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<http://dx.doi.org/10.35381/e.k.v3i6.1030>

Google drive y Google classroom en el proceso de enseñanza - aprendizaje en bachillerato general unificado

Google drive and Google classroom in the teaching process - learning in unified general baccalaureate

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ABSTRACT

The research aims to analyze the didactic use of Google drive and Google classroom in the teaching-learning process in the unified general high school as a means of educational innovation from Information and Communication Technologies (ICT). It was approached from a quantitative approach and a descriptive type in a population sample of 65 students and 13 teachers. The students' acceptance of cooperative work is highlighted in the results, a situation that contributes to generating social skills based on respect, equity and synergy to build learning. ICT-based learning is the pedagogical approach of the present and future education; therefore, its effective implementation is more than necessary. In this way, based on the results obtained, its contribution to cooperative-collaborative learning is confirmed, since it promotes creative skills for the generation of an innovative education.

Descriptors: Computer assisted instruction; computer uses in education; educational technology. (Words taken from the UNESCO Thesaurus).

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INTRODUCTION

The information society and the knowledge society are the educational sociological approaches in which humanity has mobilized in recent decades, due to both work with information and communication technologies (ICT). In the first, the idea is to train a knowledgeable individual from the technological point of view; in the second, the subject must provide feedback from the information received, which contributes to reflective-critical thinking, typical of constructivism or emerging pedagogies, where an active student is projected throughout the teaching-learning process. In this respect, Pérez-Zúñiga, et al., (2018), highlight that universities must manage knowledge societies.

The educational transformation, necessarily, involves the use of ICT as a pedagogical approach for the generation of meaningful learning, a perspective that allows strengthening the foundations towards the consolidation of a knowledge society, where the individuals learn with a complex vision of functioning and social framework that transcend the atomized era of education, in which the dichotomy was the center, but now, focuses on the parts as foundations for the construction of students' critical-reflective thinking.

In this way, the person leaves simple processes to find the complex ones as an option for educational transformation, being an interconnected reality to converge "with permanent crises at the level of behavior, feeling, the construction of thought, the sign, the symbol, the image and the representation, at different unconscious and conscious levels of production" (Calvo-Cereijo, 2019, p. 234). For this, the social representation of the students is involved as a clarifying entity of an educational scenario that demands meaningful learning from ICT in an effective way. It is important to take into account the view of (De-La-Torre-Navarro & Domínguez-Gómez, 2012), who indicate that learning objects (LO) may be created by the students based on guidelines issued by the teacher in order to promote a collaborative - cooperative work as an axis for the consolidation of the institutional pedagogical objectives.

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When educating based on collaborative learning, students transcend the individualistic model to one where they are active protagonists for the construction of knowledge in cooperation with classmates and teachers (Guerra-Santana, et al., 2019). In the opinion of (Rodríguez-García, et al., 2017), cooperative learning “achieves the strengthening of ties between students by applying the knowledge acquired in practice, an active, independent and creative participation during the teaching-learning process and a capacity enhancement to make correct and timely decisions” (p. 74); therefore, both styles must be promoted by the teacher in order to integrate social competencies and skills in pedagogical teaching, which will make it possible to form the premises of the knowledge society, where an education interconnected with global social reality from ICT is projected.

In correspondence with the previous vision, in Ecuador, the (Ministry of Education of Ecuador, 2013) warns that the implementation of ICT allows education to revalue itself as an axis between the student and technology, closing the digital gap in order to 'learn by doing' through technological resource support. In this way, the role of the teacher is based on promoting meaningful and quality learning from this reality. Thus, it will be possible to have a flexible, dynamic and open curriculum that reaches paradigmatic changes to work on the relevance and contextualization of the national-global pedagogical requirements oriented to the formation of a leading student in their educational history (Ministry of Education of Ecuador, 2016).

From the above, the use of LO in ICT is a vital need to promote meaningful learning in adherence to the premises of the knowledge society; nowadays, the global circumstances of pandemic have forced education to work under the virtual modality; for this reason, the application of technology has been necessary. On the other hand, at an international level, there is a reference to the work of (Ubilla-Rosales, et al., 2017), who after applying a quasi-experimental methodology, verified the effectiveness of implementing collaborative reading through google drive because the students achieved the competencies required by the teacher, based on the pedagogical guidelines issued

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for this purpose.

Another competency to highlight is the teamwork proposed by the work of (Castellanos-Sánchez & Martínez-De-la-Muela, 2013) through Google Drive, who indicated through an experimental research, that this resource was effective to promote university students' knowledge from cooperative learning, a situation that allows projecting the need to implement it in unified high school students, so that learners not only feel motivated to use ICT, but also to strengthen the teaching - learning process and cooperation for achieving a common goal.

In this sense, (Huzco & Romero, 2018) determined that the pedagogical use of Google drive and Google classroom was effective in the population sample made up of high school students, showing a significant improvement in learning with respect to skills such as: positive interdependence of the students, collaboration skills and promoter interaction, which shows not only the possibility of encouraging better academic performance, but also fostering a personality attached to ethical principles of collaboration and cooperation for mutual work.

At the national level, (Quinatoa, 2015) carried out an investigation called 'Google Drive as an educational resource', which indicated that "the teachers are the ones who must improve themselves and show the community or their students how they are consolidating their knowledge and that, in turn, their students whom they teach see them as exemplary persons who aspire to success in the future" (p. 11). In this sense, the teachers are known as leaders to guide the significant learning of their students, through a complex teaching that involves bioethical behavior as the axis for configuring a person not only with cognitive capacity to respond to academic demands, but also with ethical behavior to build citizenship for good living from education.

On the other hand, (Gómez-Goitia, 2020) reiterates the importance of the didactic use of the Google classroom; however, the author warns that this is not a magic solution, since it is necessary for the teachers to give an effective alternative that promotes effective learning, coupled with the need to have an excellent technological connection. Despite

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this, the latter was a limitation presented in the study, because not all students had the resources to work in the virtual environment. Such a situation must be foreseen in the curricular design, which must be flexible, dynamic, planned and based on efficiency for addressing a specific student audience.

The papers presented allow us to understand the importance of the use of Google drive and Google classroom for pedagogical purposes, however, it is necessary to know the potentialities and weaknesses that exist in the educational institutions of the unified general high school of Ecuador, specifically, in the province of Manabí, with the aim of taking actions that improve the significant use of these virtual tools and promote a teaching - learning process based on quality and inclusion as principles of good living.

Based on the aspects approached, the research aims to analyze the didactic use of Google drive and Google classroom in the teaching process of the unified general high school learning as a means of educational innovation from ICT.

RESOURCES AND METHODS

The research is developed from a quantitative approach and a descriptive type, which allow measuring the perception of the population based on the didactic use of Google drive and Google classroom without manipulating the variables, but observing the individuals' behavior naturally, so it was developed under a non-experimental design.

The study population is made up of the unified general high school students of the "Simón Bolívar" Fiscal Educational Institution, located in the Sosote site, Rocafuerte Canton via Portoviejo - Crucita, Manabí province - Ecuador, being constituted by 180 students, divided into 90 men and 90 women, arranged as follows: First A – B, Second A - B, Third A-B.

Because the population was finite (180 students), a simple random probabilistic sample was taken into account (Hernández, et al., 2014), so that all students had the possibility of participating in the survey. Therefore, the total number of the sample was calculated using the finite population formula (shown in equation 1):

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Equation 1:

Formula to calculate finite samples

$$n = \frac{z^2(p \cdot q)}{e^2 + \frac{z^2(p \cdot q)}{N}}$$

Where:

n = Sample size

z = Desired confidence level

p = Proportion of the population with the desired characteristic (success)

q = Proportion of the population without the desired characteristic (failure)

e = Level of error willing to commit

N = Population size

When calculating the population in the Excel program, we worked with a population sample of 65 students.

Likewise, there was a population of 13 teachers in order to collect information relevant to the teaching-learning process of the surveyed students; in addition, the teachers collaborated in the online survey applied to the students. Also, a 19-item questionnaire (distributed in 13 items for students and 6 items for teachers) with several alternative responses was applied as an instrument. In this way, the distancing was accomplished as a part of the security protocols required to prevent the spread of COVID – 19.

The instrument was validated in content by the judgment of experts and the Cronbach's alpha coefficient was calculated to determine its level of reliability. This, by means of a pilot test applied to a similar population, allowed perfecting the instrument for its definitive application, obtaining a result of 0.89 which meant that it was reliable.

For the analysis of the information collected, we worked with descriptive statistics, so the results were structured in tables, frequencies and percentage for subsequent analysis with other research related to the subject, managing to build contributions for Ecuadorian education.

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ANALYSIS AND DISCUSSION OF RESULTS

The research results are presented below:

Tables 1 and 2 correspond to results from the survey applied to students, while table 3 refers to information provided by teachers. The data in the tables correspond to the dimensions of the research variables.

Table 1.

Didactic use of Google drive.

	Fr	%
The information and content of Google drive used by the teacher is clear and easy to understand	15	23
The use of Google drive contributes to working collaboratively with your classmates to carry out the activities indicated by the teacher	14	22
Using Google drive helps you to be active and motivated to learn	15	23
You have improved your school performance through the use of Google drive	21	32
Total	65	100

The results, based on the didactic use of Google drive, are homogeneous on average of 23% and differ by 32% with respect to the 'school performance' dimension. These show that this Google cloud storage tool promotes students' motivation to be part of a teaching-learning process relevant in contingency times because of the COVID-19 pandemic. All of this, together with the current curricular requirements in Ecuador and supported by global education, project significant learning due to the effective use of information and communication technologies (ICT).

The situation described agrees with the approach of Pérez-Zúñiga, et al., (2018), who support the need to educate for training people to be active and protagonists of the knowledge society, which is achieved by implicitly promoting cooperative and collaborative learning in the unified general high school curriculum.

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Table 2.

Didactic use of Google classroom.

	Fr	%
The information and content of Google classroom used by the teacher is clear and easy to understand	19	29
The use of Google classroom contributes to working collaboratively with your classmates to fulfill the activities indicated by the teacher	15	23
Using Google classroom helps you to be active and motivated to learn	14	22
You have improved your school performance through the use of Google classroom	17	26
Total	65	100

The average results of 23% show that students work collaboratively to meet the objectives set by the teacher; likewise, they are perceived as motivated to learn. On the other hand, 26% consider that their school performance has improved from the pedagogical work supported by the Google Classroom virtual learning environment. This is ratified by 29% who indicate that the information and content provided by the teacher are understandable and give rise to a meaningful learning.

The aforementioned allows strengthening the pedagogical approach centered on the students, since it favors the ability to self-manage their learning. Thus, the premises of the (Ministry of Education of Ecuador, 2013 and 2016) are met to train the students from a flexible, dynamic and curricular approach based on ICT in order to adapt them to the social realities where they are involved. In this way, there may be a cognitive-emotional connection with what has been learned and its usefulness in social reality, especially, when computing has become the basis of the technological management of the knowledge society.

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Table 3

Performance in the teaching- learning process from the didactic use of Google drive and Google Classroom

	Fr	%
Students perceive themselves motivated to learn	6	46
Students collaborate and cooperate with each other to achieve the didactic objectives	3	23
The didactic management of Google drive and Google classroom encourages students' creativity	2	16
Students' academic performance has grown from the didactic use of Google drive and Google Classroom	2	15
Total	13	100

The teachers' responses show that 46% of the students feel motivated to learn, which confirms that the didactic use of Google drive and Google classroom has been effective in promoting a pedagogical approach based on ICT, which in turn, contributes to fostering collaboration and cooperation to learn. In this regard, 23% of them affirm that it is possible to deepen in constructivist educational practices with an emphasis on the social factor, which not only promotes cognitive strengthening, but also social skills and interpersonal relationships among students who fulfill the socializing and creator role of education, as evidenced by 16 and 15% of those surveyed.

From the results obtained, the alternative responses are emphasized in a greater proportion, which indicate the possibility to work through cooperative learning; therefore, we work with an updated pedagogical approach adjusted to the new social needs. Such reality agrees with the position of (Calvo-Cereijo, 2019, p. 234), who affirms that new social representations are built from the effective management of ICT as a tool for educational socialization.

It is highlighted that students give great value to the collaborative action, denoting, in this way, a significant contribution to promote the reflective capacity of students. This assertion is complemented by the approaches of (De-La-Torre-Navarro & Domínguez-Gómez, 2012), who underscore the need to stimulate students' ability to build learning

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objects based on the instructions provided by the teacher. This necessarily contributes to the team and collaborative work, as certified by (Guerra-Santana, et al., 2019) and (Rodríguez-García, et al., 2017), who affirm that these transcend the rationalist model and achieve the property of 'learning by doing', having as their axis, the consolidation of a student who is connected with the demonstration as the main evaluation strategy.

Also, students' acceptance of cooperative work is underlined, a situation that contributes to generating social skills based on respect, equity and synergy to build learning. The results confirm the studies made by (Ubilla-Rosales, et al., 2017) and (Castellanos-Sánchez & Martínez-De-la-Muela, 2013), who indicate that Google Drive and Google Classroom, effectively, allow developing collaborative skills for the generation of knowledge from everyday processes such as: reading and writing, which leads to the enhancement of knowledge that is not atomized, but complex.

Acceptance to work in transversal educational computing skills is confirmed, that is, functions that the student may reproduce in other computer programs, either for educational or personal purposes, which provide motivation to learn significantly. In addition, the research of (Huzco & Romero, 2018) is corroborated, who indicate that from the didactic use of Google Drive, students' interdependence is promoted, which also contributes to an emotional education, that is, a situation that requires the teachers to interact not only with their field of knowledge but also with the affective factor.

It also agrees with the study of (Quinatoa, 2015), who works with the comprehensive approach of the students, since the author focuses on the pedagogical advice as a means of educational encounters. In this way, the vision centered on the teachers may change to the students as the protagonists in the educational process; for this reason, it is necessary to take into account the recommendations of (Gómez-Goitia, 2020), who affirm that ensuring technological conditions, may provide students' effective learning.

The teaching-learning process, when approached from a collaborative perspective, leads to implicitly learning the importance of achieving the collective construction of a common good. Likewise, a connection is established with the position of (López-

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Domínguez & Carmona-Vázquez, 2017), whose points of view emphasize the usefulness of ICT to increase academic performance in high school students, configuring a position that allows fostering a harmonious climate for the consolidation of a transformative education in relation to what is proposed by the knowledge society, which must be in correspondence with building students' skills, such as reading and writing comprehensively (Torres-Cajas, & Yépez-Oviedo, 2018). Finally, learning focused on the management of simulations is added, as a strategy to promote innovative and creative knowledge, taking into account the needs of the pedagogical audience (Martínez-Argüello, et al., 2018).

CONCLUSION

ICT-based learning is the pedagogical approach of the present and future education. So its effective implementation is more than necessary. Therefore, based on the results obtained, its contribution to cooperative-collaborative learning is confirmed to promote creative skills for the generation of an innovative education, where the students are projected as the center, overcome the teaching model and encourage interdependence as a key factor to be self-taught, a necessary faculty to be a leader in society. For this reason, we work not only in the cognitive, but rather in the behavioral and emotional consolidation of the persons, with which the educational system improve their role as socializing agents.

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