is presented in a very small way and that their efforts to be part of the knowledge and information society without the help of the institution that supports public education. As a consequence, there are few specific pedagogical actions with the use of technological resources for individual and collective use. Schools lack both the quantity of equipment and the training related to knowing how to use it. These obstacles are found in most public schools.

Teachers need to have access to different technologies and learn to use technological equipment to add more value to their curriculum and to be able to work with these resources taking full advantage of the technologies' potential (ALVES & SILVA, 2019; ALVES et al., 2017; AZEVEDO BRASILEIRO & NUNES, 2019; CUNHA & CUNHA, 2019; EVANGELISTA et al., 2019; FERREIRA, 2019; FRANCISCATTO & PASSERINO, 2018). Teachers also need support to continue the search for new methodologies and innovative resources appropriate to the process of teaching and learning in contemporary society.

The use of educational technological tools assists and strengthens the processes of teaching and learning in contemporary society. These tools make the work at the institution easier, together with appropriate methodologies, which are different attractions for use in the classroom in the daily pedagogical work. Operating with technological equipment, programs, applications and networks, instigate teachers in the teaching-learning process to experience strategic innovation processes, both in the ways of teaching and learning, and in the way of managing the school, as they add new knowledge, stimuli focused on for interactivity, multimedia, among other characteristics that enable education professionals to act in the improvement of their career.

The primary objective of the research was to know the recurring obstacles regarding the use of technologies in view of the current reality of schools, developed for the improvement of teachers. The problem of the research asks about the obstacles that challenge professionals regarding the use of technologies in the school routine.

Descriptive research was used in which the approach aims at the identification, registration and critical and interpretative analysis of the characteristics, factors or variables found in the texts that relate to the theme. It is configured as a study in which, after data collection, an analysis of the relationships between the variables will be performed for a later determination of the effects resulting from the research (PEROVANO, 2014), analysis of books and scientific articles related to this study, in order to filter the data found on the topic in question.

The topics constructed in the development weave arguments about the use of information and communication technologies (ICT) in the educational context, virtual digital technologies and education and about the challenges of education in the face of new technologies.

The research points out that there are open questions, because the complexity of the theme presents directions that are not exhausted in this research, being plausible its continuity by interested researchers.

The use of information and communication technologies (ICT) in the educational context.

The research in question arises from the need to seek improvements in daily activities at school, instigate teachers, act more safely with the use of technologies in pedagogical activities and collaborate with the strengthening of teachers' actions in improving pedagogical practice.

The use of technologies in the educational context offers effective conditions for constructive methodological application for those involved in the teaching-learning process. When dealing with technological equipment, programs or applications, both professionals and students will be involved in innovation processes in the way of teaching and learning. Educational practices with the use of ICT, add new possibilities to enter a stimulating field of knowledge that uses interactivity, multimedia, among other characteristics, recognition of the abilities of students, because currently, new technologies are their main hobby, this premise refers to the idea of combining what students like most with what is important for their education (LEMOS, 2016; MARTINS, 2019; MARTINS et al., 2019; MELO, 2017; MOIO et al, 2017; MOTA & FERREIRA, 2017; NUNES et al, 2017; PASINATO & KOH, 2019).

The technologies combined with information and communication (ICT) allow the adaptation of the context and the situations of the learning process to the diversities in the classroom. The possibilities for using ICT are diverse, allowing the teacher to show data in a different way, availability of information at the moment he needs it or according to interest, improving the teaching process, collaborating with the student in the assimilation of the contents. In view of this approach, Moran (2012) states that:

> The use of ICT in school helps in the social promotion of the culture, norms and traditions of the group, at the same time, a personal process is developed that involves style, aptitude, motivation. The exploration of images, sounds and simultaneous movements provide students and teachers with opportunities for interaction and knowledge production (MORAN, 2012, p.13).

Imbernóm (2010, p. 36) strengthens the idea by stating that "the use of ICT means an educational transformation that promotes improvement in school daily life and learning. To take effect, changes will have to take place. Many are in the hands of teachers, who will have to redraw their role and responsibility in the current school". But many others escape their control and fall within the sphere of school management, administration and society itself.

The process of implanting new technologies in public schools has still been slow. Throughout history, the school has adapted to digital technologies, but always in an unsatisfactory way.

Among the previous teaching methods, formal education was based on expository classes, with a focus on teacher discourse and strict classes. Over the years, resistances have broken down, modifying pedagogical actions and using diversified teaching materials in school routine (PINHO & ARAÚJO, 2019; PINHO, 2017; PORTO JUNIOR & MORAES, 2017; REIS, 2017; ROCHA & NOGUEIRA, 2019; ROCHA et al., 2018; ROCHA, 2015; ROSADO, 2018; SANTOS et al., 2019; SANTOS & LASTÓRIA, 2019; SANTOS et al., 2018; SILVA & ALVES, 2018; SILVA et al., 2017; Silva et al., 2019; SOMMER & PINHO, 2017; TEIXEIRA et al, 2017; VIANA et al, 2017; ZACARIOTTI & SOUSA, 2019).

Currently, in educational institutions with greater purchasing power, technological means are used, such as cell phones, tablets, computers, multimedia projectors, digital boards, internet, among other educational media. Given this perspective, the public school has been pressured to integrate teaching with digital technologies. However, public policies developed to insert technologies in schools are negligible and discontinuous and not all educational institutions are adapted to have the equipment and most teachers still do not have theoretical and practical knowledge for the use of new teaching means. However, the environments that managed to bring together the material conditions and qualified human resources have obtained good results in the teaching-learning process.

The challenges of education in the face of new technologies consist in meeting the needs of educational institutions, both in relation to technological equipment, as well as the adequate training of professionals, so that they understand and know how to use them effectively so that they contribute, in a decisive way, to improve pedagogical practices in school daily life.

It is emerging that school professionals add knowledge and know-how to use technologies in teaching and learning, so that the institution becomes a differentiated environment through its methods of teaching and learning. It is evident that public schools have few technological resources available and that they need to adapt to the current technological context or at least minimize these discrepancies that weaken the educational process. Strengthen the school with actions involving the effective participation of all who compose and use the services in the institution, appropriating the challenges, so that together they develop their potential, involved in this daily educational activity, they will be engaged and in tune with the educational process.

The school needs to build its space as an environment conducive to facing challenges and preparing to act with innovative processes. So to innovate it is necessary to have an understanding of the innovation processes, for this, there is a need for training or at least there is an exchange of experiences, mainly with regard to educational technologies.

Digital / virtual technologies and education

Digital technologies are used in different ways and in different branches of activity, being able to stand out in industries in the automation process, in commerce in management and advertising, in the field of investments with simultaneous data and immediate disclosure, in the teaching-learning process and in distance education. We can say that the main responsible for increasing and enhancing the use of technologies in different fields was the popularization of the internet.

Lemos (2005, p. 6) points out that the Internet showed the potential to aggregate communication technologies. And recently, with the mobile internet, it is gradually making it possible for man to realize the dream of ubiquity by making telematic culture emerge. This culture adds a new direction for the use of information and that offers new means and practices of socialization to users. Currently, with constant technological renewals, it exposes the intrinsic relationship between the physical environments of the city and the virtual space.

The Internet is an intricate reality in which we are immersed and, due to the directions in which society it has been directed through new technologies, is something inseparable from our daily lives. Keeping up with advances and taking advantage of their prerogatives is of paramount importance so that we can offer to act coherently with the wishes of those we serve in the school routine and even in the other areas to which we belong.

In terms of technological possibilities, they appeared as a viable alternative facilitating work in educational systems. The inclusion of computers and other equipment, software and hardware in school spaces enables and improves students' practice and learning, access to data and the accomplishment of multiple tasks in all dimensions of human life, in addition to qualifying teachers and involving them through the creation of networks and physical and virtual communities. It is known that the changes with the emergence of technologies were great and positive for society, in relation to communicability, connection and social interaction. In addition to countless inputs, technologies have brought hope for improvements in the teaching and learning process.

Castells (2002) argues that educational technologies arise with economic changes on the world stage, a period in which technological innovations were on the rise and technological innovations were being created to serve the market.

Currently, in view of the technologies presented to the students, the teacher has the role of mediator in this way of teaching, giving the indispensable support to the appropriate and responsible use of technological inputs. For this to happen, the teacher needs to seek training and updating beyond his specialty, realizing in the technologies the contribution to act in his pedagogical practices in the school routine.

New technologies offer transformative and decisive perspectives to improve teaching, but it must be considered that there are several problems still related to the incorporation of technologies in school spaces. It is a challenge for the teacher to change his way of teaching and put teaching into practice, through a new tool.

The challenges of education in the face of new technologies

The concept of educational technology converges to the use of technological equipment applied to teaching and learning processes. It is a field of knowledge that adds new possibilities to pedagogical practice and the methodologies used by teachers. Inserting new technologies in the teaching and learning process is a challenge for teachers in the classroom. These new tools are enabling the transformation of society, since, based on these instruments, new ways of knowing, doing and creating are offered.

Education, like other organizations, is under pressure for change. The historical moment in which we are involved, points to a continuous transformation focused on the use of new technologies and more and more innovations applicable in different sectors are emerging.

According to Brito and Purificação (2012), the school community is faced with some paths to follow, which emphasize three, namely, repelling technologies and staying out of the process, appropriating technique and transforming life in a race for the new , or take ownership of processes by developing skills that allow the control of technologies and their effects.

In view of the paths indicated, the latter option is more viable, as it enhances an intellectual, emotional and corporal education of the citizen, which allows him to create, recreate and think his forms and attitudes, with strong characteristics for the transformation of society. That is why education needs a meaning, and educators need to believe in themselves, in the values they defend, that is, to have the convictions of their ideas.

Therefore, it is urgent that teachers and other education professionals seek training in this area and that they propose to be open to changes, to new paradigms, which will lead to accepting the diversity, the demands imposed by society that communicates through different language formats in an increasingly broad and technological cultural universe.

Technologies have brought concerns to teachers, especially those considered traditional in their time, as these new teaching and learning tools require differentiated pedagogical practices. On this premise, Valente (1993) emphasizes that the technologies applied in education are configured as tools that are available and, when well used, effectively favor the teaching and learning processes. Teachers and other education professionals are supposed to overcome the challenges and obstacles that may appear. On this aspect, Moura (2017, p. 4) reports that "the educational challenges of the Net generation are many and diverse, because today's students want to learn differently from students in the past".

In addition to the challenges faced by teachers, the school faces several difficulties, ranging from the lack of financial resources, infrastructure, training for teachers, pedagogical staff and other school professionals. The equipment that is available to each school barely meets the demand, being insufficient for use by professionals and students.

In order to face the challenges, the school needs to have adequate and sufficient support and resources, since the educational institutions and especially the teacher has a social role of great importance in the education of future generations. The spheres of government, through their maintainers, should offer more resources and develop public policies that enable the transformation of the school into an environment better prepared to deal with new technologies, with innovation in pedagogical practice, especially in view of teacher training. , the integral education of the student and meet this new social demand.

Final considerations

The challenges of education, notably with regard to technological resources for individual and collective use, occur partly due to their lack, given the reduced amount of technological equipment and the lack of training related to knowing how to use them. This need is visible in most public schools.

There is a need for technologies, support and changes so that we can rethink the ways, processes, strategies and didactic techniques of teaching with the use of technological resources. For this purpose, it needs public policies and financial resources

to meet the demands and minimize the difficulties that afflict public educational institutions.

Teachers need support and training for the didactic-methodological organization and the process of building knowledge in the face of teaching and learning procedures, aspects related to the renewal of pedagogical methods, of didactic innovations.

ICTs are resources that optimize educational practices, considered as indispensable means to assist in the teaching-learning process. With these resources, teachers are able to innovate in their classes, winning the attention of students, since new technologies are the most frequent pastime for children. These digital natives are growing inserted and surrounded by ICTs. Teachers should seek appropriate training to know how to handle and take better advantage of the technologies applicable to education, to be able to interact with students, making classes more playful and attractive.

The scarcity of availability of technological resources at school is worrying. It is known that more and more technologies are used to promote the work of the teacher and the student. However, there are other ways of inserting digital technologies in the school context, through the use of technologies that teachers, parents and students have at home.

Technologies are important means for the development of activities that lead to learning. For students to participate in the entire educational process, educators need to encourage students to use technologies as learning resources at school and at home to complement their educational process.

Technologies support the most contextualized, efficient, engaging, challenging and constructive learning process. Even though the school does not have these resources, families, students and teachers have technologies, and it is possible to use them at school. Teachers need to organize and together seek to interact with management in search of public training policies and to acquire technological resources for the school. These aspects demonstrate that the challenges of education in the face of new technologies, in view of the few resources available, do not prevent the carrying out of educational actions that are capable of instigating those involved in the search for knowledge.

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RESUMO:
A pesquisa trata sobre os percalços e desafios da educação frente as novas tecnologias. O objetivo foi conhecer os entraves recorrentes sobre o uso de tecnologias em vista da realidade atual das escolas. O problema da pesquisa indaga quais os percalços que desafiam os profissionais quanto ao uso de tecnologias no cotidiano escolar? Utilizou-se a pesquisa bibliográfica, descritiva, por meio de identificação, registro e análise dos fatores que se relacionam com a temática em questão. As principais conclusões apontam que o professor se encontra desprovido de formação para uso de tecnologias e de materiais e métodos favoráveis ao fazer pedagógico cotidiano e a escola necessita de adequação ao contexto tecnológico contemporâneo.

PALAVRAS-CHAVE: Desafios da educação; Novas tecnologias; Formação continuada.

RESUMEN:
La investigación aborda los obstáculos y desafíos de la educación frente a las nuevas tecnologías. El objetivo era conocer los obstáculos recurrentes con respecto al uso de tecnologías en vista de la realidad actual de las escuelas. El problema de investigación pregunta cuáles son los obstáculos que desafían a los profesionales con respecto al uso de tecnologías en la rutina escolar. Se utilizó investigación descriptiva, bibliográfica, a través de la identificación, registro y análisis de factores relacionados con el tema en cuestión. Las principales conclusiones señalan que el maestro carece de capacitación en el uso de tecnologías y materiales y métodos que conducen a la enseñanza cotidiana y la escuela necesita adaptación al contexto tecnológico contemporáneo.

PALABRAS-CLAVES: Desafíos educativos; Nuevas tecnologías; Entrenamiento continuo.