

Pedagogical Mediation in Virtual Learning Environments: Guidelines for Continuous Improvement

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Abstract. The COVID-19 pandemic has accelerated the use of technology in teaching and learning processes, especially through virtual courses. Therefore, in response to this circumstance, an action-research was carried out on pedagogical mediation in virtual teaching and learning environments of the Natural Resources Management course at the Universidad Estatal a Distancia de Costa Rica. As a result, guidelines were developed for teachers who design or manage learning environments for university subjects. These were organized into five categories: welcome, design, content, communication, and evaluation, and allow for the creation of dynamic, interactive and personalized environments for university students. By following these guidelines, teachers can improve the quality of online education in the current context. In addition, this study can be of great use to other university educators seeking to improve the quality of online education and create more effective and satisfying learning environments for their students.

Keywords: pedagogical innovation, educational development, didactics, quality of education.

1 Introduction

The elements of pedagogical mediation in virtual learning environments (VLE) are a fundamental part of the organization and planning of the design and structure of educational resources, based on the use of information and communication technologies (ICT). As a way of guaranteeing a meaningful teaching and learning process, in constant improvement of didactic mediation (Cabero and Barroso, 2015). Above all, by taking advantage of the EVA with a technological pedagogical vision, which allows its use beyond the conventional and contemplate learning as the reason for educational inclusion that aims at flexible and dynamic pedagogical mediation, where the student is the protagonist (Suárez, 2001).

2 Theoretical Framework

2.1 Pedagogical mediation

It is a key aspect in the use of VLEs, as pointed out by the research of Calderón and Ulate (2020), Mora and Díaz (2016). They all agree that it goes beyond the simple transmission of knowledge and should focus on the motivation of students, as well as the generation of new experiences and knowledge. To achieve this, Mora and Díaz (2016) emphasize the importance of good planning and provision of resources and stress the role of the teacher as facilitator. For his part, Reigeluth (2012) suggests instructional design as a fundamental tool to focus the teaching and learning process and use it as a more effective means of learning.

2.2 Virtual learning environments

There are spaces that have gained popularity due to the use of information and communication technologies (ICT) (Silva, 2017; Bonilla, 2021). These environments are designed to facilitate the teaching and learning process, through synchronous and asynchronous interaction. They are based on the principle of collaborative learning, with dynamic multimedia that make learning enjoyable, as an interactive environment for knowledge construction. These are ideal for the development of academic activities, learning strategy and use of educational tools (Cabero and Barroso, 2015; Cavadía et al., 2019).

3 Methods

The guidelines presented in this document are an additional product of a study conducted under a qualitative approach with an action research design and contributions from the analysis of digital ethnography; with four stages that included observation and diagnosis, planning, implementation, and assessment of improvement actions. Various techniques and instruments were used according to the process, for example, group interviews and virtual focus groups (Atlas ti8® was used for their analysis), documentary observation techniques, peer evaluation, among others. The study was carried out at the State Distance University in four subjects of the Natural Resources Management career within the context of the LA COVID-19 pandemic.

4 Results

Five categories were identified with their elements to contemplate in the design of learning environments; based on this finding, a guide with didactic guidelines and examples was developed.

The first category is the welcome; it should be attractive, clear, concise in the explanation and location of the different resources. In addition, aspects such as welcome, academic orientation, guidelines for the use of the platform, objectives and

description of the subject, citation, netiquette, among others, should be taken into account.

The second category is the design that contemplates the visual architecture, which should be pleasant and motivating. Accessibility, based on planning and organization, usability of universal design for learning (UDL), among others.

A third category is communication, where development is mediated by social interaction, needs and motivations. Interaction is encouraged in its different dimensions, communication in multiple ways, with the objective of improving motivation, collaboration, teacher-student empathy, among others.

The fourth category is content, which includes the different sections, objectives, learning paths and feedback. For example, the writing of instructions, description of topics, reflection and thinking actions, development of creativity and innovation, collaborative work, synchronous or asynchronous tutorials.

5 Discussion

In the identified elements, the principles of a clear and concise interface are contemplated to reduce the student's learning curve (Krug, 2006), with input, development, and closure activities, as recommended by Gutiérrez and Prieto (1999).

The above is coupled with pedagogical mediation strategies that allow students to acquire knowledge and perform an information retrieval process (Hooper et al., 2017). For this, the use of SAD is essential to consider, due to the learning needs of the student person and his or her sensory, motor, cognitive, affective, and linguistic abilities (Berrocal et al., 2017).

For their part, the OECD (2014), as well as Calvo and Salas (2017), agree on the importance of including in the learning strategies aspects such as the clear description of each of the sections, the work format and the general indications for learning activities, in addition to constant communication between student-teacher-environment.

The last category is evaluation, with its respective auditory, formative and timely feedback; as well as the implementation of co-evaluation and self-evaluation, in addition, elements in which self-managed and autonomous learning is encouraged.

6 Conclusions

In the study, five categories were identified that correspond to the elements found in the pedagogical mediation of virtual environments, which could complement the classification of the current level of virtuality in the institution. Although there is a planning process of programs and subjects through curricular design.

It is necessary to use a roadmap that includes the categories found to improve not only virtual environments, but also interaction, motivation, communication, critical thinking and reflection, as well as the generation of creative, innovative, autonomous and self-regulated students. Therefore, the guide developed in the study could be very useful. Limitations and Future Research

The following is considered as a possible research topic: "Analyzing the processes of pedagogical mediation in a postgraduate course at UNED". In addition, as limitations, the academic time granted for the research is considered.

7 Limitations and Future Research

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