

Remote Supervision in Times of Pandemic at the University Level Under the Systemic Approach

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Abstract—In this research work, the remote supervision of teachers is shown to be carried out within the framework of Covid-19 at the University of Sciences and Humanities, where full and part-time teachers and also students had training in the use of digital tools for the development of their digital skills and competencies. The soft systems and the Wilson methodologies were used with a systemic approach, based on its Maltese cross where information was obtained on the perception of the teaching-learning process in remote time by the student, teacher, assistant, coordinator of the area, teaching assistant who were directly involved in the supervision of remote classes. The research design is non-experimental, since the variable is not manipulated. In addition, the method is deductive, since it goes from the general to particular. The objective of the article is to make a proposal for continuous improvement in remote learning teaching in times of pandemic. The result obtained from the research was that remote supervision allowed the teaching-learning process to be improved by providing feedback on continuous improvement. It is concluded that the supervision of teachers requires teachers of full time, as well as more training in the use of digital tools, benefiting students from research.

Keywords—Covid-19, maltese cross, remote supervision, soft systems, systemic approach, university

1 Introduction

The coronavirus pandemic (COVID-19) has caused a preceding crisis in different human activities. In the educational field, it went from a traditional education to a remote classroom where universities had to adapt to this new context [1].

Likewise, remote work has been implemented in the university due to the time of the pandemic, however the connectivity of technological resources such as the internet has been a difficulty for many students and teachers, since cell phone use has increased exponentially in Peru; for remote classes data is necessarily required for Internet use [1].

In the distance teaching-learning process, remote supervision with teachers was emphasized, first of all the virtues were analyzed of the blended modality that the university currently has in order to use strategies in remote education and in that way all those involved in the university would benefit [2]. However, if there is no good remote teaching strategy, the consequences would be student desertion. That is why it is very important to train teachers in the use of technological tools and to do good planning in the monitoring of teachers [3]. In the coming months, the world will slowly begin to return to a new normal and communities will come to life where teachers and students will return in face-to-face, virtual or blended mode [4]. In addition, online learning has advantages and disadvantages, on the one hand, the advantage is that the student from anywhere can connect with their virtual classroom at the university and a disadvantage would be not having the technological resources for teaching learning in a way remote [5], where advanced learning skills and motivational strategies are required, for this, teachers must be trained in the use of digital tools to develop their digital skills [6].

Remote supervision with teachers who are from mathematics and natural sciences, in the latter who are from physics, chemistry and biology, the monitoring and control was more specific since it requires virtuality in teaching-learning, there was a certain limitation in monitoring since at a distance teaching his students with laboratory courses was different [7]. The remote supervision in the university in studies was carried out by doing the following procedure, first, a personal monitoring in the class sessions where it was taught 28 with virtual classrooms and the use of Moodle as an educational platform and the zoom videoconference tool. Later, it was observed that the teachers had difficulties in using these technological tools to carry out the training sessions. This can generate psychological and behavioral stress in the teachers [27][28]. Remote supervision consisted of the full-time teacher monitoring the classes, posting the incidents to provide feedback in a meeting that was convened to the teacher. The teacher made a continuous improvement with the suggestions given by the teacher. remote monitoring carried out and with the training [8]. The importance of research it is based on the implementation of new strategies for monitoring teachers in remote classes; since the strategy of remote classes is different from face-to-face classes.

The objective of the article is to carry out an analysis under the systemic approach, the remote supervision of teachers in the teaching-learning process to see their development of digital skills and the proper use of digital tools in the area of Mathematics and Natural Sciences from the University of Sciences and Humanities. The hypothesis of the research work is, with the remote supervision of the teachers in a strategic way, the teaching-learning process will improve through continuous improvement.

2 Literature review

The study in the literature review is systematic since it seeks to analyze, collect information in descriptive form on the teaching supervision that comes to make the object of study.

The systemic approach has its philosophical basis of holism, which is more than the sum of the parts, it is the integration of all the elements under study as a whole, and its

application in remote supervision is the teamwork of the members who supervise to teachers observing the problem in its entirety and not fragmented [9][10]. The soft systems methodology is based on the systemic approach with its established stages. This methodology analyzes the organization as a whole and the synergy between its components. The soft systems methodology allows to analyze organizations in general in an integrated way; this allowed to make an adequate strategy for remote supervision based on its established stages [11]. The remote class was applied in university education in order not to lose studies and it is through the remote supervision of teachers that it was applied to guarantee educational quality with the methodology of soft systems [12].

At the university level of education, it integrates teachers, students, employees who, when analyzing under the systemic approach, allow not to have a reductionist look that consists only of seeing the elements of a system in a fractional way and focusing a part of it in their analysis, but rather on the contrary, analyze the curriculum, the profile of the teacher and the student [13]. The remote supervision consists of monitoring and controlling for continuous improvement with feedback that is made with teachers in teaching-learning in times of pandemic, monitoring of teachers in their class session with their students depends on connectivity, teaching-learning strategy, the use of digital tools remotely [8].

3 Methodology

The research focus is qualitative, of level descriptive, with a systemic approach based on its philosophy of Holism. In addition, it is of non-experimental design since the variable is not manipulated. There is a Department of General Studies in the university, where one area is Mathematics and Natural Sciences comprised of 20 teachers, which is its population from that area. The criterion was to carry out the survey with all the teachers of the referred area, the sample being the total population. There are 45 General Studies teachers, this number will be omitted so as not to confuse since the entire population of Mathematics and Natural Sciences, which is 20, was surveyed. The clarification was made since a pilot was made with the entire mathematics and Natural Sciences flat in this period. In the research work, the Hybrid methodology composed of the soft systems methodology and that of Wilson was applied [14]; where each stage is explained below.

3.1 Unstructured situation

This stage includes the description of the problem and for this, talks, focus groups, interviews, surveys among others are carried out to know the problem under study [15].

3.2 Structured situation

This stage includes the identification of all the relevant actors and all of them are interrelated, such as people, infrastructure, materials, among others. The representation of all those involved is made through a graph called pictorial graph. In this stage 2 it is

based on two very important concepts such as holism, which means integral and synergy, which refers to the interrelation of its components as one, so it can be said that at this stage it allows to see how those involved are synergistically concatenated and in holistic way.

3.3 Basic definitions

After identifying those involved, each representative is interviewed in order to form the CATDWE, which is a mnemonic that explains what each letter means [12].

1. C: Client, the client is the one who benefits or is a victim of the problem under study.
2. A: Actor, transform the analyzed problem.
3. T: Transformation, it is the transformation of the current situation to the future.
4. D: Owner, has the power to open or close the system under study.
5. W: Weltanschauung, it is a German word that means conception of seeing the world, at this point the interviewee's opinion of the problem is seen.
6. E: environment, the environment is what affects the system under study directly or indirectly.

3.4 Conceptual models

In this stage, the activities to be carried out were able to transform each CATDWE from the previous stage. These activities start with infinitive verbs that are in the range of 5 to 9 activities. These activities allow the transformation of the present to the future. If there are n CATDWE there will be n conceptual models.

3.5 Confirmed and validated conceptual models

In this stage, all the activities of the previous stage were analyzed, where the related activities were grouped, the activities that did not add value were eliminated and activities can be added if necessary. This activity is validated with expert judgment.

3.6 Information category

All confirmed and validated activities carried out by expert judgment are placed in the information category. Information on inputs and outputs is then identified for each activity.

3.7 Maltese cross

At the Maltese Cross we work with quadrants where the north goes to the selected activities, in the south the information process procedure, in the east goes the information outputs and, in the West, the information inputs.

4 Case study

The research work was carried out at the University of Sciences and Humanities where the soft systems methodology was developed with the Wilson methodology step by step.

4.1 Unstructured situation

Teachers face challenges of thinking, designing and implementing virtual classes in record time, in conditions that are far from optimal and that in some cases they find themselves face to face with the fact that not everything is virtualizable [16]. This virtual experience leaves us reflections such as, for example, that it should not also be forgotten that one of the keys to digital transformation lies in the training of teachers in digital and didactic skills in online distance education modalities. These competences are also necessary in students, who must assume a greater degree of autonomy in their learning [17]. Although this may seem simple, it requires great efforts from both parties to be able to develop teaching and learning strategies according to this modality, very different when the classroom context is virtual and not physical [18]. Therefore, it is important to systematize the experience gained during this year 2020, to be able to rescue the achievements and be able to identify the limitations still to be resolved during this stage of experience.

In order to carry out this work of systematizing experiences, those involved in remote supervision of teachers in the area of mathematics and natural sciences. It had a follow-up schedule, in an Excel sheet where the most important information about the incidents found was stored for later in meetings with the supervised teachers, informing them on which points they can improve the teaching-learning process [19]. It means remaining committed to training human beings with critical thinking involved in the transformation of society, despite the increased inequalities in force in this context due to the pandemic and the digital divide, continuing to strive for a better quality of teaching and learning for training of a new human being [20].

In the research work to validate the questionnaire instrument, (see Table 1), expert judgment was made, which was 3 for the number of questions that are 5; Each expert places a score on each question from 0 to 100. The total result is obtained by dividing the sum of the percentage that is $450.9 / 5$ obtaining 90.18 as 75 is greater than the instrument is validated. When applying Cronbach's. Alpha, 0.79 was obtained, which indicates that the test is close to being reliable. At this point it was observed that the random variable that represents the results variable can approximate a normal distribution of the mean and standard deviation.

Table 1. Expert judgment

Question	Expert	Expert2	Expert3	Percent
1	92	88	90	90
2	90	86	92	89,3
3	88	90	89	89
4	94	90	92	92
5	90	90	92	90,6

Table 2. Questionnaire

Questions	
1	You consider Moodle as a suitable platform for virtual teaching?
2	Zoom video conferencing allowed him more interaction with students?
3	The trainings carried out during the semester met their expectations?
4	How would you rate your experience in terms of connectivity of both teachers and students?
5	Remote supervision has positively influenced their teaching-learning process?

4.2 Structured situation

In Figure 1, the interrelation of all the elements that make up the system under study is observed. The pictorial graph allowed us to have a holistic view of the behavior of the system [21].

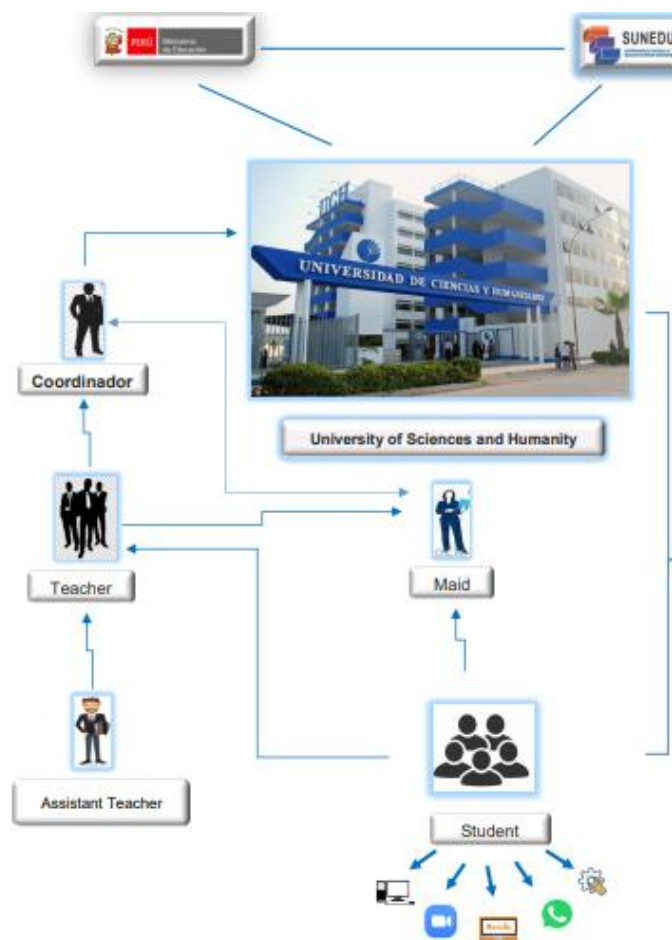


Fig. 1. Pictorial graphic

4.3 Basic definitions

W1: Teacher

1. C: Student.
2. A: Those responsible for training.
3. T: The transformation is shown in Figure 2.
4. D: Sunedu, ministry of education.
5. A: The pandemic has allowed the importance of virtuality where students and teachers learned more about ICTs where teachers based on training are gaining more experience.
6. E: University law, Sunedu.

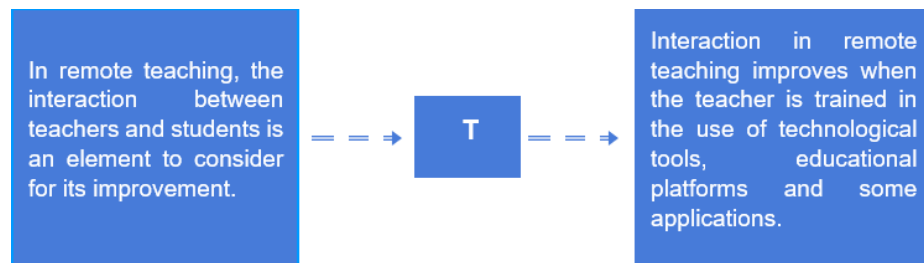


Fig. 2. Transformation by the teacher

W2: Maid

1. C: Students, teachers.
2. A: The Head of General Studies.
3. T: The transformation is shown in Figure 3.
4. D: Sunedu.
5. W: The pandemic has affected the entire country, virtual classrooms can be improved, where we are adapting to virtuality.
6. E: University law, Sunedu.

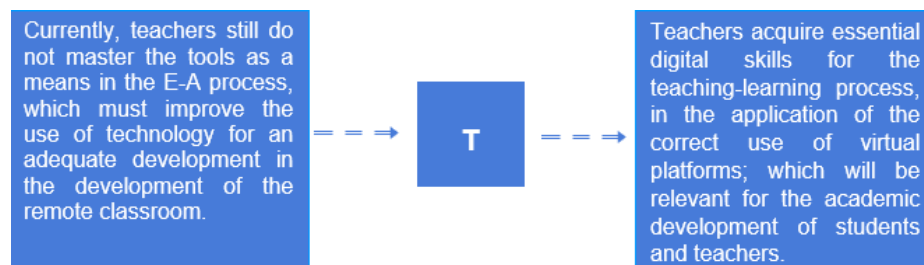


Fig. 3. Transformation by the maid

W3: Assistant teacher

1. C: Student, teacher.
2. A: The person in charge of General Studies, coordinator of the area.
3. T: The transformation is shown in Figure 4.
4. D: Sunedu.
5. W: Everyone has been affected by the economic factor, parents have been fired, students have also been affected.
6. E: Career offers.

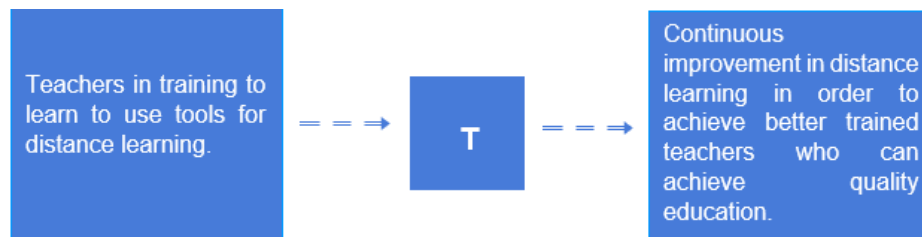


Fig. 4. Transformation by the teacher

W4: Area coordinator

1. C: Student, teacher.
2. A: The person in charge of General Studies.
3. T: The transformation is shown in Figure 5.
4. D: Minedu, congress, Sunedu.
5. W: In times of pandemic in Peru, it was observed that teachers are not trained to dictate at first, it accelerated and all teachers were generally trained in the use of zoom videoconference tools and Moodle educational platform.
6. E: University law, ICT providers.

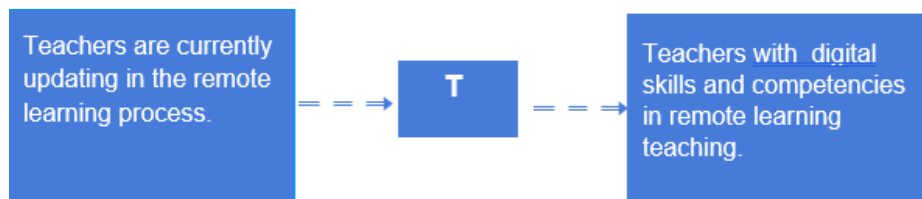


Fig. 5. Transformation by the area coordinator

W5: Students

1. C: Students, teachers.
2. A: Academic direction.
3. T: The transformation is shown in Figure 6.
4. D: College.
5. W: The University should frequently train its teachers in the use of digital tools so that students can quickly adapt to remote education.
6. E: University law, the government.

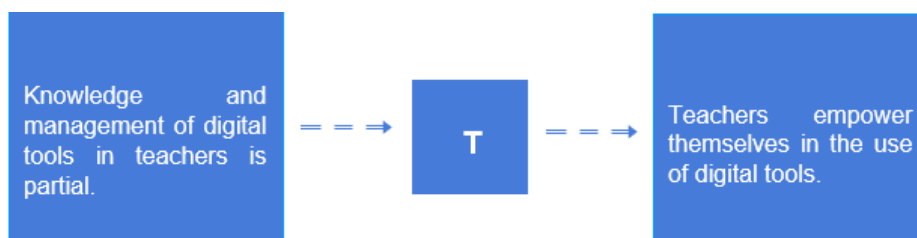


Fig. 6. Transformation by the Student

4.4 Conceptual models

In this stage, the activities carried out by those involved are carried out, in order to carry out the transformation shown in Figure 2, Figure 3, Figure 4, Figure 5 and Figure 6. The transformation is from a current situation to a future situation, where the activities must start with infinitive verbs at most 9 and at least 7 and thus achieve the objective that is the transformation of each basic definition from W1 to W5. One of the activities is mandatory, which is the control of the activities.

W1: Teacher. According to Figure 7, to improve interaction with students and therefore the teaching-learning process, it is necessary for teachers to be trained in the use of technological tools, to know some educational platforms, to use social networks such as WhatsApp and Telegram to create and organize students in groups and also free applications and software that allow greater interaction with students. For continuous improvement in remote teaching of teachers in training, it is necessary to design a teacher training plan, hold regular meetings with teachers, systematize their experiences, and carry out focus groups and surveys of students to collect their perceptions of remote teaching.

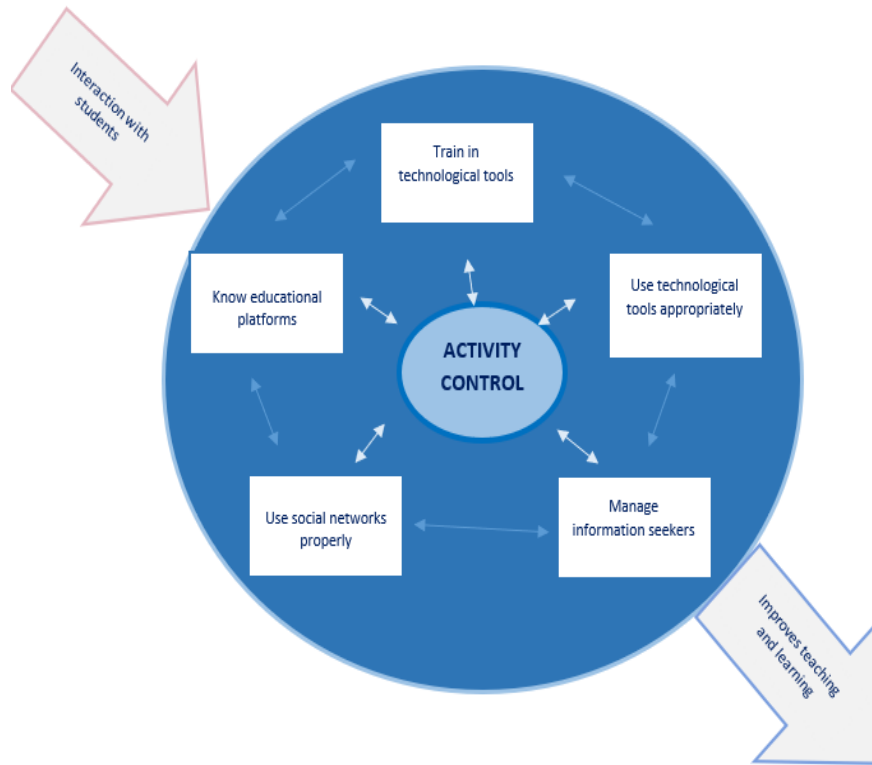


Fig. 7. Conceptual model of teachers

W2: Maid. In Figure 8, it is proposed to program training sessions for both students and teachers that guide them to the correct use of digital tools, in order to achieve quality remote learning, which is evidenced in the teaching-learning process; through the correct management of virtual platforms.

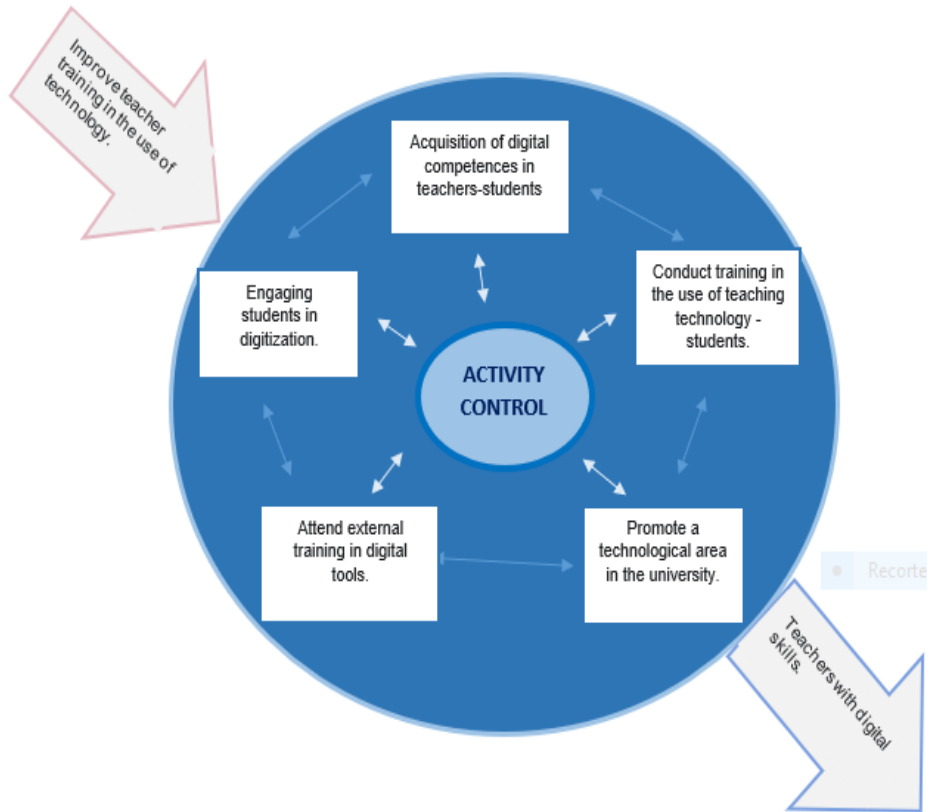


Fig. 8. Conceptual model of the maid

W3: Assistant teacher. According to Figure 9, for continuous improvement in remote teaching of teachers in training, it is necessary to design a teacher training plan, develop periodic meetings with teachers, systematize their experiences, and carry out focus groups and surveys to students to collect their perceptions of remote teaching.

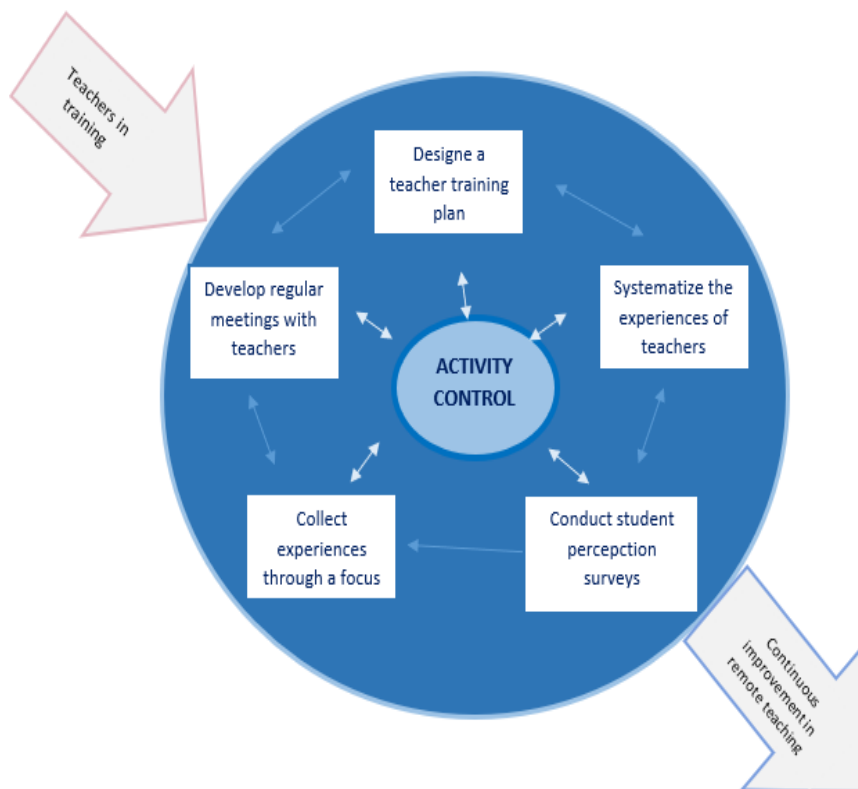


Fig. 9. Conceptual model of the assistant teacher

W4: Area coordinator. In Figure 10, activities are shown to carry out the transformation of the current situation in the future, such as training the teacher in the use of digital tools for this, a training plan must be made during the period, then a survey must be carried out to know the perception of the student and the teacher and then give feedback to carry out continuous improvement [22].

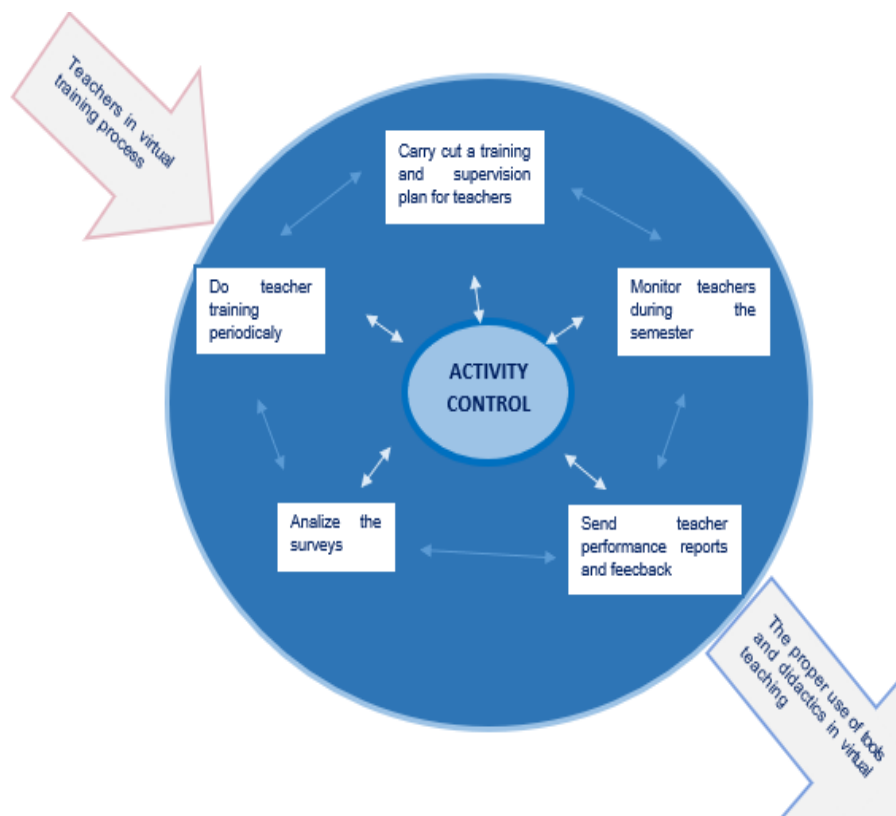


Fig. 10. Conceptual model of the area coordinator

W5: Students. Teachers must be more flexible with students since there is connectivity difficulty in a percentage of students, in turn it is required that the teacher be trained in the use of the Moodle tool and other tools used in the class session [23]. The teacher must know how to use the zoom since it is the videoconferencing tool used in all classes, as shown in Figure 11.

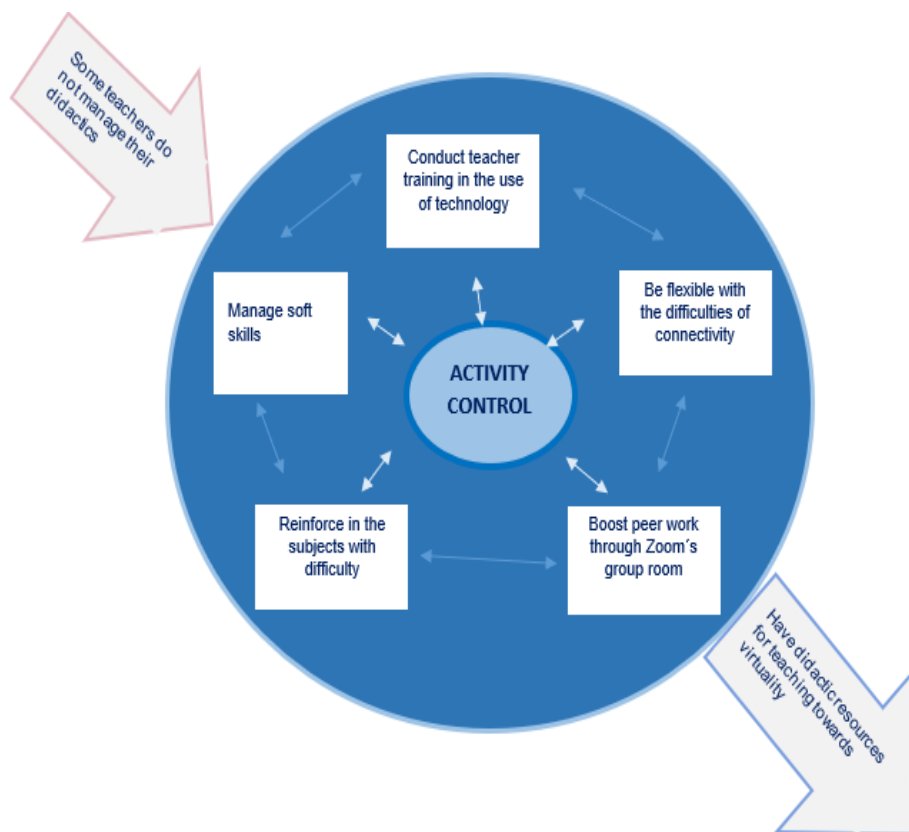


Fig. 11. Conceptual model of the student

4.5 Confirmed and validated conceptual models

Table 3. List of confirmed activities

Activities				
Activities	Remains	Group	Inserts	Remove
1. Train in technological tools.		A1		
2. Know educational platforms.		A4		
3. Use social networks properly.		A4		
4. Manage information seekers.		A4		
5. Use technological tools appropriately.		A4		
6. Acquisition of digital competences in teachers-students.		A2		
7. Engaging students in digitization.		A2		
8. Attend external training in digital tools.		A1		
9. Promote a technological area in the university.	remains			
10. Conduct training in the use of teaching technology - students.				remove

11. Designe a teacher training plan.		A1		
12. Develop regular meetings with teachers.		A1		
13. Collect experiences through a focus.		A3		
14. Conduct student perception surveys.		A3		
15. Systematize the experiences of teachers.	remains			
16. carry out a training and supervision plan for teachears	remains			
17. Do teacher training periodically.		A1		
18. Analyze the surveys.		A3		
19. Send teachear performance reports and feedback.	remains			
20. Monitor teachears during the semester.	Remains			
21. Conduct teacher training in the use of technology.		A1		
22 Manage soft skills.				remove
23. Reinforce in the subjects with difficulty.				remove
24. Boost peer work through Zoom group room.				remove
25. Be flexible with the difficulties of connectivity.				remove

5 Results

5.1 About the survey

Table 2 shows the 5 questions asked that we analyze their responses. The first 4 questions have as a choice of answers 3 alternatives that are: Good, regular, bad and the last question the answer is dichotomous yes, no. Regarding the first question, you consider Moodle as an adequate platform for virtual teaching? shown that 85% of teachers state the importance of using Moodle in times of pandemic since it allowed to interact with students in assignments, forums, files, among others and 15% answered regular.

In the second question, zoom video conferencing allow you more interaction with students? It shows that 75 % of teachers affirm that the use of Zoom video conferencing in times of pandemic was good, since it allowed them to interact with students dynamically with the use of zoom benefits such as forum, chat, screen sharing among others; however, 25 % said that lack of skill in using videoconferencing zoom.

In the third question, did the trainings carried out during the semester meet your expectations? 60% agree with the training sessions. However, there is 40% who say regular; what must be taken into account at this point is to carry out training periodically with the teachers' consultations on relevant topics. In the fourth question, how would you rate your experience in terms of the connection between teachers and students? 70% affirm that connectivity is adequate regularly, such as microphones, cameras, internet, among others, both for students and teachers in class sessions. However, there is 30% who say it is good; but this percentage is low; What should be done is for the government to support the use of adequate internet at a cost according to the needs that are being experienced in these times of pandemic and for the university to promote the use of Zoom and Moodle.

In the last question, has remote supervision had a positive influence on their teaching-learning process? 85% say yes and only 15% no. Therefore, we can say that teachers are satisfied with supervision as this allows for continuous improvement by making feedback.

5.2 Confirmed and validated activities

Table 3, shows the list of 25 activities; the criterion of grouping related activities was applied, as well as some activities remain, others are eliminated if they do not add value and some activities are inserted if their incorporation is important. This procedure is carried out with those involved and an expert in the field to be able to confirm how many activities remain, since the methodology recommends that the remaining activities must be in the minimum interval of 5 to maximum 9 activities. Table 3 briefly explains the ways in which the activities that are confirmed and validated in this way have been grouped and removed. In column of Table 3, the 9 confirmed activities that come from Table 4 are placed; in the second column the detail of the grouped activities is placed and in the third column the observation of the activities that have been removed is placed, to be later placed in a matrix called the information category matrix as shown in Figure 12. This category requires inputs of information inputs but also outputs of information after the activity is carried out, that is, each activity has its input and output of information that it requires when the activity is executed. An information output can be an input for another information activity, that is why in Figure 12 there are activities that are repeated and that is part of the analysis under study to identify anomalies in the information of the activities.

Table 4. Confirmed and validated activities

Activities			
ID	Activities	Details	Observation
01	Design a plan teacher training	grouping of activities 1,8,11, 12,17 and 21	Removed on 10, 22, 23, 24 and 25. Also no additional activity is inserted.
02	Evaluate competenciesdigital students and teachers	grouping of activities 6 and 7	
03	Conduct surveys and focus groups of teachers perception	grouping of activities 13, 14 and 18	
04	Properly use educational platforms and social networks	grouping of activities 2,3,4 and 5	
05	Promote a technological area in the university.	remains	
06	Systematize the experiences of teachers.	remains	
07	carry out a training and supervision plan for teachers	remains	
08	Send teacher performance reports and feedback.	remains	
09	Monitor teachers during the semester.	remains	

Activity	Design plan teacher training	Evaluate competencies digital students and teachers	Conduct surveys and focus groups of teachers perception	Properly use educational platforms and social networks	Promote technological area in the university	Systematize the experiences of teachers	Carry out a training and supervision plan to teacher	Send teacher performance report to provide feedback	Monitor teachers during the semester
INPUT	Survey on type of training	Teaching profile	Survey report	Teacher monitoring report	Plan for the technological area	Teaching profile	Teacher training diagnosis	Teacher monitoring	Incidence of teacher supervision
	Training report last semester teacher	Training report last semester teacher	Student data	Tutoring report		Report on teacher monitoring	Teaching profile	Incidence of teacher supervision	
		Zoom videoconference and moodle platform							
OUTPUT	Training report last semester teacher	Teaching profile	Focus groups report	Teacher monitoring report	Implementation of the technological area	Teaching profile	Teacher monitoring	continuous improvement	Teacher supervision report
	Teacher training plan	Survey report	Focus group recording	Tutoring report	Results report	Report on teacher monitoring	Teacher evaluation	Lessons learned report	Teacher evaluation
			Results report		Continuous improvement				Continuous improvement

Fig. 12. Information category

6 Discussions

In other research works such as [1] they concluded that teachers and students should be more updated with the use of different digital tools, if we compare it with our research work they coincide in some points, such as the digital skills that students must have. teachers to promote learning in teaching in times of pandemic [24]. What differs is that in our research work has been carried out with teacher supervision monitored by those involved, on the other hand, the research work that are comparing only focused on particularities such as elaboration of exam, use of the platform; On the other hand, in this paper a study was made with a holistic approach analyzing the whole and its parts where found strengths and weaknesses to carry out continuous improvement in the following semester to have a quality education where the teacher and students must develop their digital skills in time de pandemic. The professor had connectivity limitations, where he did not allow his academic work to be carried out in the normal way. That led to the teacher becoming stressed, resulting in psychological and behavioral problems. In the same sense, the authors [27], in their study, find that in times of pandemic they have psychological and social problems; coinciding with the research findings, in this way it can be said that the COVID -19 pandemic brings severe consequences such as phobia, stress among others, which may be the subject of other research.

6.1 Maltese cross analysis

Figure 13 shows four quadrants where in the east and west are the categories of information [25], where in the western part the input information category is located, which are the inputs and in the eastern part, the output information category is located that are the results after the activity is materialized and in the northern part the main

activities are located that were confirmed and validated by placing it from the bottom up and in the southern part is the information processing procedure (PPI) that can be automated or manual. After placing the categories of information and activities as well as the PPI, it will be analyzed by quadrants, taking into account the east, west, north cardinal points sur [26].

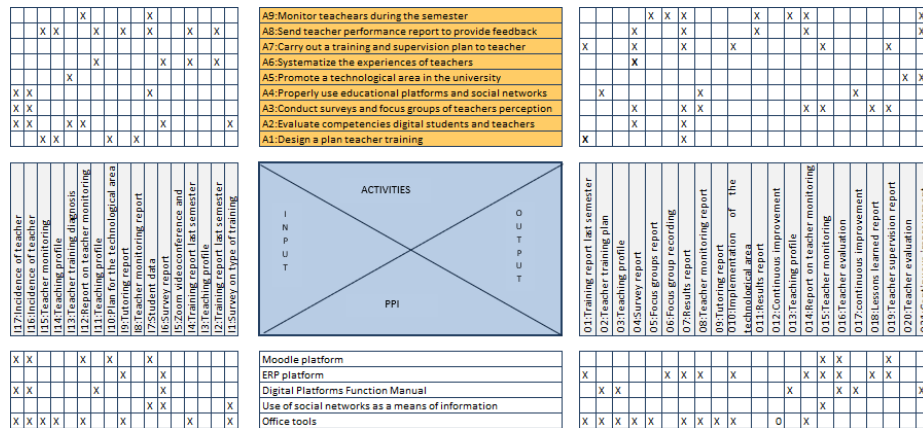


Fig. 13. Maltese cross

You can visualize four quadrants that, taking their counterclockwise direction, are north-east, north-west, south-east, south-west; with these four quadrants an analysis was carried out by combining them and 6 came out which are:

NorthEast vs NorthWest (NE VS NW). when analyzing this quadrant that is in the upper part, it is observed in the selected X that the inputs and products of each activity, the most prominent are the training of the teachers that they must have, having as inputs the training plan, resulting in student satisfaction in surveys.

NorthEast vs SouthEast (NE VS SE). when making the crossing of these 2 quadrants we observe that some information is being repeated, such as continuous improvement, In addition, the importance of the Moodle platform and the ERP (business resource planning) as a computer medium that allows monitoring of teachers as their teaching materials in Moodle as well as their evaluation system in ERP.

SouthWest vs SouthEast (SW VS SE). when analyzing these two quadrants, a limitation is observed due to the excessive use of office tools such as Excel and Word to monitor teachers and place daily incidents in classes, it should be automated, however there is progress with the use of ERP that integrates some processes in an automated way.

NorthWest vs SouthWest (NW VS SW). the input inputs such as training report and survey allow feedback on the digital competences of both teachers and students and thus in this way the manual of digital platforms is updated. However, the use of social networks should be optimized. use for academic purposes developing the communication protocol creating groups such as WhatsApp for student and teacher interaction in classrooms.

NorthEast vs SouthWest (NE VS SW). the analysis is through a diagonal that represents these 2 NE and SW quadrants, where the teacher monitoring activity during the semester is carried out with full-time teachers, then they send a report of the supervision in the virtual classrooms that are complemented by videoconference in Zoom and the Moodle platform. In addition, the systematization of the teachers' experience requires the training of all their teachers in the first place and this can be evaluated according to the report that is sent to the area coordinator and then carry out continuous improvement.

NorthWest vs SouthEast (NW VS SE). when analyzing the diagonal formed by the NW and SE, it was observed that the focus groups are very important because it allows the monitoring of the teachers to be carried out objectively since a battery of questions is made to the students by the tutor and then send the report to the area coordinator to analyze the points for improvement of the teachers.

Promote a technological area to carry out training with all teachers in the use of digital tools such as mental maps, conceptual maps, collaborative tools, evaluation tools, among others. By carrying out the analysis of the four quadrants, it allowed to draw conclusions regarding the main activities, taking into account what information is being duplicated and what information is of great importance and adds value to the activities.

One difficulty found in students and teachers is connectivity, since the use of the internet was unstable. but also, in the use of technological resources there was a limitation where most of the students communicated by cell phone with limited data load. As future work, a study should be done on the digital divide since it is related to connectivity such as the internet.

7 Conclusions

In the research work, it is concluded that the teachers after they have been supervised remotely must be at the forefront of the development of their digital skills in order to transmit knowledge to their students with the appropriate use of digital tools and applying didactic strategies in virtual teaching that is different from face-to-face, in that way the teaching-learning process will improve and thus the students benefit in this new way of teaching in times of pandemic. This analysis was carried out with a systemic approach involving students, coordinator, teacher, assistant Teacher, Maid, to do an adequate follow-up and thus obtain a quality education in the teachers of the area involved.

The contribution of the research work is the proposal of a new way of being able to supervise teachers in the remote modality. This could be concluded with the analysis of the systemic approach. Also, with the finding that teachers initially taught remote classes as if classes were face-to-face, applying the same methodology, technique and evaluation to students. This could be concluded with the analysis of the systemic approach. Also, with the finding that teachers initially taught remote classes as if classes were face-to-face, applying the same methodology, technique and evaluation to students.

The limitation of the research was the problem of the connectivity of teachers and also of students who were harmed in the teaching-learning process. In addition, the lack of use of management software limited teaching supervision since it is done with Excel since its inception at the university.

It is suggested that remote supervision be focused on dimensions, such as skills in the use of digital tools, virtual teaching strategy, teaching didactics, and learning evaluation methodology. In addition, a remote monitoring comparative study could also be conducted. between the modality of classes in classrooms, semi-presential and remote and irradiating to all the faculties.

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