

TEACHING USING SIMULATION AND BRAINSTORMING THROUGH TELECONFERENCING

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Abstract: Teaching using participatory techniques is more effective and promotes the interaction between teachers and learners. Through the tools of a teleconference platform, it is possible to use and exploit participatory experiential techniques. It is interesting to explore the utilization of simulation and brainstorming via teleconference platform in teacher training. The purpose of this paper is to study the use of participatory techniques and in particular the simulation and brainstorming of online training and education courses for trainers. Research results show that the use of participatory-experiential techniques such as simulation and brainstorming through teleconferencing can create interactive learning environments.

Key words: teleconferencing, participatory techniques, simulation, brainstorming.

VÝUKA S VYUŽITÍM SIMULACE A BRAINSTORMINGU PROSTŘEDNICTVÍM TELEKONFERENCÍ

Abstrakt: Výuka pomocí participativních technik je efektivnější a podporuje interakci mezi učiteli a studenty. Prostřednictvím nástrojů telekonferenční platformy je možné využívat participativní zážitkové techniky. Jako zajímavé se jeví především využití simulace a brainstormingu prostřednictvím telekonferenční platformy ve vzdělávání učitelů. Cílem tohoto příspěvku je výzkum využití participativních technik, zejména pak simulace a brainstormingu, v on-line vzdělávacích kurzech pro budoucí učitele. Výsledky výzkumu ukazují, že použití participativně-zážitkových technik, jako je simulace a brainstorming, prostřednictvím telekonferencí, může vytvořit vhodné interaktivní výukové prostředí.

Klíčová slova: telekonference, participativní techniky, simulace, brainstorming.

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1 Introduction

Distance education provides reliable and flexible curricula, as participants can participate in the course at their own pace and time (Carnevale, 2005). This flexibility facilitates university teachers and students in attending courses of this type, as they have the opportunity to adjust their participation according to their professional, academic and personal obligations (Armakolas, 2018). Teachers and learners in higher education develop their teaching and pedagogical skills and grow professionally by choosing their own place, time and pace of training. On this basis, it can be argued that already existed cognitive and social learning theories can be discussed in relation to distance learning (Kanellopoulos, Koutsouba & Giossos, 2020).

The advantages of using this form of education are many, since learning in a distance learning environment mitigates existing differences and provides equal learning opportunities to all regardless of their particular personal and social features (Lionarakis, 2006a, Armakolas, 2018). Educational environments should be such as to meet the learning needs of today's "internet generation" and utilize the multiple types of human intelligence (Ligoutsikou et al., 2015; Kanellopoulos, Koutsouba, 2017). In order for the contribution of distance education to be effective, new technologies must be used in a systematic and organized way to ensure the enhancement of open and lifelong learning in the context of a collective and assisted self-education (Scanlon et al., 2015; Kazana, Armakolas, Zotos, 2019).

For the successful implementation of online courses in the context of a wider training of teachers, it is necessary to meet appropriate pedagogical, social, administrative and technical requirements (Armakolas, Kazana & Mitroulia 2020). The purpose of this paper is to study the use of participatory techniques namely simulation and brainstorming in online training and instructor training courses via teleconferencing.

The educational utilization of teleconferencing can create new possibilities and contribute significantly to the development of the social skills of the participants, to the cultivation of the spirit of cooperation and to the active participation of the trainees. However, there is no corresponding study in the literature on the use

of modern participatory experiential techniques in remote environments using teleconferencing.

The research questions of this study were:

During the teleconference, interaction was created using experiential techniques between the participants?

What is the evaluation from the use of “brainstorming” through teleconferencing?

What is the valuation from the use of simulation via teleconferencing?

Was there satisfaction and reflection on achieving the goals of the unit through participation in the teleconferencing environment?

2.1 Literature review

Distance learning using teleconferencing can create a wide range of interactions that can take place between participants (Kanellopoulos, Koutsouba, & Giossos, 2020; Armakolas & Panagiotakopoulos, 2020). Therefore, the support of both the didactic and social interaction between participants is essential for creating a better and effective learning environment through teleconferencing (Panagiotakopoulos, Tsiatsos, Lionarakis, Tzanakos, 2013; Armakolas, Griva, Papathanasiou, 2020). In order for teleconferencing to be effective as a modern technological tool, it is necessary to develop interaction between learners-educational material, teacher-learners, between learners (Danesh, Bailey, & Whisenand, 2015; Armakolas, Panagiotakopoulos, Magkaki, 2018). Lawson & Comber (2014), as reported in Armakolas & Panagiotakopoulos, 2020) argue that video conferencing as a technological tool has several advantages:

- a) Exhibits greater interaction than many asynchronous technologies,
- b) It's a cost-effective way for educational institutions to provide successful learning experiences to a large population of learners,
- c) Increases motivation for learning,
- d) provides the opportunity to practice and improve communication and presentation skills,
- (e) Enhances the development of research activities as it facilitates cooperation,
- f) Allows access to primary material sources,
- g) Provides psychological support and encouragement to its users

In addition to the use and utilization of teleconferencing platform, teachers become familiar with a new learning environment and develop technical and

communication skills. In more detail, the following objectives are achieved (Lionarakis, 2006b; Zygouris, & Mavroidis, 2011; Katsika et al., 2019; Bei, Mavroidis & Giossos, 2020; Armakolas & Panagiotakopoulos, 2020):

- Familiarity with new technologies and their use for the acquisition of new knowledge,
- The cultivation of critical ability,
- The development of useful social skills such as communication, collaboration, active listening and team spirit,
- The promotion of self-efficacy.

2.2 Teleconferencing

Teleconferencing is an innovative teaching tool. Its effectiveness in education has been reflected in the findings of relevant research (Tomei, 2011; Panagiotakopoulos, 2014; Armakolas, Panagiotakopoulos, Magkaki, 2018; Karvounis & Anastasiadis, 2019; Armakolas & Panagiotakopoulos, 2020; Armakolas, Panagiotakopoulos & Karatrantou, 2021). The possibilities given to the users of the platform, among others, are to see and hear the other participants and discuss using personal or public text chat. By simulating an online classroom, the user of the platform can intervene by “raising” his virtual hand, thus informing the speaker that he would now like to express his point of view. Additionally, it can make use of the Whiteboard capabilities and sharing of computer desktop. The WebEx platform used is an online teleconferencing tool that offers users Web Conferencing capabilities using high quality video / audio. Through the platform, users have the possibility of a functional collaboration from a distance, increasing their productivity and reducing the cost of face-to-face meetings. It supports the possibility of sharing files with colleagues, without requiring complicated settings and configuration tool (Armakolas, Panagiotakopoulos, Fragkoulis, (2019). Connecting to a WebEx teleconferencing via internet requires:

- (a) Fixed network connection; and
- b) The ability to send / receive large volumes of data

For this reason, its use is not recommended through networks where volume charge applies (e.g. mobile telephony networks, depending on the contract / package).

General features of WebEx teleconferencing include the following:

- Scheduling an unlimited number of online meetings

- Share text, applications, streaming videos, and more
- File Transfer
- High resolution and quality video conferencing
- Automatic magnification of the speaker image, utilizing Active Speaker technology
- Possibility of granting presentation control to any participant
- Ability to customize the view (e.g. full-screen mode)
- “Video recording” of the meeting
- Operation on mobile devices (smartphones, tablets, etc.)
- Operation in Windows, Mac, Linux, Unix, Solaris, Android, IOS
- Real-time text messaging (Chat)
- Direct referendum and quiz
- Registration and monitoring of participants
- Integrated telephone communication support (via connection to the telecommunications infrastructure)

2.3 Participatory experiential techniques in a teleconferencing environment

The educational utilization of teleconferencing can create new possibilities and contribute significantly to the development of social skills of the participants, to the cultivation of a spirit of cooperation and to the active participation of the trainees in the learning process. According to the relevant literature for effective distance learning in adult groups, the following should be taken into account (Fragkoulis, Karatrantou, 2009; Panagiotakopoulos, Tsiatsos, Lionarakis, Tzanakos, 2013; Fragkoulis, Armakolas, 2019; Armakolas & Panagiotakopoulos, 2020):

- a) The definition of the educational purpose and the educational objectives with clarity and precision,
- b) Informing the participants about their obligations from their participation in the learning process,
- c) The shaping of the learning content according to the specifications of distance education,
- d) The implementation of the educational process in accordance with the principles of adult learning,
- e) The construction of the educational material according to the special characteristics, the requirements of the participants in the program and the specifications of the distance education. Effective learning consists in the presence

of the trainer as a facilitator in the production of new knowledge, as an equal member of the team and not as an authority (Fragkoulis & Anagnou, 2014).

The affability, emotional stability and the provision of assistance by the trainer seem to contribute to the learning process. The communication between the members of the educational team as well as the cooperation of its members have the same positive effect (Valkanos, Papavassiliou-Alexiou, & Fragkoulis, 2009; Kounenou, Roussos & Yotsidi, 2014; Kounenou, Roussos, Yotsidi, & Tountopoulou, 2015). Research findings in the field of adult education highlight the importance of using participatory experiential techniques in education (Fragkoulis & Karatrantou, 2009; Fragkoulis, Anagnou, 2014; Koutsoukos & Fragkoulis, 2016).

In particular, important appears to be the use of the above techniques in distance learning particularly in the context of teleconferencing. Through the utilization of participatory experiential techniques, the pre-existing experiences, the special characteristics, as well as the different learning styles of the trainees are utilized (Armakolas, Panagiotakopoulos & Karatrantou, 2018; Sidiropoulou & Mavroidis, 2019; Armakolas, Panagiotakopoulos & Fragkoulis, 2019; Armakolas, Griva & Papathanasiou, 2020).

2.4 Brainstorming

Brainstorming is an educational technique that consists of gathering and recording ideas that are spontaneously and unconsciously born to the learner after the submission of the topic. Any answer is considered useful and acceptable, so it should be recorded without criticism and comment. The answers should be short and immediate, so that there is no period that allows for special reflection and thought but is a product of direct association. The activation of the participation of the trainees is achieved through the use of questions, which are addressed to each person personally and which mobilize their emotions. At the end of the process the teacher takes into account all the ideas formulated, starting from those points which he deems most important or closest to his intended purpose. The whole process of questions, recording and reflection should be relatively short, so as not to cause too much relaxation in the rhythm of the classroom. Brainstorming is a very effective practice. On the one hand it allows the trainer to realize the level of the classroom, while at the same time the trainees themselves discover the unconsciously recorded knowledge, views and correlations. In addition, the high level of participation enhances the team's sense of solidarity. Brainstorming

is a very enjoyable technique and gives the educational process vitality. For this reason, it is suggested at the beginning of a didactic unit, but also at any time when there is a decrease in the interest of the trainees, or a problem is identified in the relationship between them (Courau, 2000, pp. 60–64; Frangkoulis & Frantzis, 2010; Frangkoulis & Christopoulos, 2014).

2.5 Simulation

The educational technique of simulation has the advantage that it allows the connection of education with professional life, which is why it is very often used in vocational education (Courau, 2000, p. 75). The trainees are involved with the simulation technique in a complex problem that concerns the field of their future professional employment. Simulation is a great exercise, in which learners mentally participate in the representation of a situation that corresponds to reality. They are called to understand how certain people would think and behave in specific circumstances (businessmen, employees, customers, citizens, engineers, etc.) and to react as if they were dealing with the same situations. With this penetration into the imaginary reality, the aim is to make the trainees able to understand more deeply its various aspects and to be able to behave effectively in similar circumstances. Therefore, the simulation is a training technique that resembles the role play, except that the students are not required to act in a theatrical manner, but to understand how those involved in this situation should behave. As in the practice of role-playing, it takes a lot of time to prepare the simulation, but also for the discussion that follows after its completion. In this phase the trainees reflect on the learning experience they have gained and crystallize some views (Kokkos, 1999; Frangkoulis & Frantzis, 2010; Frangkoulis & Christopoulos, 2014).

3 Method

The research project of this study utilized method and technique in the field of qualitative approaches. Qualitative methods help the researcher in trying to convey the subjects' experiences, but mainly to delve deeper into what they said and to reveal what their experiences meant (Paraskevopoulou-Kollia, 2019). For the needs of the research, the semi-structured interview was used, considering that it corresponds more to the communication with the respondent than to a structured model. The semi-structured interview is characterized by the existence of an

interview guide, but also by an important fact, that the purpose of the interview is localized, but without the subject being limited. At the same time, it gives the respondent the opportunity to present in his own language the type and nature of his experiences, as the one who asks (interviewer) and the respondent develop a relationship of communication between them, during which the former gathers from the latter those data provided by the research (Panagiotakopoulos, Sarris, 2015).

The researcher also participated as an observer in all teleconferences. The teleconference recording was used, thus enhancing the understanding and analysis of the information obtained from the questionnaire survey through analysis (Mertens, 2009). The observation was free, it was not done in a strict context and an attempt was made by the researcher not to prejudice the participants since they knew that the teleconference is recorded. However, the researcher kept notes on issues that the image could not capture in the subject concerned (Panagiotakopoulos, Sarris, 2015, p. 57), something which isn't easily accomplished to an extent by another method or data collecting means.

Based on the aforementioned semi-structured interview, a new focused interview was designed for five (5) experts in the field of distance adult education. The purpose of the interviews was, according to Cohen & Manion, (2000), to limit the discussion to specific parts of the respondents' experience. They have experienced similar specific situations and the answers better control the validity of the researcher's hypotheses. Also, the answers of the experts in combination with the analysis of the answers of the trainees give a more objective-rational approach to the research. The analysis of the content of the answers of the interview questions based on their matching with research questions. The aim was to enable participants to express comfortably and without pressure their views on the issues-questions asked to answer (Bogdan & Bilken, 1982; Panagiotakopoulos, Sarris, 2015).

In the present research, the semi-structured interview was used as a data collection tool. The specific research tool was chosen as it responds more to the communication with the respondent (Cohen & Manion, 2000; Panagiotakopoulos, Sarris, 2015). The researches of Panagiotakopoulos, Tsiatsos, Lionarakis, Tzanakos (2013), Armakolas, Panagiotakopoulos, Fragkoulis, (2019) were the starting point for the shaping of the interview axes in the present research. In addition, we took into account the references in the literature on the criteria for selecting participatory techniques, adapted to a teleconferencing environment (Vaikousi, et al., 2008; Frag-

koulis, Franzis, 2010; Koutsoukos, Fragkoulis, & Valkanos, 2015). The final configuration of the research tool emerged after conducting a pilot study with interviews with three students, users of the tool. A sample of nineteen (19) trainees was used to conduct the interviews. The interviews performed remotely (Paraskevopoulou-Kollias, 2019) and recorded. Additionally, held a teleconference trial in order to familiarize students with the use of the platform and its tools, as well as through the use of participatory experiential techniques. Five (5) hour teleconferences followed, utilizing the webEx platform for a total duration of 45 minutes each. In the context of teleconferencing, participatory experiential techniques were utilized, such as: brainstorming, and simulation. The selection of the specific participatory techniques was made in order to enhance the experiential, revealing learning of the participants. For the hourly teaching, a lesson implementation plan was structured according to the specifications of the form used by ASPAITE in the training programs of future teachers (PAD ASPAITE, 2017, www.aspete.gr) as follows:

	Teaching Phases	Time	Techniques	Means
1	Start, instructions	10 minutes	Proposition, Discussion	Transparency, Use chat
2	Presentation of lesson objectives, Introduction to the topic, Example based on theory	10 minutes	Brainstorming	Slides, Use table, use chat Video from youtube,
3	Participants are mentally involved in the representation of a situation that corresponds to reality through video. They are asked to submit their views through their teams on how they would think or behave if they faced similar situations. Given the opportunity to anyone to present his point of view Material processing	20 minutes	Simulation	use table, use chat
5	Composition, conclusions, Connection with the objectives of the course	5 minutes	Discussion	use table, use chat

Table 1: Teaching implementation

During the implementation of the project, an effort was made to apply the educational techniques with specific requirements:

1. The objectives of each technique should be clear,
2. The instructions should be clear,
3. There should be a climate of mutual trust between team members.
4. The course flow should be such as to cover all aspects of the subject under consideration,
5. Adhere to implementation timelines but have flexibility when needed,

6. There should be a time where the conclusions will emerge, and which will be linked to the objectives of the topic.

The five (5) hour duration teleconferences were held from 6–10 of April 2020

4 Results-Analysis

Students' responses were grouped, categorized, and analyzed according to researchers Bogdan & Bilken (1982). The following are the questions with the answers:

Regarding to the first research question:

The answers to the question were unanimously very positive. During the teleconference, an interaction was created between the participants: Indicatively some answers:

"Yes, initially in the form of jokes, particularly the exchange of views and questions-answers."

"After an initial and perhaps expected 'numbness' and with the constant encouragement of the trainer, I believe that there was finally, even an enthusiastic interaction between the participants."

"There was cooperation and interaction. The course was conducted properly, such as classical lessons."

"Yes. Everyone was involved. No fatigue or boredom was found."

"We worked together, we automatically organized ourselves in an effort to save time and act effectively."

"Yes, there was an interaction of the participants with chatting during it, and with the interruption of the teleconference to express questions, or even after the instructor's motivation."

From the answers of the participants in the research, it can be concluded that the teleconference favored good communication, cooperation and the willingness for interaction between the members of the group. Structured teaching contributed to the active participation of students. The constant encouragement and flexibility of the trainer contributed to this.

Regarding to the question: Were participatory – experiential techniques used during the teleconferences? If so, which:

The answers given by the participants in the research unanimously result in the use of participatory – experiential techniques. However, there is uncertainty about the type of technique used.

“Yes, yes we did an activity that was given to us.”

“I believe that teleconferencing is, or at least should be, intertwined with experiential training techniques. Those I participated in, included questions and answers, brainstorming, problem solving”.

“Yes, they were used.”

“Yes, the techniques of brainstorming, and simulation were used”.

“The simulation was used. We organized at different times. We worked as members individually. We announced our results in plenary”.

“Participatory – experiential techniques were used in the teleconferences. The techniques used were brainstorming and simulation.”

Fifteen of the sixteen students supported the degree of utilization of the simulation. Some answers regarding using the simulation can be summarized as follows:

“Yes, we did our own intervention in the overall approach. I think it was a satisfactory point. We all approached the video from a different perspective.”

“We were given time to better process the subject under study. We probably needed extra time. However, it greatly serves the distance learning process. In this way the trainer enhances the participation.”

“It's a very realistic way which gives some interest in the process. Linking learning with practice, which is a challenge for many of the participants in the training.”

“There was active participation of all the trainees during the teaching but also for the completion of the whole process. Action and gaining experience in the development of “real conditions”.

“The simulation serves both the teacher and the learner, because it increases the interest of both parties and the lesson becomes creative and not at all boring. It is remarkable how quickly “time passes” when such procedures take place.”

“Through it, the theatricality and the interpretation of each occasion are strengthened, always examining it from the other's position.”

Eleven of the sixteen students reported the following regarding the time of application of the simulation: *“It is more time consuming as a process and requires more*

preparation, but it gives the opportunity to a large number of trainees to come close to the under-examination situation and creates strong emotions.”

“It can be done under conditions.”

The students unanimously supported the degree of utilization of the brainstorming as participatory educational technique in the context of implementation of modern teleconferencing. The following are answers to the brainstorming session:

“The degree of sharing personal experience on the one hand can be diffusible and on the other hand, the common starting point for approaching new knowledge in the learning process becomes clear from the beginning ”.

“The focus of the learning process shifts from the teacher to the student, while the process proves to be more interesting, attractive and effective for both parties.”

“It is a good method for motivation and introduction to the topic that will lead to the organization of thought.”

“This technique helped in order to start a dialogue and to actively involve trainees.

It definitely contributes to the mobilization of interest and this was attempted to a fairly satisfactory degree.”

“It’s a very nice method that helps us to know each other, to grow as a team, to accept the diversity of others and to better know ourselves.” This technique has the following advantage: everyone, participants and trainers can develop / broaden their horizons on the questions asked.”

“It can be used quite effectively and efficiently because several people participate in the teleconference and opinions heard. With the brainstorming, a variety of thoughts are heard that are the trigger for the beginning of teaching.”

There was consensus in the responses of respondents in relation to the achievement of the objectives of the lesson through teleconference. Indicatively some answers:

“Yes, there was.”

“I think the objectives of the unit were achieved and surpassed, especially since for me it was very new experience on the educational process.”

“Yes, the lesson was done, just like the lessons were done at school. The objectives of the course were achieved. I was more pleased than I expected. ”

"I am quite satisfied with the teleconference and I believe that the goals of the unit I attended were achieved."

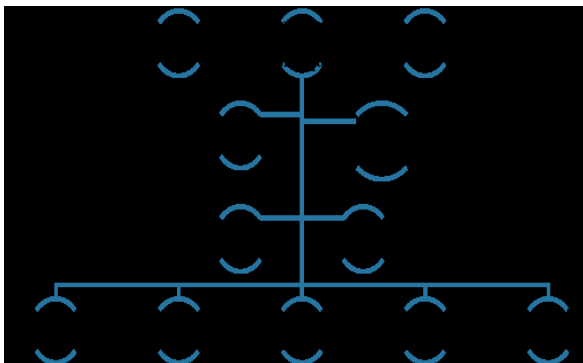
Regarding to the question: Was there an assessment of participation and reflection on the teaching unit selected through the assessment?

"Yes. *There was.*"

A first direct evaluation of the teleconference upon its completion, as well as a more detailed discussion (evaluation), at the next meeting of the group that participated in the process."

"Yes. During the teleconference, as trainees, we became more active, informed and cooperated (with each other) more than if we were limited to the traditional training methods."

"Due to the limited time of the teleconference, the measurement and evaluation were carried out in a second time."



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Through the tools of the platform given the possibility of using and utilizing participatory experiential techniques. It can create authentic interactive learning environments, provide equal opportunities for learners, contribute to the cultivation of critical thinking, and provide the conditions for further individual knowledge-seeking and personal development. It becomes interesting perspective to investigate the efficacy of such an environment and the interpretation of the problems and difficulties that arise.

5 Discussion

Important in the field of pedagogy considered the use of teleconferencing. Increasingly, the use of video conferencing to improve teaching and learning has shifted from a marginal activity to an important tool for enhancing teaching and learning (Lawson & Comber, 2014). The teleconference can be viewed as an extremely useful tool when combined with strong, well-designed, student-centered teaching supported by participatory educational techniques (Greenberg & Colbert, 2004). As part of the teleconference, the role of the trainer is more demanding as it is not only pedagogical, inspiring but also, he is a regulator of the mean with the conditions required accordingly.

Teleconferencing in teaching facilitates collaboration, while it is pointed out that it enriches the experience in distance education, by reducing the feeling of isolation, stimulating the encouragement for interaction and strengthening the motivations for learning and communication (Armakolas, Panagiotakopoulos, Frangkoulis, 2019). The contribution of distance education is important, especially in times of crisis, which can significantly help and effectively support the educational work, ensuring quality and efficiency in the way educational structures operate (Frangkoulis, Armakolas, 2019). Problems such as space and time that are an obstacle to conventional learning can be addressed in distance education. The advantages of face to face learning still apply to distance education as it provides social interaction and familiarity among participants. The concept of communication and exchange of experiences is strengthened and takes on a new dynamic, from the utilization of technology, social media and the connection of individuals with them (Panagiotakopoulos, 2018).

The effectiveness of teaching via teleconference largely depends on the organization and preparation of trainees and trainers. The key element that emerged is that participatory – experiential techniques can be utilized during teleconferenc-

ing. Brainstorming and simulation can be used so that there is a possibility of participation and utilization of the experiential element and to develop a collaborative environment. From the results of observation and responses, we conclude that with the development of a collaborative climate, teleconferencing through techniques contributed to the growth of equal relationships of communication, cooperation and interaction with both co-learners and trainers. Both techniques can be used by the trainer considering each time the educational project he wants to achieve, the trainees, the available time he has.

6 Conclusions

From the results of the research we lead to the conclusion that the participatory-experiential techniques were used correctly. Brainstorming and simulation were used. The specific techniques were not mentioned by everyone. This is due to the limited knowledge about the types and uses of participatory-experiential techniques in teaching. Taking into account all the answers, we conclude that the simulation technique greatly serves the distance learning process as it enhances the participation and better processing of the object being learned by the group. The application of theory in practice and in fact with the method of simulation creates more interest, becomes more “tangible” and understandable, has better learning outcomes in the applied version of knowledge in relation to theory. It raises fruitful questions and concerns in relation to the application, which may not have been easily highlighted by the theoretical approach. Its application takes more time than other educational techniques. However, the learning outcomes from using the simulation training technique can be remarkable.

From the results of the research we conclude that the teleconferencing environment is ideal for direct communication and exchange of views contained in the brainstorming. Teleconferencing has the advantage of equitable management of the trainees in the learning process and promotes the use of participatory educational techniques, such as simulation and brainstorming. The last one is a participatory educational technique that can be used just as effectively, whether the teaching is done live or by teleconference. From the answers it can be concluded that the use of the above participatory educational techniques sparked creative evaluation and critical reflection among learners both collectively and individually.

The limitations of our research are mainly related to the small number of participants and do not allow the conclusions to be generalized. In addition, as educational programs vary in their structure and their philosophy, it is likely the findings may not apply to any online education program. These limitations provide some important guidance for further research. The research that will be conducted should focus precisely on how to promote collaboration among students and other experiential techniques and their degree of effectiveness will be studied.

Research should be conducted that focuses precisely on how collaboration between students is promoted and other experiential techniques and their degree of effectiveness will be studied.

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