

Logical structure for online b-learning teaching

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Abstract: This paper deals with the most salient aspects of distance education, and how it has been an issue of great relevance in the pandemic era. However, this is not a current issue, it is a situation that has affected the schooling situation in rural areas since earlier times. The positive and negative aspects of distance education from more than twenty years ago are evaluated and contrasted with the new online education methods. B-learning education and new educational paradigms are evaluated. The main results show that education can take on different effective methodologies as long as appropriate teacher training and education processes are in place.

Keywords: B-learning education, distance learning, online education.

Estructura lógica para impartir enseñanza en línea tipo b-learning

Resumen: Este trabajo trata sobre los aspectos más resaltantes de la educación a distancia, y cómo esta ha sido un tema de gran relevancia en la época de pandemia. Sin embargo no se trata de un tema actual, es una situación que desde tiempos anteriores afectaba la situación escolar de las zonas rurales. Se evalúan los aspectos positivos y negativos de la educación a distancia de hace más de veinte años atrás y se contrastan con los nuevos métodos educativos online. Se evalúa la educación tipo b-learning y los nuevos paradigmas educativos. Los principales resultados reflejan que la educación puede asumir distintas metodologías efectivas siempre que se cumplan los procesos de capacitación y formación docente apropiados.

Palabras Clave: Educación b-learning, clases a distancia, educación online.



I. Introduction

Education has always been a necessity in societies, either because of the characteristics of the people themselves or because of industrial requirements, health, training in different professional areas, since ancient times. The history of education can be conceived as a fragment within human history, or it can be approached as a social science [1]. This includes the analysis and understanding of teaching practice, pedagogy, and teaching processes in constant evolution with the times and social needs.

When describing educational processes throughout history, we are dealing with a subject of great complexity, involving culture, social attitudes, human tendencies, family values, training institutions, professional profile, and an important set of variables associated with the concept of education.

Distance education was born in 1728 in the United States, and its dissemination and methodological execution were centered on postal mail [2]. In 1856 the first institute of languages by correspondence was founded, in 1903 the free school of engineers was created, which was also taught by correspondence, and was formed by a selective group of rigorous teachers who designed and followed the educational process with great dedication. Later, in 1911, distance education was established with the Queensland University of Brisbane in South Africa. And criteria are established to provide education and training to people in rural areas who do not have access to educational centers[2].

Printed correspondence was for a long time an efficient medium for the transmission of knowledge, and was thus able to provide access to rural areas far from the big cities, offering study opportunities to many people.

In 1922, the first university to transmit courses by radio was established, the University of Pennsylvania [2]. Radio became an important complement to correspondence courses. Radio offered a simple, fast, and direct way of imparting knowledge. And these radio classes were reinforced with printed material by correspondence.

In 1976, the first online study center began, integrating radio, tapes, discs, and televisión [2]. And the teaching method became more and more effective. However, face-to-face education still has an important role in society.

From 1991 onwards, the mass public internet started [3], and with this novelty, new forms of education began, which improved the methods of distance learning. These new online paradigms significantly increased the access to knowledge, not only online courses were taught, but the dissemination of information was massive, and this information was already

diverse in all areas, from how to learn to draw to cooking recipes and professional courses in engineering and medicine.

This paper discusses the different strategies of distance education and their impact on societies, analyzing the advantages, disadvantages, and current situations that motivate the implementation of distance learning methods and processes.

The paper consists of four sections; in the introduction, the contextual aspects of the topic of study have been described, in the next section the theoretical criteria that make this work possible will be discussed, then the methodological aspects will be considered, finally, the results and conclusions will be presented.

II. Development

In these times of pandemic, where the world is going through an unexpected situation for academic training, it is necessary to implement new educational processes that contribute to teaching remotely. The prevention and protection of students and teachers are necessary to be able to take on the various current situations caused by Covid-19.

Education went from being highly face-to-face to completely online. All this without warning, without timely preparation of the processes and methodologies needed to successfully address the process.

Some studies [4] have evaluated the b-learning methodology for teaching, and have found it to be an efficient method, which offers independence to the student and the teacher, and can make the educational process more dynamic and more attractive.

Online studies have opened up a gap that was not visible until then, they have made it possible to expose the training shortcomings of the teaching staff [5], [6]. Several studies have shown that one of the biggest problems facing pandemic education is the use of technological tools [5]. Knowing and managing the different technological tools that facilitate the teaching process is an arduous process when these provisions have not been taken into account.

Training with b-learning methods has proven to be efficient, not only for students but also for teachers [7], as it offers the opportunity for self-management of time and resources. However, this activity is conditioned to the teaching methodological skills, which must be focused on b-learning processes and cannot pretend to be the same as face-to-face processes.

Figure 1 shows the main characteristics of the blended learning methodology that must be taken into account to carry out an effective teaching process.

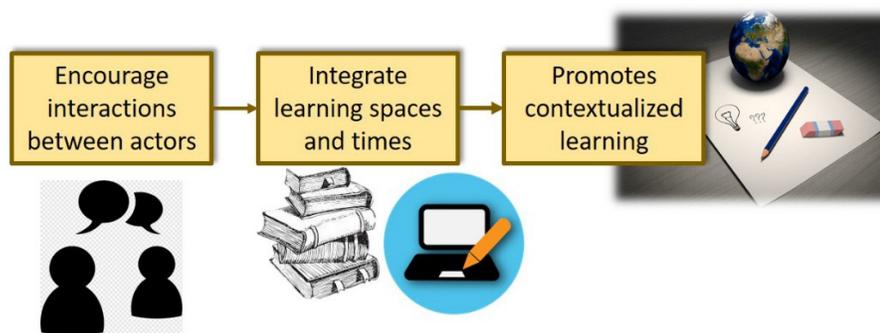


Fig. 1. Characteristics of b-learning methodology.

B-learning encourages exchange between teachers and students, as well as promoting collaborative work and interaction between students for the generation of content and the use of resources. It also integrates learning through space and time available for autonomous, face-to-face, and virtual activities. B-learning also promotes meaningful, contextualized learning by taking advantage of virtual and face-to-face resources [8].

Other aspects included in the blended learning methodology are those related to learning spaces, which can be adapted to the characteristics of each individual (Fig. 2). Besides, the b-learning methodology allows access to information in a broad, collaborative way and adapted to individual needs. [9].

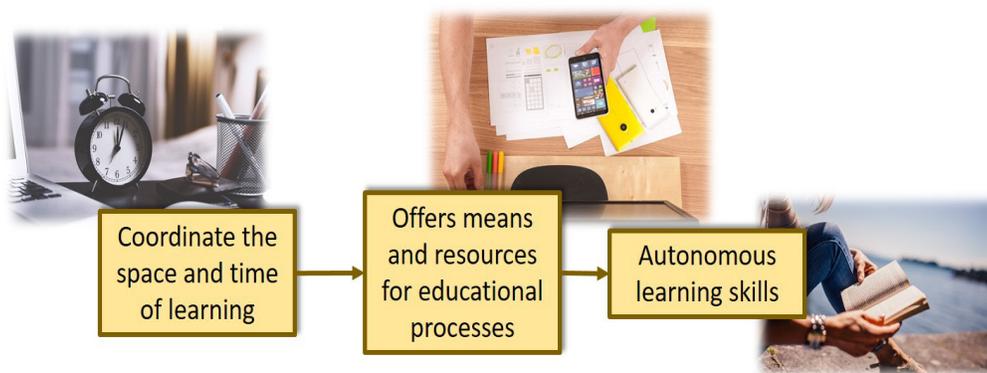


Fig. 2. Relevant aspects of blended learning methodology.

Autonomous learning is one of the most outstanding advantages of the b-learning methodology because it allows students to develop skills for their knowledge management, which can have an impact on leadership and entrepreneurial skills. [9].

Access to education in rural areas has always been a problem, in principle because transport and resource deficiencies are always high and do not allow the processes to flow smoothly. Currently, rural areas do not have sufficient internet capacity, and even if they had internet potential, they would not have the resources to access it. Online education is conditional on the use of electronic equipment that is not readily available in rural areas.

However, trying to solve internet or electronic equipment problems is not an easy task, and while the problem is being addressed, long periods can pass. The provision of techno-

logical tools must also be subject to education and training in their proper use. The teaching of online methodologies should be a prerequisite for the use of these tools and should be incorporated into the school curriculum according to the basic needs of education.

On the other hand, in ancient times [2], the educational process was carried out through correspondence, which allowed students to receive printed material and study it autonomously, motivating self-management of free time, independence, and reading. These methods facilitated teaching and contributed significantly to learning. Face-to-face meetings were limited to exams, practicals, or assessment activities that required the physical presence of those involved.

At present, rural areas continue to face difficulties in accessing education and there are no other options than technological tools. However, if educational institutions, aca-

demographic systems, and education policies had a real interest in education in rural areas, it would be possible to visualize the options of correspondence education, with real methods that favor learning and entrepreneurship.

III. Methodology

In this paper, we have carried out an analysis of b-learning methodologies for teaching at different educational levels. The bibliographic information available in Scopus

sources has been reviewed, where processes of comparison between traditional face-to-face methods and blended learning methods have been evaluated to contrast the efficiency of both processes.

The methodology of this work was focused on the selection of b-learning related material for teaching at different academic stages, recognizing teaching strengths and weaknesses, as well as advantages and disadvantages for students (Fig. 3).

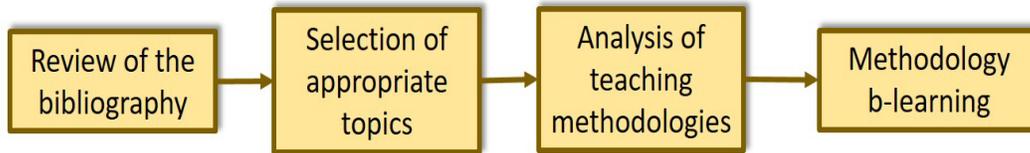


Fig. 3. Methodological process.

Face-to-face education offers important tools that favor learning, however, in times of pandemic these resources should be limited to those strictly necessary to avoid complex health situations that put people at risk. In this way, education must incorporate online tools that contribute to the educational process in a safe way for people [10], but these tools must be used appropriately to achieve optimal learning. The incorporation of a b-learning methodology that integrates both teaching options seems to be the most appropriate to achieve effective learning and to address the constraints of rural areas. [7].

The lack of computers in rural areas should not be a limitation for teaching, even though these are times of high technological developments, an efficient methodology for education was correspondence teaching, which with the appropriate elements can favor other aspects of education such as the love for reading, writing skills, among other aspects of importance for training.

IV. Results

After carrying out the following work, the following results were found:

1. Today's education must update the curriculum considering social, economic, and political changes, focusing on the present and future needs, emphasizing the relevance of

learning and not the traditions of learning. Recognizing the most relevant aspects of teaching can mean updating an educational curriculum focused on the new professionals of the new times.

2. Until a few months ago, Latin American education incorporated cultural aspects focused on traditions, social customs, and folklore of the people, however, the new educational processes should be focused on the current teaching needs, the teaching of virtual tools should be considered of greater interest, and should take precedence over the teaching of folkloric dances. Likewise, the new school curriculum should incorporate software tools at an early learning age, which motivate the development of professionals with a vision of the future, who contribute to the new global economic trends.

3. Education in rural areas cannot be separated from technology, but it cannot be limited to it, since there are significant rural areas that do not have technological services, and whose students and teachers lack the means to access it. However, a restructuring of processes can facilitate access to education, considering the tools of the postal service and the benefits of printed material for teaching.

4. B-learning methodologies offer an optimal process of IT resources, human resources, time, and travel of the actors (Fig. 4).

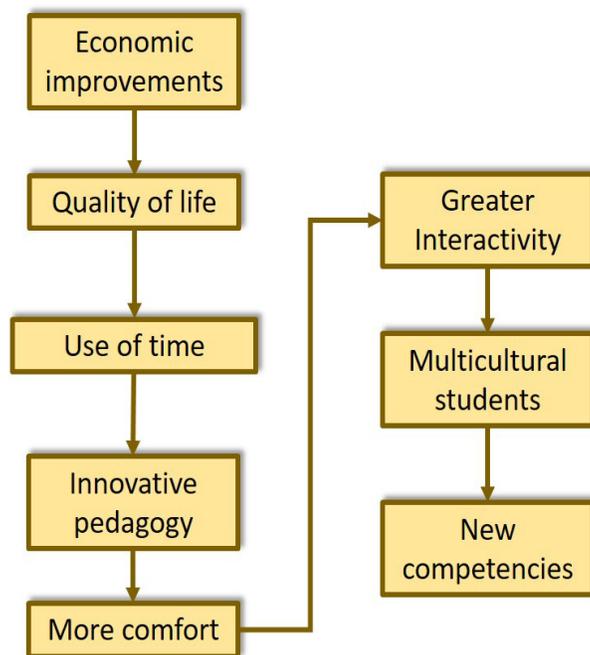


Fig. 4. Favourable aspects of b-learning methodologies.

Distance studies tend to offer more affordable prices, since they do not take into account the use of furniture and physical space, and students use the resources of the home, which avoids additional expenses.

The quality of life is also improved by distance learning, as students and teachers do not have to travel in traffic, public or private transport, which causes more stress, more fatigue, and higher financial costs. Also, people can manage their study or work time with family activities.

For the benefits of distance learning to be possible, innovative methodologies associated with these online and distance processes need to be incorporated. However, there are still institutions, mainly in basic education, that maintain traditional educational methods even with the use of digital media, which does not favor the teaching process at all, let alone the learning process.

A distance education system cannot be subject to traditionally face-to-face methods of evaluation, such as excessive requests for printed activities, the incorporation of cultural events, requests for handicrafts, or artistic activities that cannot be presented effectively in a distance methodology.

New forms of education must be focused on the future needs of professionals, taking into account global social trends, industrial needs, business needs that can be met by professionals.

Distance education should offer greater interactivity between teachers and students, as computer resources should be harnessed for this need. Also, distance education can incorporate multicultural interaction, taking into account other in-

ternational institutions that contribute to the teaching process, such as the interaction of scientific and academic projects, the integration of other teachers and other students from remote areas or different countries.

Distance education must offer new professional competencies, but they will only be possible if the academic structure shaped by the teacher and institutional policies are conditioned for it. Creating an appropriate distance learning structure can help build more capable professionals, with better resource management skills, time management skills, and multi-skills in a variety of areas, including the appropriate use of technological tools.

5. B-learning methodologies allow the combination of online tools with face-to-face activities, which can be an effective solution to teaching processes. Appropriately selecting these distance and face-to-face processes can mean raising the quality of teaching-learning, since it allows providing the necessary knowledge to the students remotely, and completing certain specific activities in a face-to-face way (exams, workshops, laboratory practices, among others).

6. Correspondence education continues to be a teaching alternative for rural and underprivileged areas, which cannot access the internet and do not have the technological infrastructure for online teaching. Printed material remains a viable option for so many students to access education. But such materials must be developed with teaching methodologies that are fit for purpose, they must comply with the same cu-

riculum as online methodologies, but their processes cannot and should not be the same.

7. Well-organised correspondence education can yield important academic results, provided that the basic processes for the development of teaching materials and the respective guidance for their use are followed.

8. Correspondence education can make it easier for students to stay at home, requiring only physical presence for assessments and practical processes.

9. Considering different forms of education delivery, depending on the environment, social characteristics, academic requirements, and individual situations can be a favorable solution for education to reach so many people where it is not possible at present.

V. Conclusions

Once the bibliographic review on b-learning methodologies has been carried out, it is possible to conclude the following:

1. B-learning methodologies contribute to many types of teaching, whether they are online or distance, correspondence, and facilitate learning in a blended way that offers important benefits to students, including time management and management of autonomous activities.

2. Education in rural areas is becoming increasingly complex, firstly because rural areas are becoming more and more extensive, and secondly, because technology seems to be the only viable solution for schools and academic policies.

3. Online teaching must be accompanied by teacher training in online methodologies, involving the use of technological tools in the academic training of students, which is not limited to the use of meeting rooms for the justification of technologies, since there are countless technological tools and online applications that can contribute significantly to learning, through didactic games, appropriate online activities that motivate the educational process.

4. A significant number of teachers around the world have expressed their shortcomings in the use of technological tools, which do not contribute to the teaching process and, on the contrary, create discontent and dissatisfaction in the school community.

5. Teacher training in the use of computer tools is of vital importance in these times where education must necessarily be taught at a distance. And the success of this online process will only be possible if teacher training in the use of technological tools is the most appropriate for the academic process.

6. Furthermore, it is of great importance to training teachers in online teaching methodologies, in addition to the use of technological tools to contribute to the educational process. This appropriate combination can mean a transformation of education and therefore, a transformation of the professional profile of the future.

7. Correspondence education cannot be discarded from distance education, since it can be the ideal solution for access to education in rural areas, where the Internet does not

reach, and the technological equipment is not accessible. Also, this correspondence process could bring important results in teaching and learning.

8. Education cannot be limited to technology, nor can it be limited to distance and resources. B-learning methodologies are an important mix of the methodological processes of teaching and can be an appropriate solution for the education of the new times.

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RESUMEN CURRICULAR



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