THE CONTRIBUTION OF THE ACTIVITY THEORY IN THE ORGANIZATION OF THE TEACHING WORK IN A VIRTUAL LEARNING ENVIRONMENT

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Abstract

In this article it is presented the methodological steps of the empirical research in which were elaborated theoretical principles to be used in virtual learning environments based on the Leontinev Activity Theory.

Keywords: Virtual Learning Environment (VLE), Activity Theory (AT), teaching-learning process.

1. Introduction

In the current context, Distance Education is armed with differentiated importance, where the successive use of technological innovations in distance teaching-learning processes mediated by computer has been intensified making them more flexible and a trend in this century beginning [8]. The relation between apprentice and reality it is no longer limited to its personal experience and to what school and family provide; now he can also manage information from different reality interpretation models.

It is no longer possible to limit Distance Education to the use of printed material or television, even when that material is digital. The distance learning systems hold and even require the use of integrated technologies implying the sprouting of new scenarios for teaching-learning processes.

The virtual learning environments, besides having a presentation and interaction mechanism that is not necessarily linear, aim to contribute so that the teach-learning process and, more specifically, the assessment process can be more interactive, dynamic and social inclusive. They also provide, a collaborative learning surpassing the unidirectional communication made by content specialists [9].

1.1. The empirical research

The research was carried through in a specialization course, developed in partnership with LabTIC/ESAG/UDESC, contracted by PROINFO-MEC. The course was offered in the semi-presential modality, where the VLE POLVO was used to support the teaching-learning process.

In the design and development of a VLE attitudes, factual information, data, observation processes, definitions, deductive and inductive inferences, problems solving and learning strategies must be taken in account. Also, the necessary didactic strategies must be implemented to offer conditions for the learning experiences generalization and its later applicability.

In this scenario, the computer mediated teaching-learning process assumes character each time more flexible, especially when implemented in VLEs.

Thus, the process of teaching-learning in this context seems to assume a more dynamic and collaborative character. The trend is

the fast expansion of distance learning courses supply and demand in the most various formats and contents [2].

1.2. Research problem

On the basis of the bibliographical revision [3], [6] [7], [8], [10], among others, was observed that there isn't sufficient theoretical production of principles based on the Activity Theory to be used in the VLEs teaching-learning processes.

Consequently, this inexistence of theoretical principles, opens space for the reproduction, though with adaptations, of classroom pedagogical practices VLEs.

It is believed that the use of VLEs in teaching-learning processes requires a committed understanding of this universe as well as an understanding of the conditions and contexts: social, cultural and institutional, for the teaching-learning processes adequation.

Following the social and cultural transformations, it is necessary to investigate the implications that Information and Communication Technologies brings to the development of new teaching-learning conditions while using VLEs in general and more specifically, using the VLE POLVO. The investigation is made in the light of the Activity Theory.

1.3. Pedagogical challenges

Among the pedagogical challenges that these new technologies present for pedagogy cognition and computer sciences in the design, development and implementation phases, stands out the necessity of theoretical principles based on the Activity Theory [4] to guide the teacher didactic and methodological organization in the VLE.

From the didactic point of view, the teacher that works in VLEs must have specific knowledge in the field, but, most important, the teacher must be capable to use appropriate methodological procedures, conferring meaning to the programs and to the pedagogical practices, in accordance with the specificities and peculiarities of the didactic-pedagogical objectives, of the different individuals that will enroll in the course, as well as with the medias used in the processes.

From a methodology perspective, it is understood the importance to argue and to elaborate theoretical principles based on the Activity Theory to guide the teacher work organization and the teaching-learning processes in VLEs [4], looking forward to ally

the computer mediated processes constituted by the pedagogical practices implemented in the VLE and the actual learning that the individual achieves through the VLE mediation.

Aware of the social and cultural transformations, the problem proposed demands an investigation of the implications that Information and Communication Technologies bring to the development of new teaching–learning process conditions, in the light of Activity Theory, using VLEs in general and, more specifically, using the VLE POLVO. Given those facts, the investigation of the proposed problem started with the question: how to elaborate principles or theoretical procedures based on Activity Theory to be used in VLEs?

2. Methodology aspects

This research can be classified as a case study. In this sense [11] affirms that a case study it is a qualitative research characterized by empirical aspects that investigates a data phenomenon exhaustively given its context. The boundaries between the phenomenon and the context in which it occurs are neither defined nor known.

In this direction the teaching-learning process was analyzed as activity, in the POLVO environment, based on the categories “reason-ends”, “action-procedures” and “objects” of the Activity Theory [4]. For the development of the research the following aspects were analyzed:

- Motivation of the participants in the learning process;
- Reasons and procedures establishment;
- Learning activities systematization;
- Actions and operations delimitation;
- Characteristics of the activity orientation base;
- Characteristics of the external material base of the learning activities;
- Induction forms of the learning internalization processes: language role;
- Learning contents systematization forms: knowledge application in the activity situation;
- Abilities development: thinking, feeling and action integration to make the bridge between knowledge and know-how.

2.1. Research population

The research population can be divided in two groups: a group of teachers and a group of students. The first one is composed for 10 (ten) university teachers (P1 the P10). The

second one is distributed in three different groups (T1, T2, T3). These three groups gather a total of 83 (eighty and three) students regularly registered in the specialization courses describer before.

Given the VLE users groups division (teachers and students - TS) it was analyzed the use of synchronous and asynchronous tools available in the environment.

2.2. Data acquisition technique

Aiming the field work improvement it was made an option to systemize the process of data acquisition using the following stages: data about the programs structure and objectives, courses, students and teachers; data about the technology used in the teaching-learning process mediation.

This stage was subdivided as follow: observation of the actual situation through observation of the presential meetings, as well as observation of the meetings mediated by the VLEs using synchronous and asynchronous tools. This stage of observation, analysis and comparison with the Activity Theory categories, which was the theoretical and methodological basis to identify and list the involved reason-end, action-procedures and objects in the activities developed by the user in the virtual learning environment POLVO, but, most important, in the observation of the VLE tools uses and the accesses.

Questionnaires with open-ended and multiple choice questions have been applied. The multiple choice questions refer to categories with previously defined describers and the open-ended questions deal with the subjective dimensions intrinsic to the teaching-learning processes mediated by virtual learning environments.

In the semi directed interview, the interviewee had space to freely talk about some of the questions proposed by the interviewer. These strategies allowed a deeper approach, as well as comprehension of the users behaviors om the teaching-learning activities mediated by the VLE - POLVO.

2.3. Data handling

The multiple choice questions were summarized based in frequency lists giving support to the qualitative analysis. The qualitative analysis were carried through based on the data collected through questionnaires, reports and dialogues mediated and registered by the environment (www.polvo.udesc.br).

From the data analysis, based on the Activity Theory theoretical principles were elaborated to be used in teaching-learning processes mediated by computers and, more specifically in virtual learning environments.

The discussion, as well as the analyses, was carried through throughout the investigative process in a permanent dialogue with the Activity Theory.

3. Conclusions

Among the main aspects of this research, we present here some of the theoretical principles based on the Activity Theory to be used in virtual learning environments.

a) The system of categories, principles and laws of the Activity Theory ha an instrumental character for the development of teaching-learning processes in virtual learning environments, specially when it comes to the fact that this processes constitute activity end oriented, with the ends made concrete through reasons, which, in turn, determines the actions and operations that must configure the process.

b) The development of new teaching-learning conceptions in distance education compatible with the new information and communication technologies in general and with VLEs in particular, requires a redefinition of the activity place and paper in this pedagogical process, transforming it into the main source of knowledge appropriation and consequently to redefine the teacher paper so that the teacher becomes the process creative mediator.

c) The teaching-learning process approach in distance education that use VLE, based on the Activity Theory, implies and integral discussion of the process and its aspects: curricular conception, didactic-pedagogical procedures, planning and organization of the teaching-educative activity, methods and learning assessment, surpassing the current trend to reduce the complexity of this process to a simple increment of new education approaches.

Finally, we want to emphasize the fact of that the elaboration of theoretical principles based on the Activity Theory to be used in VLE, means to transform explanations into guiding norms of the thought.

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