The role of horizontal social networks in education: New forms of collaboration and communication

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Abstract: *The following research investigates the impact generated by horizontal social networks from the perspective of university students. Also, the benefits they bring to the process of their training and academic performance, and the frequency of their use. The work was designed under a quantitative approach, where the information was processed in frequency tables. The results obtained show that horizontal social networks have a positive impact on educational academic development, i.e., this type of tool helps to increase the opportunities to promote students' knowledge. It is known that the average connection to these social networks is around 2.59 hours, which represents that students connect between one and two hours (40%) per week. Similarly, knowledge (37%), is the benefit provided by social networks, while 50% of students perceive them as essential digital tools during their academic performance process. In effect, undertaking in horizontal social networks is a path that leaves a digital footprint that will be present in all people, who will continue to take advantage of the services they generate to* have a transformation towards technological literacy.

Keywords: *Learning, teaching, technological skills, educational innovation, technologies.*

Introduction

In a globalized world where technology rules, and every day it advances more significantly impacting people directly, it is understood that this type of technologies are tools designed to support the activities of human beings, achieving the automation of tasks and work in general.

Meanwhile, in the field of education, changes in academic systems are appreciated and that manages to encompass the pedagogical part of teachers and students, with the change in recent years the way of teaching and learning is not only limited in the classroom, but with the arrival of platforms, inverted classrooms, digital libraries, etc., offer education anywhere in the world, thus having online classes and interacting with different users at the same time, obtaining a panorama of opportunities available to everyone. Therefore, it is determined that horizontal social networks are allies in the constant development of education of students around the world, since these tools are part of the new era of knowledge allowing to have with them endless information, communication, learning, teaching, available to everyone. In this context, the support to teachers cannot be left in second place, since thanks to these tools, teachers develop skills and strategies to teach classes either directly or indirectly that allows a good understanding of the topics given in the different subjects.

For this reason, the following research aims to know the impact generated by horizontal social networks from the perspective of university students. Also, to investigate the benefits they bring to the process of their training and academic performance, as well as their frequent use. Social networks are technologies that can help in people's lives if they are used responsibly, as they are great allies in the educational field, and provide plenty of information, knowledge, teaching, learning, etc., achieving a supportive link with the current education of students and to be interconnected to a world increasingly globalized and digitized by future technology.

Literature Review

What are horizontal social networks?

Horizontal social networks are platforms where anyone can participate, since they are not limited by content. Therefore, some of them are listed, Facebook, YouTube, WhatsApp, among others (Hernández, 2022). In turn, the growth of horizontal social networks and the diversity of applications running on them is proof enough that they are not a technological fad, but are changing the way the world and society work. Education has not escaped the influence of this trend, many innovations, platforms and tools have changed traditional concepts and even created new roles to intervene in the educational process (Figueroa et al., 2019).

Similarly, horizontal social networks are characterized by their usefulness to free communication with groups of users with diverse interests on any topic (Cordero, 2018). Therefore, they are tools designed not only for the recreational part, but also for the educational part, providing great eventuality and diffusion in other fields of pedagogy. Thus, social networks encourage students to ask questions and be creative through new technologies, and even allow them to exchange and take digital resources with each other for research and assignments.

Social networks can increase student enrollment by facilitating communication between students and teachers (Alhumaid, 2020). Admittedly, social networks encourage students to ask questions and be creative through new technologies. Social networks can increase student enrollment by facilitating communication between students and teachers (Kulidtod and Pasagui, 2017). In other words, horizontal social networks foster communication between students and professors, being so that these are not limited to a specific field, since communication can occur with other institutions both nationally and internationally serving as a bridge for the exchange of ideas to strengthen disciplinary areas such as research.

That is, horizontal social networks have demonstrated the ability to create and share knowledge effectively among the hierarchies of an educational organizational structure providing competitive advantages. However, the key challenge is the processes that enable information gathering and how to make it accessible to others (Koranteng et al., 2019). To conclude, a horizontal social networking platform refers to a website, blog, chat room, software, or any content-based communication medium that makes it possible for users to share information and express their ideas. Learning-oriented social networking sites constitute a grouping of channels and services specifically designed for a defined purpose, focused on facilitating the learning process (Muftah, 2022).

Horizontal social networks in education

Social networks make up a group of highly effective technological tools in educational environments, since they provide communication and collaboration benefits in an interconnected way with other users, offering support in collective work in a substantial way. Education has become dependent on technology, as it suggests significant advances in the way of linking knowledge through teaching and learning.

Likewise, social networks have the capacity to transmit new knowledge and teachings to students in a dynamic way, from where the development of skills, abilities and aptitudes starts, to cope with team work in a simple way, and at the same time providing fluid communication (Jaimes-Barrera et al., 2021). In this way, horizontal social networks offer spaces for the expression of ideas that involve students' creativity and bring about the exchange of ideas and projections of future research, i.e., they strengthen confidence and the development of critical thinking (González, 2023).

Within this context, these tools provide opportunities for the development of active participation, personalized learning and enriching educational experiences. In the academic world, interactive learning and collaboration are fundamental factors for building a dynamic and enriching educational climate (Mejía and Kurita, 2023). Similarly, social networks in face-to-face environments have become allies in the dissemination of knowledge, dissemination of information, exchange of experiences (Gil-Fernández et al., 2019).

Since, social networks grant benefits that in turn enhance learning processes it is important to assume that these technologies are evolving in an unimaginable way, managing to have a role in society, having as a result that the vast majority of students are immersed in this type of tools (López-Belmonte et al., 2020). Given that, in the field of education, social networks have become a strategic tool for interaction between teachers and students during academic training

processes. This is achieved through the use of various applications that facilitate the development of activities (Suárez and Soracá, 2020).

The rise of horizontal social networking platforms has generated diverse online communication spaces, exemplified by Facebook and Twitter, where people can access and share a variety of resources (Rehm et al, 2021). In addition, an expanding body of research indicates that education professionals employ social networks, such as Twitter, to access and share information that helps them, as well as others, when dealing with everyday challenges. As social networks are incorporated into educators' immediate personal and professional environments, opportunities arise to make connections with others, share information, resources, and knowledge, fostering meaningful reflective processes, thus shaping a space full of social opportunities (Rehm et al, 2021).

Main Objective

The following research reveals the impact generated by horizontal social networks from the perspective of university students. Also, to investigate the forms of collaboration and communication that contribute to the process of training and academic performance, as well as their frequent use.

Research question

From the above, the following research question is specified What kind of contributions do horizontal social networks offer associated to the formation and performance of the university student with their frequent use?

Methodology

The work was carried out through a quantitative approach, that is, it uses the observation of the object of study, performs measurements based on statistical processes on its particularities and tests the data collected to generalize its results devoid of subjectivity (Universidad de Chimborazo, 2022). To determine the sample, we resorted to non-probabilistic convenience sampling, with this type of technique the sample units are selected according to the convenience or accessibility of the researcher (Tamayo, 2001), determining a sample of 100 students.

Data processing

The SPSS statistical program was used to process the information, where the information was processed in frequency tables, and in this way a statistical summary is presented.

Results

The following is the statistical data on the impact and use of social networks among university students.

How many hours do you connect to horizontal social networks during the week? 13% connect less than one hour, 40% between one and two hours, 28% from three to five hours, 13% from five to eight hours and 6% do not know how many hours they connect during the week (Table 1).

Table 1. How many hours do you connect to horizontal social networks during the week?

	Percentage	Mean	Dev. Typical
Less than 1 hr.	13%		
Between 1 and 2 hrs.	40%		
From 3 to 5 hrs.	28%	2.59	1.065
From 5 to 8 hrs.	13%		
Does not know	6%		

Note: with respect to the mean, it indicates that, on average, the student spends about 2.59 hours connected to social networks each week. The standard deviation suggests that the hours of connection to social networks tend to vary around 1.065 hours with respect to the mean.

Which horizontal social networks do you consistently connect to, 83% connect to Facebook, 7% YouTube, 1% Instagram, 4% WhatsApp, 5% connect to other type of social network (Table 2).

Table 2. To which horizontal social networks do you constantly connect?

	Percentage	Mean	Dev. Typical
Facebook	83%		
YouTube	7%		
Instagram	1%	1.85	2.022
WhatsApp	4%		
Other	5%		

Note: the student has a constant average connection to 1.85 social networks, but there is considerable variability in this frequency, with a standard deviation of 2.022. This indicates that the number of social networks to which he/she consistently connects can change significantly compared to the mean.

Do you use the communication services offered by horizontal social networks (chats, forums, instant messaging, etc.), 13% have never used messaging services, 34% occasionally, 27% constantly, 26% very constantly (Table 3).

Table 3. Do you use the communication services offered by horizontal social networks?

	Percentage	Mean	Dev. Typical
Never	13%	2.66	1.007

Occasionally	34%
Constantly	27%
Very Constant	26%

Note: the student tends to use, on average, the communication services offered by social networks about 2.66 times. Moreover, the variability in this behavior is moderate, since the standard deviation is relatively low.

What do horizontal social networks contribute to your academic training process? 28% of the responses say that they contribute information, 37% knowledge, 25% have ease of learning and 10% state that they have another type of contribution to their academic training (Table 4).

Table 4. What do horizontal social networks contribute to your academic training process?

	Percentage	Mean	Dev. Typical
Information	28%		
Knowledge	37%		
Ease of learning	25%	2.17	.954
Other	10%		

Note: the student perceives that social networks contribute modestly to their academic formation process, with 2.17 being the average rating given by the person. The relatively low standard deviation indicates that there is some consistency in the responses, but there is still some variability in perceptions.

How essential are horizontal social networks in your academic performance, 8% indicate that social networks are not essential in their academic performance, 6% are not very essential, 50% are essential, 36% are very essential (Table 5).

Table 5. How essential are horizontal social networks in your academic performance?

	Percentage	Mean	Dev. Typical
Nothing essential	8%		
Little essential	6%		
Essential	50%	3.14	.853
Very essential	36%		

Note: on average, the student perceives that social networks are moderately essential in their academic performance, with 3.14 being the average rating given by the person.

Discussion

It can be inferred that the results obtained show that horizontal social networks have a positive impact on educational academic development, i.e., this type of digital tools help to increase the opportunities to promote students' knowledge. Therefore, it is known that the average connection to these social networks is around 2.59 hours, which means that students are connected between

one and two hours (40%) a week, in turn, the vast majority is connected to the following social networks, Facebook (83%), YouTube (7%) and WhatsApp (4%), indicating that these people perform school or recreational activities. Similarly, students use services offered by instant messaging social networks occasionally (34%), which allows them to be in communication with teachers and classmates for information consultation or feedback in the subjects.

Similarly, it is understood that horizontal social networks provide benefits to the academic training of students, which, based on the research question posed: What kind of contributions do horizontal social networks offer associated with the training and performance of university students with their frequent use? it is derived that knowledge (37%), diverse information found in social networks (28%) and ease of learning (25%), gives an affirmative answer, since horizontal social networks have a positive and influential impact on university students, which manages to link certain important aspects in learning.

Therefore, horizontal social networks are perceived as essential tools (50%), since they are considered daily use technologies that accompany students during their academic process and performance, certainly, they can help in people's lives if they are used responsibly, since they are great allies in the educational and social field, which provide a lot of information, knowledge, teaching, learning, etc., achieving a link with the current education of students and being able to be interconnected to a world increasingly globalized by technology. Indeed, horizontal social networking platforms are designed with the purpose of promoting the exchange and generation of knowledge, which is extremely beneficial in the context of higher education.

In short, these networks play an essential role both in the educational environment and in the daily lives of students. Thanks to these platforms, the process of acquiring information, sharing data and maintaining communication has become simpler and more accessible. Both teachers and students can make use of these networks to establish connections and enrich their learning in a collaborative manner (Sivakumar, 2020).

Conclusion

Consequently, it is understood that technologies participate actively in the education of students, being also of great support for teachers of all universities, with the advent of these tools it has been possible to have significant advances in educational fields, as they facilitate collaborative work between students and teachers. It is necessary to state that current actions lead to a technological update in order to maintain stable levels of teaching and learning, with the use of horizontal social networks, education advances significantly in the development of a good education, which at the same time helps students to discover new paths and to build a future that generates new opportunities.

It is necessary to admit that the most active horizontal social networks such as Facebook, YouTube, WhatsApp and others, help directly to the understanding and search for information, sharing knowledge and strategies to solve the different activities required by the subjects and educational programs, developing new skills among students and being in constant communication. For this reason, undertaking in horizontal social networks is a path that leaves a digital footprint that will be present in all people, who will continue to take advantage of the services that these generate to have a transformation towards technological literacy and the discovery of new paths within the computer network.

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