

## Digital contents in virtual classrooms. An analysis in Ecuadorian education

Los contenidos digitales dentro de las aulas virtuales. Un análisis en la educación ecuatoriana

Conteúdo digital em salas de aula virtuais. Uma análise na educação equatoriana

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### Abstract

With the health crisis that humanity went through with the appearance of Covid-19, many countries are facing a great challenge, which is to be able to achieve the continuation of studies while complying with the social distancing and maintaining the same quality in education. In this sense, technological tools are shown as a means that helps and supports through its various educational programs the teaching-learning processes. The new era of technology forces education to change from its foundations in order to achieve in students an integral formation and as part of it, the ability to learn. The research developed for this proposal was of an exploratory qualitative type, sources were collected from different research works, web pages, articles in which the problem that many teachers have when developing new and practical educational resources was described. This research shows that the use of digital tools in the development of educational resources favors education, making classes more practical, interactive and dynamic.

**Key words:** : Digital resources, digital platform, communicative contents, digital competences.

### Resumen

Con la crisis sanitaria que atravesó la humanidad con la aparición del Covid-19, muchos países se enfrentan a un gran reto que es poder lograr la continuación de los estudios cumpliendo con el distanciamiento social y manteniendo la misma calidad en la educación. En este sentido, las herramientas tecnológicas se muestran como un medio que ayuda y apoya a través de sus diversos

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programas educativos los procesos de enseñanza – aprendizaje. La nueva era de la tecnología obliga a la educación a cambiar desde sus bases para conseguir en los estudiantes una formación integral y como parte de ella, la habilidad de aprender. La investigación que se desarrolló para esta propuesta fue de tipo cualitativo exploratorio, se recopilaron fuentes de diferentes trabajos investigativos, páginas web, artículos en la cual describe el problema que tienen muchos docentes al momento de desarrollar recursos educativos novedosos y prácticos. Esta investigación demuestra que el uso de las herramientas digitales en el desarrollo de recursos educativos favorece en la educación logrando que las clases sean más prácticas, interactivas y dinámicas.

**Palabras clave** Recursos digitales, plataforma digital, contenidos comunicativos, competencias digitales.

### **Abstrato**

Com a crise de saúde que a humanidade atravessou com o aparecimento do Covid-19, muitos países estão a enfrentar um grande desafio, que é o de serem capazes de conseguir a continuação dos estudos, respeitando o distanciamento social e mantendo a mesma qualidade na educação. Neste sentido, as ferramentas tecnológicas são mostradas como um meio que ajuda e apoia através dos seus vários programas educativos os processos de ensino-aprendizagem. A nova era da tecnologia força a educação a mudar dos seus fundamentos, a fim de proporcionar aos estudantes uma educação integral e, como parte disso, a capacidade de aprender. A investigação que foi desenvolvida para esta proposta foi de tipo exploratório qualitativo, foram compiladas fontes a partir de diferentes trabalhos de investigação, páginas web, artigos nos quais é descrito o problema que muitos professores têm quando desenvolvem recursos educativos novos e práticos. Esta pesquisa mostra que a utilização de ferramentas digitais no desenvolvimento de recursos educativos favorece a educação, tornando as aulas mais práticas, interactivas e dinâmicas.

**Palavras-chave:** : Recursos digitais, plataforma digital, conteúdo comunicativo, competências digitais.

### **INTRODUCTION**

Many technological changes have taken place in recent years, but since 2020, with the global Covid-19 pandemic situation, changes were accelerated, especially in education, and in view of this socio-

sanitary condition, the vast majority of the population was forced to stay at home to control the spread of the virus.

As a compensatory measure in the educational field, technology was the means used to provide continuity to the educational processes at all levels; on March 11, 2020, the WHO (World Health Organization) declared COVID-19 through Ministerial Agreement No. 00126-2020, declared the Ecuadorian state in a national health emergency and designed strategies to prevent community transmission.

One of the strategies that were implemented was that the Ministry of Education of Ecuador issued a Ministerial Agreement No. MINEDUC-MINEDUC-2020-00013-A, which provided for the mandatory suspension of classes in person throughout the Ecuadorian territory. The provision applied to public, state and private educational institutions, as well as comprehensive development centers for early childhood, in all shifts and modalities. Likewise, the SENESCYT (Secretariat of Higher Education, Science, Technology and Innovation), which regulates higher education in public and private institutions, suspended academic activities at national level; therefore, not only at primary and secondary level but also at higher education level and with the purpose of providing continuity to the education service, educational platforms were implemented with all the curricular planning and pedagogical resources, corresponding to all subjects and levels, so that students may continue their studies.

This mediatic change is the one that Mariana Maggio (2021) in her book *Educación en Pandemia*, refers about that:

Every student in basic or higher education needs a device connected to the Internet to be able to fully access learning and, also, experiences and forms of participation and cultural goods are created and/or made available in virtuality, digital inclusion has been a right since the mid-2000s and is a topic on the agenda of public policies in the field of education (p. 38).

However, not all students and teachers were prepared to assume the change from a face-to-face environment to an online environment, so the need for training in digital competencies was felt more strongly than ever. This juncture has been conducive to:

- Promote the training and development of teachers' digital competencies.
- Recognize the great inequalities in the population (of student teachers) in access to technology.

- Search for different options to provide answers adapted to the particular contexts of each group.
- Awaken creativity and initiative to better manage living conditions in the home.
- Develop social-emotional competencies to best meet the challenges posed by the changes brought about by the pandemic.

Currently, educational environments have evolved rapidly with technological development and technical advances, this allows students and teachers have the need to investigate the virtual classrooms of learning technological platforms that exist to strengthen meaningful learning, causing that obtaining their knowledge is updated and driving the awakening of reasoning in all people.

Maggio (2021) in his book *Education in Pandemic* points out that: The virtual classrooms that were implemented as a strategy for continuing education had been functioning as a sort of repository of content and materials organized by subject or by units, and many teachers who only worked in the classroom mode had never had the intention of opening them for their courses, much less using them, which were alien to them until the pandemic arrived (p. 14).

For his part, Pérez García (2021) maintains that:

Due to the COVID-19 health crisis at the beginning of 2020, all educational levels had to adapt to a 100% online model, which brought to light both training deficiencies and a lack of resources in educational centers, widening, to a large extent, the digital gap between different sectors of the population, and also between different countries. Thus, the absence of a good Internet connection, the lack of technological resources and the poor training of many teachers in the didactic-creative use of technologies have been three major factors of debate as a result of this socio-health crisis (p. 8).

Together with the possibilities offered by the virtual learning classroom and the new technological resources available to us in the 21st century, we must not fail to analyze the reality of today's society and the needs that arise from it, and to which it is also important to respond from the educational system:

- Develop digital and critical thinking skills.
- Keeping up to date for a constantly changing working and professional world makes continuous and updated training an essential necessity to access, or remain in the working world.

Therefore, the didactic proposals must favor diverse paths that can be experienced by students based on choices that have to do with their histories, tastes, styles and possibilities, which at the time of providing technological resources as a tool to the teacher, must resort to techniques that help facilitate learning for students, stimulate interest in virtual techniques and ensure qualifications through competency-oriented assignments.

## **MATERIALS AND METHODS**

Within the educational institutions in Ecuador, education faced new challenges: which was to achieve equity, equality and opportunities to access quality education in times of pandemic COVID19. The demands of social distancing, implied the need to resort to the virtual learning classroom, ways to offer access to knowledge by students with the support of virtual learning classroom technologies and educational platforms.

For Begoña Tellería (2004), "ICTs did not appear at any moment in history, but emerged at crucial moments, just when the control systems of bureaucratic organizations, both public and private, were in crisis, by increasing their structural complexity and breaking down geographical boundaries" (p.19).

For this reason, educational institutions such as universities, colleges and schools had to redefine the educational process, so in order to implement the classes they had to create virtual classrooms through various platforms such as Moodle, blackboard, Microsoft Teams, among others.

This methodology was the one that many educational institutions had to adapt, in accordance with what Delgado (2020) points out in which he states that many institutions were forced to move their classes from a face-to-face classroom to an online one, experimenting with asynchronous and synchronous learning to see which one works better or adapts better to their needs and their students.

According to Delgado (2020):

Online learning is divided into two categories: synchronous and asynchronous learning. The former refers to education where students have the opportunity to learn and interact in the moment (or "live") with their teacher and peers and asynchronous learning that can happen live or offline through videos, material or educational resources previously provided by the teacher.

One of the great challenges faced by educational institutions in Ecuador is that many teachers were not fully trained to face the challenges involved in the use of digital material through various

platforms, however, the work done within these tools depends on whether students want to continue their studies or decide to abandon them.

And although having a virtual classroom is a technological advance, the reality is that many of these platforms only served as a repository tool for the didactic material of the classes that are taught online; this provides an opportunity to implement a communication model that is applied in the elaboration and development of the content of the courses, achieving a communicative, open and creative content construction, through the joint elaboration between teachers and students.

The very evolution of information technologies poses new challenges to education, since in the future these will be the tools most used by students due to the flexibility of being able to study online and the constant use of these tools in an increasingly digital world.

## **RESULTS**

With the new modalities of study through educational portals, the need arises for the creation of numerous resources, tools, systems and methodologies that have been developed over the last few years and that teachers must analyze, understand and know in order to be able to respond to these generated needs. The insertion of Information and Communication Technologies (ICT) in education aims to facilitate, improve and enhance learning and teaching, for which it is necessary to reflect on the past, where educational materials consisted of books and notebooks, making these processes monotonous and repetitive.

In the current context, classrooms and learning environments have moved to what we know today as "Virtual Classrooms or virtual portals", which have become spaces for interaction between the actors of the educational process for the exchange of information and content that will be uploaded through some type of digital resource or didactic material.

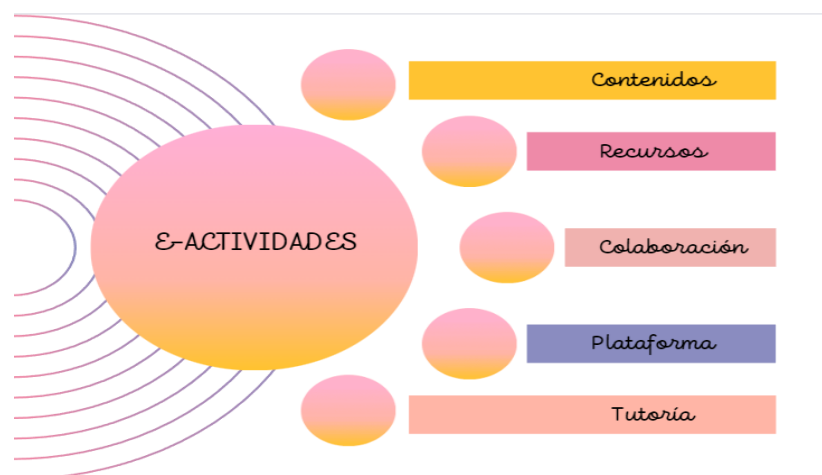
In this sense, instructional design that is carried out with digital resources is nothing more than the organization of the elements that are used when planning the teaching. It includes the competencies that students are expected to develop during the course of the subject expressed in learning objectives. It also establishes the contents to be covered, the pedagogical methodology to be applied, the didactic resources and how they will be evaluated. Therefore, the contents must be relevant for the achievement of objectives and competencies to be developed by the participants in the training process. Regardless

of the nature, the content designer must take care that the contents are attractive, adapted to the web format, that they take advantage of multimedia resources and hypertextuality.

Digital didactic resources are elements of the educational process that have presented a significant evaluation as a result of the presence of new technological tools, the usefulness of these materials in the teaching and learning process is indisputable and focuses on the interaction that is generated between students, teachers and content.

There is a current trend to consider e-activities as the focal point of courses in virtual environments, according to which students have more freedom of action and participation in the construction of knowledge. It is based on a pedagogical model centered on the student, who builds his learning by "doing" and "interacting" in the learning community offered by the online platform. From this point of view, very practical, collaborative activities are proposed, oriented to problem solving or the development of higher order skills (Silva, 2017) according to figure 1:

**Figure 1 .** Model of virtual learning environment focused on e-activities



Note: Prepared by the author of the project in Canvas. Source: Silva, 2017.

Another important element of the instructional design is the resources that should be provided to the student to support study, understanding of the content and achievement of the skills and learning objectives. These will vary depending on the learning goals and the didactic methodology adopted. An exemplification of didactic resources that can be used according to the methodology applied can be seen, they

can always be combined in the same course to deal with different aspects of a subject.

López Regalado (1981) argues that educational resources have, among other characteristics, the possibility of allowing experimentation with models analogous to reality, symbolizing and abstracting relationships between concepts, as well as providing means to exercise or evaluate new learning.

Although it is debatable to define content as the center of teaching, it is recognizable that it plays a leading and important role, since communicative relationships are established between teachers and students in which content has an intrinsic value that favors and facilitates this process and its results.

Zapata Ros (2005), for his part, recognizes the need for educational resources in the acquisition and development of the teaching and learning process. "Each learning process requires specific conditions that are different from others. Conditions to be determined through planning and evaluation processes" p (4).

These learning conditions are determined by two elements: educational resources and teaching strategies, and by the interaction of both. It is important to consider the feasibility and functionality that these digital didactic resources must have and their impact on learning, verifying if the desired objectives are being obtained or if they persuade students to acquire the contents in a dynamic way.

Establishing a classification for digital learning resources makes it easier to analyze them, their use and impact on learning. "Didactic materials or educational resources can be classified under several criteria: by their physical presentation, by their format, by their level of abstraction, by their persistence, by their granularity or by the cognitive objectives they promote" (Aguilar Juárez et al., 2014, p.74).

The most recommended is to combine educational resources that can be of different nature: texts, audios, videos, various interactive materials, and take advantage of the flexibility offered by technology and select resources that are attractive, accessible to all, easy to use and that have the least impact on creating a digital divide among students.

Another element that cannot be forgotten in the design of online courses is evaluation. Formative assessment is carried out during the course and can be developed through collaborative activities, such as

forums or participation in wikis, or through online quizzes or self-assessment tests. And the summative evaluation involves all the scoring activities that will contribute to the final grade or to the achievement indicators of the learning goals set out in the course.

## CONCLUSIONS

Although the pandemic forced many teachers not only in Ecuador but also in Latin America to prepare themselves in the use of digital educational tools, there is still a big gap to achieve a digital competence of excellence in teachers, especially for those who teach theoretical classes or for teachers with advanced ages, this opens a great opportunity for educational institutions to continue training their teaching staff in the use of new digital educational tools.

The rapid evolution of information and communication technologies applied to education has led educational authorities, researchers and teachers to seek new educational modalities that generate the greatest possible coverage, guaranteeing the quality of services, methods and content.

The fact that a teacher is trained allows him/her to create more dynamic and practical educational resources, a more innovative learning, allowing the implementation of educational resources that facilitate curricular activities according to the educational needs of his/her students.

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