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Health professors and students' perception about Google Classroom in higher education

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ABSTRACT

This research is carried out with the purpose of analyze Google Classroom through remote education from health professors and students' perception at a university in Cusco.   From this perception, it is evident how the platform is applied, the interrelation between teachers and students, as well as the benefits and barriers that have arisen throughout their educational experiences. This study has a qualitative approach with a hermeneutic phenomenological design with the intervention of ten informants: 8 students and 2 teachers from a clinical area of health sciences. The results showed that Google Classroom constitutes a necessary alternative for remote education. Tutoring is not properly governed as in the face-to-face modality but monitoring by teachers is constant and permanent. They also specified that the Google Classroom has many benefits for distance education, especially for theoretical courses, but that it is not for practical clinical courses in the health area, since the healthcare part is essential, concluding that, due to its benefits, it facilitates the development of education and achieves theoretical skills, but not clinical skills.

Keywords: *Google Classroom; clinical practice competences; higher education*
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INTRODUCTION

The health emergency of recent times has altered all social, economic and productive sectors worldwide, mainly affecting education (Paredes-Chacín et al., 2020). UNESCO (2020), mentions that several countries in Latin America and the Caribbean have reached high numbers of students affected by not continuing their studies because of the pandemic, among which stand out are the countries of Brazil with 8,400,000 students, followed by Mexico with 4,430,000 students, Colombia with more than 2,000,000, as well as Peru and Chile with more than 1,000,000 each.

It is not the first time that humanity has faced a pandemic like COVID-19, (Aquino and Medina, 2020), however, it has not been prepared to face it. Which has affected in the different daily areas and even more in education, being forced to virtualize teaching in a hasty way and higher education has not been the exception, so it had to adapt to teaching with the use of a variety of technological tools. In this regard, Pastran, (2020); Mahdy (2020) refer to the benefit offered by the use of these as an alternative, as it is a means for the teaching-learning process of higher education as face-to-face classes have been suspended and digital systems have had to be used so as not to leave aside the attention of the university population.

The implementation of virtual and distance learning has caused a challenge for university authorities, teachers and students for adaptability in this type of teaching, evaluating and solving all the details that technology may interfere with the correct use of it. Teaching in higher education has taken a completely different direction thanks to technology, which has been empowering education in a more accelerated, innovative way and above all the broad technological and digital market (Del Pino, 2018).

For Car et al., (2020) indicate that the use of electronic elements has increased exponentially in recent times and in all specialties. Likewise, Zitzmann et al., (2020) mention that the participation of teachers has greatly contributed to this virtualization process, by motivating and stimulating students 24 hours a day, despite the fact that many of them have not been updated or trained for educational reform through digital platforms.

Deadman (2018) argues that the continuous presence of teachers on virtual platforms is essential for the best development and accompaniment of students, not only in class hours but also monitoring at all times the activities they must develop to improve their academic performance.

In some Latin American countries, those responsible for regulating higher education had to establish provisions, as is the case of Peru (SUNEDU, 2020) it is regulated that for the modality of distance or non-face-to-face learning as a result of the latest health events, the use of virtual environments such as platforms must be mandatory, adapted and compatible with the contents, competences, methodologies, form of evaluation and the modality of each academic program in university higher education. In this sense, many students have been harmed because they did not have the necessary tools or optimal connectivity for digital communications. Given this situation and to counteract this problem, the Ministry of Education of Peru (MINEDU, 2020), provided a total of 91,102 chips that allowed access to the internet, which were distributed in public universities in Lima and provinces.

According to the INEI (2020), at the national level only 54.7% of older students have access to the internet, with an increase in the use of it in four points in urban areas, in rural areas the use of technologies rose by 17.4%. 79.6% make use of virtual tools through a cell phone and 88% of higher education requires digital devices: computers, laptops, tablets, etc. However, despite this, this entity indicates that university dropout reached 18.6% for not having digital tools and not being able to continue with studies virtually.

But not only the issue of connectivity and technological tools has been a limitation for higher education but also the performance of teachers, evidencing difficulties and shortcomings in the process of adaptation to virtual teaching due to the abrupt change to transform the teaching process from face-to-face teaching to online remote education in virtual learning environments, (Tito-Huamaní et al., 2022).

Therefore, the general objective of this article is to analyze the use of the Google Classroom platform in the course of remote education from the perception of students and teachers in the health area in a university institution in Cusco. And, as specific objectives: to know the reflection of students and teachers on the technological tools and the functions generated by each of them, to know the teacher-student interrelation through this platform and to identify the benefits and barriers that were presented to them throughout this virtual teaching process for the achievement of their clinical practical competences by referring to A professional school of health sciences.

METHODOLOGY

The study corresponds to a qualitative approach with phenomenological design and hermeneutical analysis, because it allowed to collect the information through an interpretative analysis (Quintana and Hermida, 2019) and understanding through the narratives of the informants who were part of this study respecting their own perceptions about the Google Classroom experience throughout their daily learning (Rodríguez, et al., 1996). That is why virtual interviews have been conducted (given the situation), prior to the acceptance of consent, and then collect information through semi-structured open questions, introducing each question one by one with total freedom to obtain more information (Hernández et al., 2014) on the use of Google Classroom in higher education.

The validation of the interview guide was evaluated by two experts in the field, who verified the statements of the questions, that they have coherence, clarity, conciseness, as well as are understandable to the informants (Skjong and Wentworht, 2001) and was linked to the objectives of the study. In addition, that these were related to the development processes of clinical courses through the Google Classroom

platform that began to be used for the purposes of confinement due to the pandemic.

Participants

Students and teachers from a professional health school of a university in the city of Cusco in Peru were part of the study (for reasons of confidentiality the name of the institution will not be mentioned). For the participation of the informants, only students who redirected remote education and who are trained in the use of virtual environments forhigher education of professional schools that had suspended clinical practices were considered. due to the effect of the pandemic. Remaining as part of the study 10 participants, of them eight were students (8) and two were teachers (2) of the 9th semester, being female 6 and male 4 students.

RESULTS AND DISCUSSION

According to the answers obtained from the interviews conducted with students and teachers, the categories were analyzed, which emerged from the interview guide used in the study. In this sense, higher education learning was determined as the main category through the Google Classroom platform and, through this virtual teaching methodology, three subcategories were obtained, as shown in figure 1, which are: the technological application in which the respondents mentioned their feelings about the platform, its tools and the functions generated by each of them; Continuing with the guide, a second subcategory was obtained. that includes the interrelation of the teacher and student and a third and last subcategory in which they referred to the benefits and barriers that the platform could grant them at the end of the course for the achievement of their clinical practical competences for being a school of health sciences.
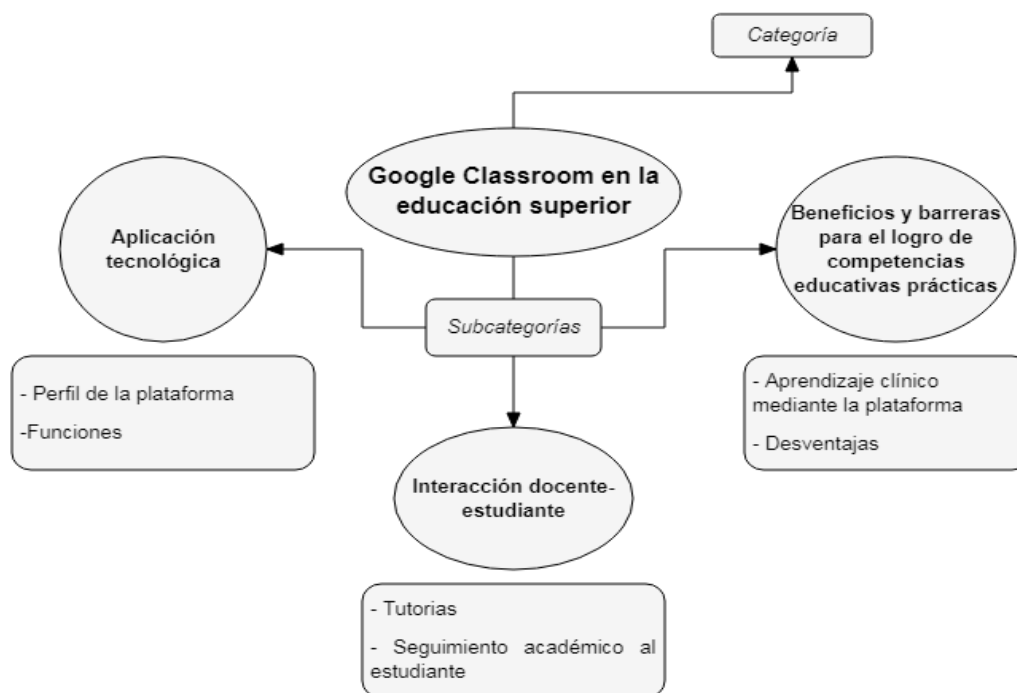
FIGURE 1: Categorization and subcategorizations of Google Classroom in higher education.

Source: Respondents' responses to the interview.

Technological application

Digital tools such as application through procedures demonstrate better skills development thaninal and cognitive attitudes (Rivera, 2020); Multiple intelligences through technological applications present a positive approach, thus achieving greater values in the development of competencies in the cognitive, procedural and attitudinal areas. Universities, in higher education, are responsible for managing virtual higher education, and this they do, according to Nair (2017) through learning management systems. Oneof the most used systems is the Google Classroom tool, which favors pedagogically satisfactory learning and, to which one informant mentioned: "I would recommend this platform for all the specifications it has. It helps a lot for academic continuity" (Est. 7).

As a result of the pandemic, Google Classroom has aroused interest for many educational institutions capable of improving teaching processes both synchronously and asynchronously, making it a definitive solution avoiding the interruption of the teaching process at all levels, Kraus, Formichella, & Alderete (2019). Therefore, the approach to learning through this tool is part of an ideal strategy that uses technology to facilitate those involved in the development of virtual teaching. In this regard, the respondents expressed their opinion about the Google Classroom and their experiences during its remote learning. "At first it seemed strange to me and I was not used to talking on a computer, but then I adapted, I think it is a new platform that has a lot to discover and something new always attracts people" (Est. 8). "I like it because of the time. You no longer have to go to college, but it is within reach at any time" (Est. 4). The Google Classroom platform is a virtual alternative for education that originated in 2014 as a learning management system, as indicated by Dash (2019) being a basic and easy-to-use platform especially for educational environments. "I knew this platform when I was in the 2nd semester and we used it to give exams, even so, it seemed strange to me to do virtual classes, I did not have the confidence that they would listen to me, but then I gained confidence in it" (Est. 7). "At the beginning, I did not know about this, it has been new, but I have been able to adapt to this platform" (Est. 3).

"In circumstances in which we are forced to change the teaching methodology and by the current modernity of technology it was more than evident that we had to enter these technologies and even more to this Google Classroom platform. It is something new to us, but it is our reality" (Est. 8).

However, technological tools must be optimal in the production of your digital materials, and not only with the number of services you can offer, as mentioned by Ferrari et al., (2020). Thus, some informants mentioned that: "It is the most orderly way to present the information for the student, as well as for the teacher that allows him to continue with his teaching work and achieve student learning" (Doc. 1). " Years ago they gave us the institutional emails through which I had to know the platform, but I had no interest and I only used it in a 4th semester course and later because of the pandemic I was only more interested" (Est. 6). "It seems to me a friendly platform and good coexistence between colleagues. It allows them to meet at any time to do group work, to re-see the topics developed in classes and also because they have the complete information from the first day of classes and can see it at any time" (Doc. 2). "For me this is a good platform, I have known of other universities that use different platforms, but I am used to this platform since I have been a good time and the good thing is that it is an easy to use platform" (Est. 1). "It's a very intuitive platform, it helps you organize jobs (Est. 6).

Google Classroom is developed to make it easier for teachers to organize their activities and promote constant communication with students, whether synchronously or asynchronously depending on the form of face-to-face or distance learning. In addition, it has many amenities, as mentioned by Sudarsana (2019), this platform has a storage drive so that both teachers and students can store their documents in the electronic cloud and be able to open the information at any time without worrying about loss of documents, likewise, it has the tool Google Doc, which allows the use of various formats for documents. Sheets and Slides: specifically for class preparation and motivation

for learning. Aspects that coincide with the respondents: "I know that within the platform there are tools such as Google Drive, Google forms to take questionnaires, spreadsheets, and especially the drive where all your information worked within the platform is automatically stored" (Est. 4). Italso has sub-tools such as Google Drive, Google docs and Gmail that facilitate the order and sequence of topics in the content (Tarango, 2019). One of the informants as a teacher mentioned "I have been learning along the way, and now I can define that I mainly use Google meet for classes or videoconferences, the Google drive where everything is stored automatically and that is very good. This does not erase what is being developed, the Google forms through which I can make questionnaires for students. The spreadsheets also help me to work it as Excel format, the presentations in PPT are very good, although a little limited for the elaboration "(Doc. 2).

The Google Classroom tool offers different materials and strategies to use for each pedagogical course; Knowingthe use of the platform achieves encouragement in students. These didactic strategies increase and produce favorable effects on the development of competences, as well as thinking instudents before university (Oseda et al. , 2020). Likewise, the informants affirm: "I really like the Drive to store information, the Jamboard to work dynamically and together with the students, the Mail to exchange information, the Calendar to schedule the activities, the Classroom to order the virtual classes, the forms to take the exams and the meet for the teleconferences " (Doc. 1). Therefore, this platform brings together a series of didactic tools that facilitate the development of learning. "It is a very intuitive platform, it helps you organize jobs, I know there is Google calendar but I still do not know how to use them" (Est. 6). "The only thing I would like is to allow you to upload heavier files because sometimes we can't do it, we have to shorten video times or reduce extensive work" (Est. 1), table 1 shows a summary of the most used tools according to the opinion of the informants.

TABLE 1: Google Classroom tools most used according to teachers and students

	NUMBER OF TEACHERS		NUMBER OF STUDENTS
Material	2	Tasks	8
Google drive	2	Questionnaire tasks	8
Google meet	2	Google drive	7
Task	2	Google meet	6
Questionnaire task	1	Material	6
Google mail	1	Question	4
Question	1		
Calendar	1		

Source: Data obtained from respondents according to the frequency of usefulness of Google Classroom.

Teacher-student interrelation

The Google Classroom can be effective for both students and teachers due to its characteristics such as the improvement in the quality of teaching, the internet is of unlimited use, a friendly environment is convenient and work time is saved (Tarango, 2019; Sudarsana et al., 2019), also mention that this platform even favors communication between students, teamwork and structured organization in a virtual way. Rahmad et al. , (2019) refer that this platform as a direct connection between receivers facilitates the interrelation between students and teachers, where both can place all their information, which are automatically saved in their drive. As some informants also said: "Some teachers do listen and do it with respect, but there are also teachers who do not agree with anything and only want us to comply with everything according to the established schedule, I think the teacher-student relationship is very important in this virtual context" (Est. 5). "Some teachers respectfully do motivate to use the platform, however, others just do the linear classes, give their classes and give homework and that's it. There is much limitation" (Est. 6). "What I felt is that respect always comes first" (Est. 8)

Delivering papers, automatic grading of exams and quizzes, automatic attendance control, has become the easiest way of virtual storage, as Nur et al. report. , (2019), preventing the loss of information and for it to be used again by users later. Unlike the opinion of some informants who, due to lack of training, have not felt motivated by their teachers when they used the platform. Even for teachers many of them did not know how to use, but then I hear: hey, interact with the teacher! and then we understand the platform better" (Est. 8). Other students commented that, "I do not have an advisor to guide me" (Est. 7), "personally I do not receive tutoring but I know that the teacher-student relationship would improve my learning process and respect among all, but sometimes I think that this system is very limited" (Est. 6), "other teachers do not support only focus on the course" (Est. 7). "You don't really have that warmth anymore when you're in contact with a physical person and you can tell your experiences more fluidly between teacher and student" (Est. 8). "A virtual platform will never be optimal for tutoring and teacher-student interaction 100%, I also feel that respect for the teacher is lost, even among us" (Est. 2), Figure 2 through the word cloud shows the terms used most frequently on teacher-student interaction according to the opinion of the informants.

FIGURE 2: Teacher-student relationship. Words most used in the interview by the informants.

Source: Authors.

This platform was used exclusively by those institutions that contracted the Google Suite package. For the year 2015, the version of iOS cell phones and Android system is created, as well as the programming interface with the applications to facilitate communication between teachers and students. However, its potential is maximized when used from a PC. In 2017 this tool was made available to the public. A Gmail account is enough to be able to join virtual classes or, on the contrary, create your own meetings or ideas(Ressler, 2017). Since then this platform has become of great importance thanks to the achievement of its specific functions to obtain an interactive communication and facilitate the tasks by sending and receiving the works for qualification within the determined deadlines. The informants also assert "The teachers sent us links for the classes and that if I was encouraged. For me it is a friendly platform" (Est. 3). Teachers can have a complete view on the progress of their students, and can give feedback to each of them (Rana & Mostafa, 2020). Not in all scenarios this conception is fulfilled, the informants of this institution affirm that, "It helps us to contact each other and interrelate with its limitations, but it is valid above all to exchange information" (Doc. 1). "Therelationship with teachers is always respectful, emotional, but the limitation of being able to appreciate body gestures I can not appreciate, and that is important because there is more advice when it is face-to-face and not by a computer" (Est. 6). "I try to establish a friendly and respectful relationship, unfortunately through a device it is difficult to know their concerns" (Doc. 2).

Not only a PC works in learning, but also cell phones, laptops, phones among others, which become essential for continuous academic follow-up. This is stated by Riofrío (2018) when mentioning that when teaching a course through a platform it is not an easy matter because you can not interact fluidly with students, but then you get used to it and look for strategies to reach them and you should take advantage of it because it is the new educational fashion and today students live in that digital world. Participation then becomes active and collaborative between teachers and students. "I have felt support from some teachers, the problem is that sometimes we are many and we cannot interact with all teachers as it was perhaps in the face-to-face mode" (Est. 1). "Once the principal observed that we were holding classes at another time and made a gesture that I did not like. I believe that respect is first and foremost for all teachers and students alike" (Est. 3).

Benefits and barriers of Google Classroom for the achievement of practical educational competencies

Campos et al. (2019) mention that the Google Classroom, as part of the Learning Management System (LMS) combines blended learning such as blended-learning, as well as distance education through the use of e-learning. For Latif (2016), another important factor of this platform is that it handles folders or allows teachers and students to maintain well-organized digital files, thus avoiding traditional paper, as indicated by two informants: "In my opinion it is one of the best platforms that fit the academic reality of higher education but it is not ideal since it still has to improve, such as the formation of groups for example and the sending to reduced groupsas in other platforms. I think the main tool is Google drive because they store all their work there. The meet is also important since the interaction and its participation are more fluid" (Doc. 2). "It is interesting how easy and simple to apply" (Est. 2).

To this Mohd et al. (2016) affirm that the Google Classroom is useful to facilitate teaching. The most important goal of teachers is to raise awareness among studentson how to use the various applications of this tool. This is how the informants mentioned at the end of the interview, referring to the benefits of this platform as well as some barriers that they perceived in its use at the end of their course. His answers were, "I like it for the time. You no longer have to go to university, but it is available at any time" (Est. 4) "it is easy and simple to apply" (Doc. 2) "from the place you are you can meet in a single session using the Google meet and you can have access at any time to the platform".
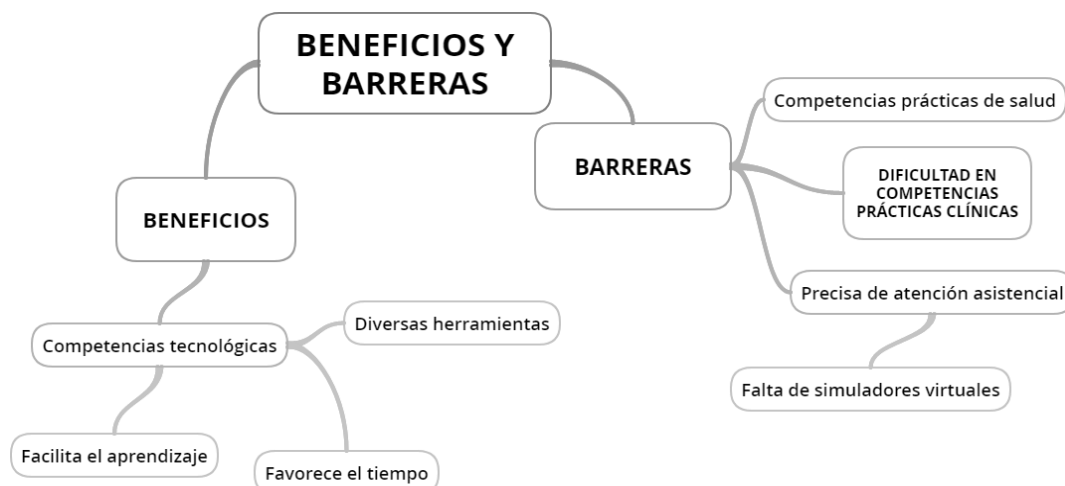

FIGURE 3: Benefits and barriers of Google Classroom in health practices.

Note. The figure shows the logical sequence of the benefits of Google Classroom, as well as; the barriers that are had for practices in the health area according to the informants.

Source: Authors.

For the achievement of learning, the informants agree that it is a good platform but that it is not for the clinical practical part: "as health students they need a face-to-face work field. Technology does not help in that aspect because students must work with the pain threshold for example and that cannot be controlled digitally" (Doc. 2). "It has nothing to do with whether the teaching is virtual or face-to-face, because it depends on each teacher how they carry it out. However, I view with great concern the practical learning of our career" (Est. 5) "... In the theoretical courses if it is efficient, doubts are absolved and the given problems are also solved. But in clinical courses like the ones we take, I still don't think you can compare a virtual class to a face-to-face one" (Est. 4). "For theoretical courses of virtual education yes, but for clinical practical courses and especially health does not correspond, even through simulators that do exist even in 3D but this will never replace the vital signs, feelings, emotions of the person. Let us remember that it is only a machine" (Doc. 3). "It does not allow us to teach practices or skills by limiting that competence" (Doc. 1).

In this understanding, virtual education through the use of Google Classroom has generated some barriers in its permanent use, especially in the fieldof research. This is signed by Quadri et al. (2017) that the barriers that have hindered teaching techniques in teachers, commonly known as: Obstacles or barriers of e-learning in relation to traditional learning, do not depend on the tools given, but on the way in which teachers and students use it in the course of the academic process and even more so if it is health practices. In this regard, the informants have referred that: "As for clinical practice it is not enough because we need practice in patients, I think that in that sense I am not achieving the correct learning" (Est. 3). "For theoretical courses if you learn, but not to do clinical practice, I do not feel very confidentin practicing a treatment on a patient without the supervision of the teacher" (Est. 5).

Learning management systems (LMS) should be used before virtual class sessions (Like, 2020), to facilitate the understanding of complicated explanations in the handling of the tool. Recesses during online classes should also be considered. Finally, Ramadhani et al. (2019) consider that one of the weaknesses for the use of this method is the lack of an online account or the lack of a device for each user. "It is difficult for me because I do not have the internet connection" (Est. 4). "The drawback is the cost of internet because we no longer have the modem that the university provided and I must constantly recharge" (Est. 4).

The lack of training for students is another barrier in the application of the platform (Octobertina & Muslimin, 2020), which has also been stated by four students: "I asked my classmates how the files were sent and above all I had problems with large videos". (Est. 3), "at first it was a bit difficult and I had no knowledge of its use" (Est. 5, male gender, year 9). "I knew this platform when I was in the 2nd semester and used to give exams" (Est. 7). "At the beginning I still had some mishaps, but not difficult, on the contrary, through virtual means you look for how it works and that helped me a lot. I listened before, but because of the pandemic I became more interested" (Est.8).

CONCLUSIONS

The virtual management system Google Classroom is considered as a remote learning platform created in 2014, the same that is being applied and potentially used in recent times as a result of the global pandemic in the educational field. Accepted by various higher education institutions for its outstanding organization and the inclusion of several tools, these have allowed the platform to store all the information and that it can be used at any time and place. It also allows to train and create different tasks for remote education in higher education.

For university students of health sciences consider this platform as very useful, especially for theoretical courses and that they can have access at any time without limitations. The informants of this study, although they recognize that the Google Classroom is an easy-to-use platform during the development of their theoretical learning, it is not so much to achieve their competences in the practical part since, as a school in the area of health, they refer in their great majority that they need the assistance and face-to-face part because they are courses of a purely clinical care practical nature .

The technological application of Google Classroom serves for the development of multiple intelligences through cognitive, procedural, attitudinal criteria. They consider a friendly platform and good coexistence between classmates, in addition to meeting at any time without the need to attend a classroom in person.

A main element for continuous learning is mentoring. Google Classroom can be used to conduct tutorials, but, from the student's perspective, they need the teacher to be able to perceive the feelings of the students in the clinical environment. This interaction also fosters the teacher-student relationship, encouraging motivation and respect between them.

The lack of teacher training in the use and application of the platform according to some students generates limitations in the teaching-learning process. Teachers consider that any relationship between teacher and student through the virtual form has taken greater interest in the concerns of each student and the confidence of being able to establish individualized communication.

The development of teaching through Google Classroom is part of an essential strategy of technological channels that helps both teachers and students mainly when education is not face-to-face. You know that there are several technological tools which are being used in recent times with greater success and included in their curricular plans.

Google Classroom considered as a learning management system for higher education, it is not for the development and academic procedure in practical teaching. Students in the health area need to perform the care part for patients, so the main disadvantage is the difficulty of achieving clinical competencies and, therefore, a decrease in clinical procedural skills.

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