

Case Study

The Teacher's Cognitive Role in the Efficiency of Distance Education: A Case Study

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Abstract: This paper aims to examine preservice teachers' views of the School of Pedagogical and Technological Education (ASPAITE) regarding the skills of online teacher-counselors and the effectiveness of distance education during the COVID-19 pandemic. The aim of the study is related to a continuous research effort to ameliorate potential teachers' effectiveness in distance education. Firstly, attention is drawn to the concept-key term of distance education, and afterwards, an extensive presentation of its basic principles and characteristics is provided: active teaching, leadership and management, active learning of students, and technological abilities. The results of the study show that the role of a teacher/counselor in distance education is a multiple one, as he or she must utilize and apply not only formal and informal qualifications as used in conventional education but also additional ones that bridge the gap caused by physical absence.

Keywords: teacher-advisor, distance education, active teaching, active learning

1. Introduction

Distance education imposes the boundaries of the modern conventional school institution and makes education a virtual event (Bravo et al., 2010). The roles, characteristics, abilities and skills one needs to be a competent and successful online educator should be identified by educational institutions and online learning organizations (Psycharis, 2005; Kallou & Kikilia, 2021). Teachers in distance education need a framework and guidance that will support them, improve their skills and help them design appropriate training programs (Albrahim, 2020). At the same time, for the successful implementation of distance education, a necessary condition is scientific training and familiarity with the principles and methodology of distance education. According to research studies, distance teachers need time, training, ready educational material and strategic planning of the distance education program in order to facilitate their work (Armakolas et al., 2020; 2021). This paper aims to examine teachers' cognitive role in the efficiency of distance education.

1.1 *The teachers' role in distance education*

Distance education is an educational system through which teaching and learning activities take place, as communication technologies and correspondence services between teachers and students take place in a different environment (Fragoulis & Armakolas, 2019; Armakolas et al., 2021). Lionarakis (2010) defines distance education as a teaching method provided through an interactive environment and teaching units that interact between designers and education professionals with a variety of activities, while students are specially trained in situations where traditional teaching methods and learning would limit the implementation of such activities in the classroom (Tuncay & Uzunboylu, 2010). Nowadays the impact of distance education, due to the adoption of developing communication and information technologies, is great and worth analyzing. Much of the international literature discusses distance learning, learners' performance, and their success in relation to a wide range of factors, such as teachers' characteristics and moods, Internet access, feedback, and the active participation of learners (Bolliger & Erichsen, 2013).

As clearly stated by Maor (2003), "if distance education is indeed a new type of teaching, then there is an urgent need to reconsider the role of the online educator". In the same vein, noted by Bonk et al. (2001), as the web of education itself evolves, we must also understand the characteristics of teachers in order to be effective. The benefits of an online learning environment with its geographical and temporal flexibility for both learners and educators often emphasized that the teacher "needs a specific set of skills and attitudes to stand out" (Armakolas et al., 2018).

According to Rallias and Anastasiadis (2015), the quality of distance education is significantly judged by the quality of communication between the teacher and the learner. In order to be able to effectively implement distance education, special educational tools are required (Vassilou, 2010) and mainly, the dynamic role of the teacher should not be limited only to the fulfillment of his/her academic obligations (Iliadou & Anastasiadis, 2010). The lack of communication skills and supportive character, especially in the early stages of distance learning, negatively affects the course of studies of the trainees (Zygouris & Mavroidis, 2011).

Goodyear et al. (2001) enumerate eight roles for an online instructor: researcher, content facilitator, technologist, designer, manager or administrator, process facilitator, consultant or consultant, and evaluator. Similarly, Bawane and Spector (2009) and Carril et al. (2013) classify the roles of online educators into eight categories: (a) pedagogical, (b) social, (c) evaluative, (d) administrative, (e) technological, (f) personal, (g) advisory, and (h) research (Albrahim, 2020). Some researchers also go further by developing a framework that classifies and summarizes a set of skills. The framework developed by Abdous (2011) includes the first stage containing pre-teaching practices involving preparation and planning. Then during the teaching phase, the facilitation, interaction, delivery, search, and feedback skills are identified. Finally, online educators need to demonstrate the ability to think and use lessons (Ko & Rossen, 2017).

1.2 *Active teaching*

In online education, the teacher is called to focus or goal to draw his/her attention to the learners' work, as they are taught through the comments and observations that constitute the feedback. Therefore, active learning in distance education is based on interaction, both with the content of teaching and with other people (Farajollahi & Zarifsanee, 2012). This is the reason why it includes the concepts of negotiation, recognition of experience, and cooperation between learner and teacher (Armakolas et al., 2015).

The importance of the educator's role in distance learning lies in his/her effort to maintain the undiminished interest of the learners. This role is mainly communicative, consulting, and animating, while it is achieved through various communication techniques. After all, both learning and communication in distance education take place at the time the learner desires via telephone, letters, e-mails, and the Internet or scheduled group counseling meetings. In this way, the trainer creates a support framework that contributes significantly to self-regulated learning. Therefore, in distance education, there is a transition from the traditional teacher-centered learning model to the student-centered model (Sarakatsanou & Vassala, 2011; Mohammed, 2022).

The trainees, in this context, consider important their interaction with the respective instructor, as an assistant is in the process of acquiring knowledge and understanding their needs (Rallias & Anastasiadis, 2015). Active teaching in online learning is achieved not only through the planning and monitoring of communication but through the evaluation of learning.

Furthermore, the teacher must pay attention to all team members, but at the same time, exercise self-criticism

for his self-improvement (Tsitlakidou & Manousou, 2013). Its main role is to provide counseling and animation, i.e. to “develop creative expression and skills through relationships based on cooperation, initiative, and mutual trust” (Papalambropoulos, 2020). Thus, the risk of reduced interest from the trainees’ side is reduced; they do not feel isolated and are fed with opinions and experiences (Papadimitriou & Lionarakis, 2009). Through animation, the teacher mobilizes the learners and activates them to understand their learning needs. For this reason, it must utilize the skills of cooperation, goal setting, decision making, and most importantly, relationship building (Kokkos, 2003). The motivation of the trainees, therefore, is an important element, as it can determine the success (or failure) of the distance learning project (Zhubreva, 2016). Teachers today have the opportunity to utilize Audiovisual Media in their classrooms and also in online environments with concrete pedagogical methods. Streaming Media technology provides the capabilities of viewing, saving, embedding in Web-based environments, reusing, translating, subtitling dubbing, and emphasizing in interactive activities. A/V Media can also be used as tools for visual creation and expression (Papadimitriou, 2022)

1.3 Active learning

In distance education, teaching focuses on the individual and emphasizes the development of individuality. Thus, the teacher is defined as an associate, while the evaluation process is considered a tool for informing the course of learning. At this point, the necessity of experience on the part of the teacher to promote learning becomes apparent (Vassilou, 2010). In this context and contrast to the conventional form of teaching, the learner can function as a unit in a form of individualized learning in order to learn (Armakolas et al., 2015). Therefore, distance education can be defined as facilitating and supporting self-directed learning.

Also, in distance education, the importance of the teaching material is highlighted, regardless of its form. The trainee is invited to study the educational material of the unit, collaborates with the other members of the group, and exchanges views in order to complete the activities assigned to them in the mutually agreed time frame (Lionarakis, 2010). However good the training material may seem to be, learners need proper instruction from the instructor so as to participate, seek help and support in order to effectively implement distance learning programs. Therefore, ensuring regular and mutual communication between teacher and learner is of great importance for the active participation of learners, as its quality compensates for the lack of immediacy and personal contact (Zygouris & Mavroidis, 2011; Katsaris & Vidakis, 2021).

At the same time, online educators need to pay attention to what they need to create, develop and manage their online courses. For educators and learners, it is vital to consider time management issues (Alman et al., 2012). Their pedagogical skills are initially based on understanding the basic principles of online teaching that drive active learning. As the teacher focuses on the three axes (learner content interaction-learner-instructor interaction-learner-learner interaction), there is a greater chance that the trainees will be satisfied with the teleconference environment as a whole and therefore, the educational results for learners are the ones the teacher desire (Armakolas et al., 2018; Katsaris & Vidakis, 2021).

2. Methodology

This research aims to investigate the views of teachers of the School of Pedagogy and Technology Education (ASPAITE) on the skills of online teachers-advisors in distance education in the era of the COVID-19 pandemic. To meet this goal, a quantitative survey was conducted and the tool used was the questionnaire.

Regarding the method of sampling, it is worth mentioning that a non-probability sampling procedure was used, i.e. the sample was obtained without the use of the laws of probability. The reason for using this method is that in many cases, it is impossible to record the population so that there is a sampling frame and the desired sampling is performed (Creswell, 2012).

In the present study, the sampling process was limited to ASPAITE teachers, from which the 120 questionnaires to be analyzed emerged. The survey was conducted in April 2021 and lasted about 15 days.

The design of the questionnaire was based on the research of Bigatel et al. (2010) and Armakolas et al. (2021). This questionnaire consists of sub-sections and a section with socio-demographic characteristics. The sections analyzed below include closed-ended questions, which are answered based on the 7-point Likert Scale (where 1 = Not at all and 7

= Absolutely).

- Demographic Characteristics (Questions 1-5)
- Unit A: Active Learning Ability (Questions A1-A9)
- Unit B: Ability for Active Teaching/Response (Questions B1-B5)

In order to reach the goal as well as possible through the questionnaire that was designed, the following research questions were asked. In the context of checking the validity and reliability of the questionnaire according to the rules of educational research (Panagiotakopoulos & Sarris, 2015), it was evaluated by three experts in Didactics in education and then a pilot application was carried out with the help of four (4) students. The reliability of which was tested using Cronbach's α internal consistency factor.

The overall approach to the above purpose was to made through the following two main research questions:

Research Question 1: To what extent does the active role of the educator determine the effectiveness of distance education and active learning ability?

Research Question 2: What is the role of active teaching (that is, to what extent do counselors respond promptly and give proper feedback to students' concerns about their success)?

Our sample consists of 120 preservice teachers of ASPAITE, who participated in our research following the method of the avalanche. In our research, 120 people participated, of which 64 were men (53.3%) and the remaining 56 were women (46.7%).

The age distribution of the participants: most of them (100 participants) belong to the category 26-55 (percentage 83.3%). More specifically, 36 people (30%) belong to the category 26-35, 44 people (36.7%) to the category 36-45 and 20 people (16.7%) to the category 46-55. There are 12 people in the younger age category, who are under 26 years old and 8 people in the older age category, over 55 years old.

Fifty percent (50%) of the participants (60 people) are graduates of higher education, 56 people (46.7%) hold a master's degree, while there are four persons who have a doctorate.

Most of the participants teach in High School, 76 people in total, i.e., 63.3% of the participants. While the remaining 44 of the participants (36.7%) teach in Secondary School. Also, the majority of participants (76.7%) teach in departments with a number of pupils between 10 and 20, there are eight teachers who teach in departments with less than 10 people and 20 teachers who enter classrooms with more than 20 pupils.

3. Results-discussion

3.1 *Descriptive analysis of first research question: Active learning ability*

Table 1 below summarizes the percentages of answers regarding the first research question which concerns active learning and its treatment by teachers. We observe that on the whole the educational participant's approach positively in matters concerning the encouragement of participation and discussions, with only two percentages 30% & 20% in questions 3 and 4, being in a negative option (Occasionally). From the aforementioned answers, we can conclude that the teachers of the current generation to a significant degree (Question 5 & 7, with respective percentages of 70% and 76.6%, are in the positive attitude options of the scale-Frequently, Usually, Always-), contribute to children's involvement in group processes, facilitating them in creating explanations and interpreting issues that concern them. Finally, we notice that in most questions (Questions 2 to 7), we have an accumulation of percentages, in the middle-neutral point of the scale, which may indicate confusion among teachers in dealing with some issues related to the new reality created by the new educational techniques. Teaching using participatory techniques is more effective and promotes the interaction between teachers and learners. Through the tools of a videoconference platform, it is possible to use and exploit participatory experiential techniques (Armakolas et al., 2020). Research results show that the use of participatory-experiential techniques through teleconferencing can create authentic interactive learning environments (Koutsoukos et al., 2015; Armakolas et al., 2019).

Table 1. Active learning

| Ability: A. Active learning | Never | Rarely | Occasionally | Neutral | Frequently | Usually | Always |
|--|-------|--------|--------------|---------|------------|---------|--------|
| 1. Do you encourage students to interact with each other, assigning group work and projects where needed? | 0.0% | 0.0% | 0.0% | 0.0% | 46.7% | 30.0% | 23.0% |
| 2. Do you encourage students to share their knowledge and experience with the educational community? | 0.0% | 0.0% | 0.0% | 53.3% | 40.0% | 6.7% | 0.0% |
| 3. Do you encourage students to participate in discussion forums where required? | 0.0% | 0.0% | 30.0% | 50.0% | 20.0% | 0.0% | 0.0% |
| 4. Do you provide students with internship opportunities so that students can apply their knowledge in the real world? | 0.0% | 0.0% | 20.0% | 46.7% | 33.3% | 0.0% | 0.0% |
| 5. Do you provide additional supplies that encourage students to penetrate the course content? | 0.0% | 0.0% | 0.0% | 30.0% | 46.7% | 23.3% | 0.0% |
| 6. Do you encourage the result produced by the students, as the case may be? | 0.0% | 0.0% | 0.0% | 26.7% | 46.7% | 26.7% | 0.0% |
| 7. Facilitate learning activities that help students construct explanations/solutions? | 0.0% | 0.0% | 0.0% | 13.3% | 43.3% | 33.3% | 10.0% |
| 8. Do you respect students in your communication with them? | 0.0% | 0.0% | 0.0% | 0.0% | 33.3% | 36.7% | 30.0% |

3.2 Descriptive analysis of the second research question: Ability to active teaching/response

Table 2. Active teaching/response

| Ability: B. Active teaching/response | Never | Rarely | Occasionally | Neutral | Frequently | Usually | Always |
|---|-------|--------|--------------|---------|------------|---------|--------|
| 1. Do you provide immediate or helpful feedback on learning-enhancing tasks and exams? | 0.0% | 0.0% | 0.0% | 6.7% | 70.0% | 23.3% | 0.0% |
| 2. Do you provide clear and detailed feedback on assignments and exams that enhance the learning experience? | 0.0% | 0.0% | 0.0% | 0.0% | 46.7% | 33.3% | 20.0% |
| 3. Do you show care and concern for the consolidation and assimilation of the course content by the students? | 0.0% | 0.0% | 0.0% | 3.3% | 60.0% | 36.7% | 0.0% |
| 4. Do you take care to keep participants in the lesson or in a task? | 0.0% | 0.0% | 0.0% | 13.3% | 46.7% | 33.3% | 6.7% |
| 5. Are appropriate strategies for managing the online workload used? | 0.0% | 3.3% | 10.0% | 16.7% | 50.0% | 16.7% | 3.3% |

Table 2 above corresponds to the second research question, i.e. the ability for active teaching and the response of the teachers nowadays adapted to the requirements of the new era. We observe, with the exception of Question 5, which refers to the use of suitable strategies for the management of the internet workload-where there is a dispersion of percentages in different categories-that the majority of teachers agree with the positions listed. More specifically, 93.3% provide immediate and useful feedback on assignments and exams with the ultimate goal of improving the student to a greater or lesser degree. Respectively, the percentage of those who provide feedback in order to improve the learning experience is high, reaches 80%. In other words, we observe that the concern of teachers who participated in our research is the direct contact with the student, the feedback on his/her work and the care for his/her participation

throughout the lesson. Bearing in mind the above percentages, we can conclude that the role of the teacher is supportive and encouraging, enhancing the abilities of students and promoting the educational process. The importance of the senses, emotions and “techniques of the body” are revealed in both the educational and learning processes by videoconferencing, in order to reduce the transactional distance between the teacher and the learner, and to lead to a positive distance educational experience (Armakolas et al., 2021). Thus, the cognitive, emotional and social factors involved in “tele-mathesis”, turn videoconferencing into an “embodied” and “integrated” way of learning (Kanellopoulos et al., 2021). Therefore, through the research results, we outline and strengthen the profile of the teacher/advisor.

4. Conclusions

According to the above literature review and the results of the research, the role of the teacher-advisor in distance education is multidimensional, which is due to the elimination of the distance and the gap between teachers and students and therefore, the lack of interpersonal communication. The teacher-advisor must utilize and apply not only the formal and informal qualifications of the classical teacher of conventional education, but also the non-formal qualifications that will fill the gap of physical distance between the teacher and the students.

Utilizing the strategies of communication, active teaching and the participation of learners in distance education in combination with the various possibilities of new technological means can prove to be the most effective dimension of the teacher’s/advisor’s catalytic role. In particular, the distance education teacher is called upon to pedagogically design more complex teaching, of which the preparation is costly in time. The teacher is the person who will activate the thinking and the learning process, as a result of which he/she forms a learning community that is taught and learns in an electronic environment using digital tools and the internet. Thus, it attempts to build knowledge through interaction with learners, providing support, motivation and feedback for their evaluation (Armakolas et al., 2021).

From the analysis of the aforementioned questionnaire, we can emphasize the homogeneity of the sample we used as well as the positive attitudes of the participating teachers on issues related to new technologies and encouragement practices. Most of them provide students with the tools to learn about new technologies, learn to express themselves, and collaborate. The utilization of new technologies and multimedia is commonplace for the modern class. Regarding correlations and differences, no safe conclusions can be drawn, as we use a small sample and in addition, there is detected sympathy of the participants in all the questions. In any case, the topic addressed in this paper can pave the way for further research in the field of education utilizing technology and multimedia, as an educational advisor’s role offers a fertile ground for future studies to be carried out.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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