Didactic improvement to virtual tutoring

José Roberto Santamaría Sandoval[1][0000-0002-6349-0823] y Esteban Chanto Sanchez[2][0000-0002-4823-766X]

[1] Universidad Estatal a Distancia, Costa Rica
[2] Universidad Estatal a Distancia, Costa Rica
jsantamarias@uned.ac.cr

Abstract. In the Introduction to Telecommunications Engineering course, students do not show up for the virtual tutoring activities because they do not feel motivated. Based on a critical reflection of the teaching work with a qualitative and SoTL approach and under action research design, improvements to the activity are proposed. These improvements are the inclusion of multimedia and interactive material preparatory to virtual tutoring. On the other hand, the reflexive and critical work improved the teacher's empathy with the students, returning the protagonism paper to them, in accordance with the university's distance education model. The improvements were included in the virtual environments, and it is considered that they will increase of levels of participation once the course is reopened in the third quarter of 2023. Also, the work opens the door for other reflexive work and improvement of the teaching work in the other subjects of the course.

Palabras clave: Virtual classrooms, tutoring, didacticism, active learning, distance education

1 Introduction

In the course Introduction to Telecommunications Engineering of the Bachelor's Degree in Telecommunications Engineering at UNED, Costa Rica, there was a 100% level of absenteeism of its students to the virtual tutorials. In the distance education model, tutoring is an important learning technique because it is where the tutor can clarify doubts to the students synchronously.

The career is concerned and needs to understand why students do not participate in virtual tutoring, considering that there are resources in time and effort that are dedicated to the planning of these. This paper explains the didactic improvement that was worked to make virtual tutoring attractive to students and to achieve the expected learning objective.

2 Theoretical Framework

Distance education has its own differentiating elements: the role of the teacher and the student changes with respect to the traditional model, the level of responsibility and commitment that the student assumes towards his learning is greater. At the planning level, the effort is greater and the mediation must be in such a way that it allows the student to be a self-learner. Distance education has an impact on teaching, student learning and the achievement of objectives. (Mendoza Castillo, 2020: p. 344).

In this education model there is a virtual mode that includes synchronous and asynchronous methods supported by ICT. The Telecommunications Engineering program works under the virtual mode. Santamaría Sandoval and Chanto Sanchez (2021) point out that this career is the only one in Costa Rica under this mode, so the career has laboratories and virtual learning environments.

Also, the carrer includes the application of active strategies and blended learning for students to acquire the skills of the engineering profile. Blended learning is the application of a variety of strategies in the teaching process so that the student can acquire the desired significant learning with active learning (Hranstinski, 2019).

3 Method

The basic method of the research is the scientific method under a qualitative approach. This study analized the reasons given by the students for their absence to the tutoring technique, thus generating an analysis of which elements from the teaching can be improved to motivate the student.

The design is of action research until planification phase, the teachers critically and reflexively evaluate improvements to their teaching performance. The sample method is a previous sample and not a later one, since the course will be reopened until the third quarter of 2023.

The total number of students in this analysis is two, because that was the last enrollment of the course in the only opening that the course has had. Therefore, it is a survey rather than a probability sample. Among the techniques applied were a survey of the students, an interview with the professor and the teacher. Then, a reflexive analysis based on theory is carried out for the construction of improvement proposals.

4 Results

The students indicated that their absence was due to the lack of motivational elements. They understand the objective of the technique, but the way it is carried out and previous elements made them assume that it could become a magisterial class. They also consider that there are no direct support elements for tutoring.

In opposite, the teachers thought the students didn’t have time planification and the new generations had that attitude. Then they were shown the responses of the students and they reflected on their responsibility to encourage self-regulation in the student.

Therefore, within the virtual environment of the course, lectures and short videos on specific topics that motivate the students' curiosity were included. As shown in Figure 1, in the subject of basic laws of electricity, 4 audiovisual resources and an interactive dictionary of electrical components are included, all to be viewed before the tutorial. The material also allows visualizing a practical tutorial, not a lecture.

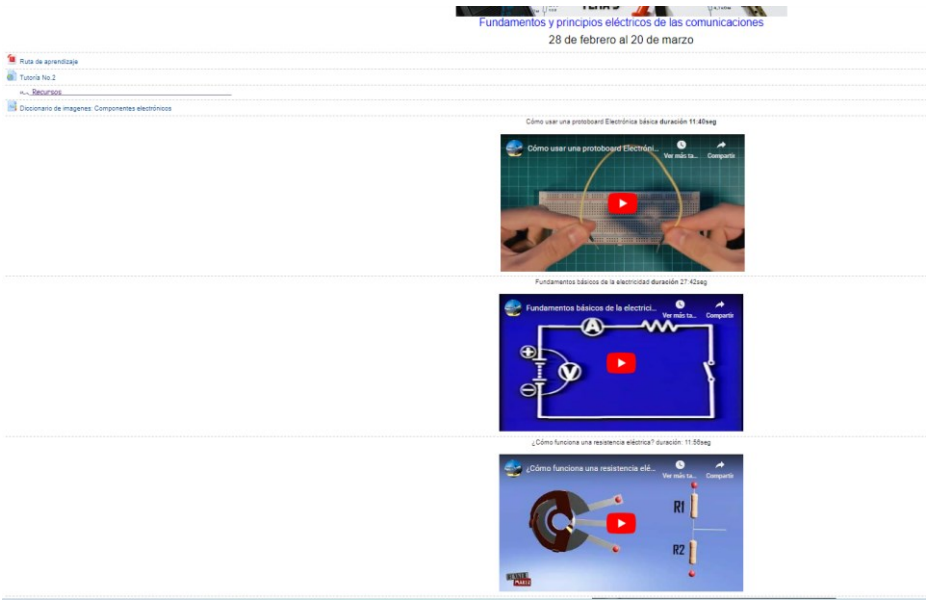

Fig. 1. Material audiovisual e interactivo para motivación de la participación en la tutoría virtual.

Short reading texts were also added to orient the students to the topic to be analyzed in the tutorial. The documents are not of direct evaluation, but they are elements thought as motivating and attractive for the students. These documents also present a work guide to motivate the student's self-learning and to immerse him/her in depth in the subject.

5 Discussion

The greater the intrinsic motivation of the student towards the subject, the greater the learning (Fong-Silva et al., 2021). However, to maintain this intrinsic motivation, incentives are required (Prieto Andreu, 2020). Accurately, active strategies are a recognized method to increase motivation because the protagonist is the student (Becerra Valdivia and Bravo Silva, 2017). Therefore, in the course, a series of resources that transfer the protagonism to the student were proposed. In this way, it also complies with the principles of the constructivist model (Samaniego González, 2017). Although, we must wait for the results from its application in the mentioned period, the reflexive

action led to the creation of audiovisual material and tools thinking of improving the student motivation.

Also, the project improved the tutor's empathy towards the student, thus transforming him/her into a true "orchestra conductor", "strategic learner" (Chocarro de Luis et al., 2013). The tutor assigned to the course carried out a critical work considering the needs and profile of the students. Therefore, the material included is simple to understand, entertaining and only a few minutes long. The teacher told this project was a challenge, he changed his vision and now has more empathy with the students. This shows that the work was done under the principles of educational research and its purpose of contributing to the teaching-learning process with innovation (Díaz Goméz, 2019).

6 Conclusiones

These improvements are expected to increase the motivation of current students because they shift the focus to the student, although we must wait at third period of this year for the results.

We concluded the planning process within the action research model was positive in the tutor. The teacher increased his empathy with the students, as well as skills such as self-criticism and competence for the creation of audiovisual resources.

Also, the didactic technique was aligned to the educational model of the university. Responsibility and self-management remains on the side of the student and this continues to be the protagonist.

7 Limitaciones y Futuras Investigaciones

The main limitation is that the next opening of the course is until the third quarter of this year. This limits the evaluation of the results of the improvements developed.

Future research is a work in the revision of other techniques where weaknesses have been detected. Also, it is necessary to continue with this research in the subject, to generate continuous improvement processes until the desired level of participation is achieved.

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