VIRTUAL EDUCATION AS A TRANSFORMING AGENT OF THE LEARNING PROCESSES

EDUCAÇÃO VIRTUAL COMO AGENTE TRANSFORMADOR DOS PROCESSOS DE APRENDIZAGEM

EDUCACIÓN VIRTUAL COMO AGENTE TRANSFORMADOR DE LOS PROCESOS DE APRENDIZAJE

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ABSTRACT: In this article, the aim is to analyze virtual education as a transformed agent of learning processes through documentary and descriptive research, for which the statistics provided by the Ministry of Education of Chile, Peru and Colombia in relation to the use of information and communication technologies (ICTs) in education either as academic support in their face-to-face classes or as a pedagogical tool for virtual classes. After its development, the implementation of virtual education became more common over the years, providing effective teaching and learning alternatives that collaborate in educational institutions to train competent individuals through meaningful learning.

KEYWORDS: Education. Learning. Transformation. Technology. Virtual education.

RESUMO: *Este artigo tem como objetivo analisar a educação virtual como agente transformadora dos processos de aprendizagem por meio da pesquisa documental e descritiva, para a qual as estatísticas fornecidas pelo Ministério da Educação do Chile, Peru e Colômbia em relação ao uso das tecnologias de informação e comunicação (TICs) na educação, seja como suporte acadêmico em suas aulas presenciais, seja como ferramenta pedagógica para aulas virtuais. Após seu desenvolvimento, a implantação da educação virtual tornou-se mais comum com o passar dos anos, proporcionando alternativas eficazes de ensino e aprendizagem que colaboram nas instituições de ensino para formar indivíduos competentes por meio de aprendizagens significativas.*

PALAVRAS-CHAVE: *Educação. Aprendizagem. Transformação. Tecnologia. Educação virtual.*

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RESUMEN*: En el presente artículo de tiene como objetivo analizar la educación virtual como agente transformados de los procesos de aprendizaje a través de una investigación documental y descriptiva para la cual se toman como referencia las estadísticas que proporciona el ministerio de educación de Chile, Perú y Colombia en relación al uso de las tecnologías de información y comunicación (TIC's) en la educación bien sea como apoyo académico en sus clases presenciales o como herramienta pedagógica de clases virtuales. Luego del desarrollo de la misma se tuvo como resultado con el paso de los años la implementación de la educación virtual se hace más común, aportando alternativas de enseñanza y aprendizaje eficaces que colaboran en las instituciones educativas a la formación de individuos competentes mediante el aprendizaje significativo.*

PALABRAS CLAVE*: Educación. Aprendizaje. Trasformación. Tecnología. Educación virtual.*

Introduction

Online teaching is an element that allows to develop the teaching and learning process through the implementation of information and communication technologies (ICTs), thus, it is possible to carry out educational work from anywhere, with no need to meet in person with the teacher. This allows the acquisition of skills and knowledge at one's own pace and not collectively, in a specific time predetermined by the student and not limited to a schedule, this methodology makes the student become, in most cases, a self-taught person.

Here we call virtual education an open system that is guided by the user, in which the exchange of ideas and knowledge is promoted through different spaces with the guidance and support of a facilitator who will be the teacher who directs the educational activity. As it is a non-classroom teaching system, it comprises several activities and tasks that are not seen in traditional classes, such as the student's active role in the construction of meanings and the resolution of problems in real cases, construction of mental maps and graphics organizers and the exchange of ideas to understand the objectives of the disciplines.

In the learning processes, social interaction is very important because most of what we learn comes from contact with other people, so in virtual education it is essential to use chat, video calls, video conferences, forums as synchronous communication tools, and e-mail, digital platforms and messages as asynchronous communication tools. The basis of this learning process is collaborative group work, where experiences are exchanged for problem solving (HERNÁNDEZ, 2017).

However, some people think that social interaction through virtual platforms is not enough in the learning process, it should be noted that there are many useful tools such as simulators that aim to improve learning and allow it to be meaningful, so that the platforms of

learning allow the incorporation of explanatory videos where simple and repeatable experiments can be carried out in any context as an effective learning tool.

Therefore, the use of online teaching becomes a transformative agent of learning that integrates better with everyday activities in schools. Parra (2012) assures that technology has had a great influence at the educational level, being a useful tool in the learning processes and has become part of the "school routine". Given the above, it can be said that virtual education allows significant learning processes to take place through the implementation of technology as an educational tool that allows improving the quality of the student.

According to what was exposed by Granados (2015), technological resources have been transformed into educational resources to facilitate learning, disrupting traditional means of learning and providing approaches that are taking on new challenges in teaching work and, therefore, in the learning process. It is in this way that online teaching allows the generation of skills that are required by society and depends on the ability of the teacher to create the ideal environment for meaningful learning.

Virtual education becomes a transforming agent of learning processes as it breaks with the guidelines of traditional education and incorporates not only collaborative work, but also applies ICT's as a tool that, in addition to transmitting information, allows it to be applied in different contexts and model the diversity of data for the verification of strategies in the systematization of processes, with which cognitive skills are developed in a way that the student is an educational agent with his own criteria and thinking.

Intel Educación (2018) presented a useful guide in which Robert Gravina, head of information technology and technology, explains that mobile technologies allow improving academic results through:

> Productivity solutions that give teachers more time to work with students and allow schools to perform more effectively. Safe portals that extend the school day, improve communication between school and home, and give parents the opportunity to become active partners. Collaborative technologies that help teachers reduce isolation and expand their knowledge by taking part in professional training communities (INTEL EDUCACIÓN, 2018, p. 72).

During the exposition, it can be said that the digital resources, not just moving at the general level, allow the teaching of the classrooms to be melted by incorporating videos, images and a high level of interaction that allows us to understand two contents of the disciplines and which are transformed into powerful sources of information search that can complement the investigative processes of teachers and students of all levels of education.

Virtual education provides a real and important approach to the development of the abilities, capacities and skills of teachers and students so that the teaching process is effective. The most important thing is that it is possible to make formative use of the means that generate significant experiences of knowledge acquisition.

García and Muñoz (2013), cite Unesco, indicating that it establishes several guidelines that make it possible to enhance learning through the use of technology and even provide qualification for teachers to create content and blogs, in addition to expanding connectivity options through the elaboration of strategies that promote the safe and responsible use of technological tools.

In this context, some questions arise: is virtual education really a factor in the learning processes? Could virtual education take the place of face-to-face classes? To answer these questions, we have the opinion of Granados (2015), who indicates that the classes that take place in the classroom, that is, in person must generate spaces that are completed with technology, therefore, both teachers and students must go hand in hand with technological growth and update their knowledge in relation to ICTs to acquire skills that will allow them to grow personally, educationally, workwise, and, in general, allow them to improve social interaction.

Virtual education allows the generation of different scenarios that allow both teachers, students and educational institutions in general to take advantage of opportunities and the generation of spaces that allow the improvement of the teaching and learning process in social and collaborative work contexts that adapt to today's society. For authors like Díaz-Barriga (2013) and Tapia and León (2013), there are a series of guidelines that support the inclusion of technology in education, the first of which is easy access to information, greater coverage and better communication and, finally, the generation of skills that allow students and teachers to adapt to the challenges imposed by globalization.

It is in this way that virtual education can be defined as the educational process (which involves both teaching and learning) that takes place using technology and that sometimes depends on the reach it has, leaving aside the face-to-face classes. This virtual education can take place in two ways: without the presence of a teacher, through a platform of standardized answers or with the guidance of a teacher with which students can participate continuously in different sections.

In terms of educational management, virtual education is seen as a process that takes place through the combination of a series of systematic tasks that are distributed in 4 areas:

- Organizational, corresponds to the monitoring and control of the formative processes of both teachers (for their formation in resource management) and students (for the correct use of didactic and evaluation resources), that is, it has to do with practice institutional.

- Technological, it is the tool through which communication processes take place, teacher-student and student-teacher, in addition, it has a variety of instruments that serve as support for the development of classes.

- Educational, is the area that allows the creation of study plans, subject objectives, content distribution, among other elements that collaborate so that the teaching and learning process takes place satisfactorily.

- Social impact, is what comprises the values and opinions of educational praxis in virtual education.

For Granados (2015), virtual education contributes to the transformation of the educational process because it involves a broad and far-reaching educational process that must be controlled through different systems that account for its contribution to educational practice, it is a field of employment for innovator agents for the construction of knowledge, providing authenticity to learning.

As the research is documentary, a series of statistics is used that allow an approach in the descriptive analysis. In this sense, to investigate this topic, statistics from the Ministry of Education from different countries in Latin America were selected (in this case, Chile, Peru and Colombia were selected as references, given that the information is available in these countries), which will allow to know the progress in the process of changing from classroom to virtual education.

The comparison of the data will be made through the percentage of use of each of the education modalities in different countries to later carry out an analysis with the averages of each of the obtained percentages, this to know the frequency of use of virtual education and the linking it have experienced in the past 5 years.

Initially, we present below: Table 1, Table 2, Table 3, which shows the percentage values in relation to the modality of education in Chile, Peru and Colombia respectively.

Table 1 – Statistics on Advances of Virtual Education - Chile.
From 2015-2019

Year	Statistics Classroom Education	Statistics Virtual Education
2015	83,2 %	16,8%
2016	78,5 %	21,5%
2017	69,3%	30,7%
2018	60,1%	39,9%

2019	55,6%	44,4%
Average	**69,3%**	**30,7%**

Source: Devised by the authors based on data from the Ministry of Education, Chile.

When observing Table 1, over the years, there has been an increase between 8% and 10% in the use of virtual education, which delivers an average of 30.7% for the 5 years, a significant result considering that the values increase over the years, meaning that virtuality and the use of technology in education is making major contributions to today's education.

Table 2 – Statistics of Advances in Virtual Education - Peru.
Since 2015-2019

Year	Statistics Classroom Education	Statistics Virtual Education
2015	91,2%	8,8%
2016	85,3%	14,7%
2017	80,1%	19,9%
2018	75,8%	24,2%
2019	70,1%	29,9%
Average	**80,5**%	**19,5**%

Source: Devised by the authors based on data from the Ministry of Education, Peru.

When viewing table 2, it was evident that Peru has increases that range from 4% to 6%, a figure significantly lower than that presented by Chile, but that likewise leads to an increase in the use of virtual education in Peru, which it is advantageous for the country, presenting elements of long-range learning that are not essentially based on educational presence.

Table 3- Statistics of Advances in Virtual Education - Colombia.
Since 2015-2019.

Year	Statistics Classroom Education	Statistics Virtual Education
2015	80,8%	19,2%
2016	71,5%	28,5%
2017	70,3%	29,7%
2018	61,1%	38,9%
2019	52,3%	47,7%
Average	**67,2%**	**32,8%**

Source: Devised by the authors based on data from the Ministry of Education, Colombia.

Table 3 shows the percentages of advancement of virtual education for Colombia, figures that clearly increase over the years with an increase of 9% in almost every year, with the exception of the years 2016 and 2017, whose increase was very small, evidencing that due to problems of educational reforms, advances were stopped in terms of virtual education and, subsequently, gaining ground with respect to classroom education.

It is important to highlight that, in the countries presented, there is an impressive increase in the implementation of virtual education, in order to confirm these values, a general analysis of the previous averages is made, and the results are shown in Graph 1, which is shown below. In which the averages of the countries taken as a reference in the period 2015-2019 are compared for a deeper analysis regarding the transcendence of virtual education over classroom education.

Graph 1 – Comparison of Advances in Virtual Education between Chile, Peru and Colombia for the years 2015-2019.
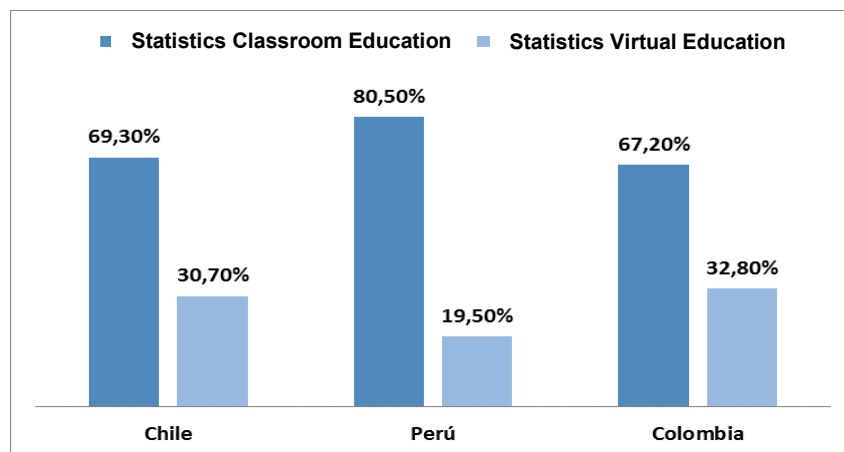
Source: Devised by the authors

In graph 1, is observed that Peru is the country that most uses classroom education, unlike Chile and Colombia, which experienced a growth in the use of virtual education in their learning processes. Making a prognosis of the results obtained, it can be said that in the next 5 years, virtual education will have a significant participation in the learning processes with an equal or greater positioning in face-to-face education, this motivated by the advantages that were observed and the advances that allowed to obtain not only in terms of communication, but also in terms of knowledge acquisition.

Final considerations

Once the article is developed, it is necessary that virtual education provides positive elements in the teaching and learning process. It also increases interest in acquiring knowledge, as it uses videos and images that contribute to the meaningful learning process, in addition to providing new learning experiences through reinforcing knowledge, posing problems and delivering possible solutions.

Rojas (2013) provides an analysis in relation to the implementation of technology for autonomous learning and highlights that technology changes traditional unidirectional education to a bidirectional system where everyone learns through interactive dialogue, in addition, it indicates that, with the use of technology, teaching continues to maintain the second order of importance and what is really protagonist is learning and, in addition, it establishes that some countries, despite technological advances, resist the implementation of ICTs in educational processes.

After presenting the cases of three Latin American countries, it is possible to visualize that the world is advancing at a fast pace and consolidating itself in virtual education as a protagonist within educational management, contributing with significant elements to the teaching processes and transforming the presence of education in digital environments, which are implemented not only as support instruments, but also as a basis for teaching a diversity of subjects at the secondary, technical and university levels.

The incorporation of technology in the learning process promotes actions for training and research processes and contributes to the socialization and understanding of the content in many disciplines in educational practice. Therefore, virtual education has been permanently inserted into the educational context and is implemented to generate strategies that strengthen the socialization of information in the disciplines and allows linking this information with the social context in which students and teachers are immersed.

Finally, it can be said that virtual education is a transformative agent of learning processes because it has an active participation within the training process, allows autonomous learning and responds to the demands of the educational reality in which individuals seek to enable their learning in their own time and space, which allows them to have self-control and self-direction, being independent students in their learning and being interdependent, sharing knowledge in collaborative learning.

Thus, education that takes place in virtual environments or uses virtual environments as a support in the formation of students allows the generation of knowledge through meaningful learning and with a collaborative work strategy in which teachers, students and technology become a triad that privileges the educational system. These elements will allow the pedagogical formation model to be based on constructivism, that is, a model where individuals are able to generate their own sense of knowledge.

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