

# MONITORING THE PROCESS TEACHING/LEARNING THROUGH VIRTUAL LEARNING ENVIRONMENT

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## ***ABSTRACT***

The applications of Virtual Learning Environments on teaching learning situations are issues to be discussed and evaluated in order to promote knowledge to an educational improvement by this tool. This is exposed on this article, EUREKA, PUCPR's Virtual Learning Environment (VLE), on this offers several possibilities of interaction in support of teaching and learning. The expansion scenario of use of the EUREKA in PUCPR (an average of 20% per year) favors research and investments in the area of sharing and visibility of actions taken by the student in this environment, allowing a clearer analysis of the educational attainment. This information, coming from the student's actions in the VLE, which requires an action to fulfill the data so that they can be returned by those involved in the process (students/teachers) and used for better educational activities. This action should allow a view of the process the student's knowledge and consequently generates responses to the teacher about the status of development on learning, favoring a focus on content and teaching simple and organized, inserting improvements on the educational process. The focus of this study is on how information and communication technology can realize improvement on the monitoring process of the student in the VLEs by those involved on the learning and teaching situation.

**Keywords: Virtual Learning Environment; EUREKA; Monitoring of student**

## 1- Introduction

The Virtual Learning Environments are actualize on wide use and continuous development, diversified according to their applicability. This applicability is related, directly linked with the variables of the function assigned to it, including the infrastructure which it is implemented to a desired target audience, in addition, the specific needs of educational attainment. Tied to this applicability issues about how learning is acquired are build, and even the process of acquisition thereof, through this tool can be parameterized and subsequently analyzed in order to provide data for understanding the situation of student learning and, through them, direct the acquisition of knowledge. These parameters, which denote qualities intrinsic and extrinsic learning by VLE, when properly analyzed, should enable the generation of positive impacts in the process as a whole. Consistent with this possibility, this paper discusses some considerations on the parameters necessary to carry out the monitoring of teaching and learning that occurs through the Eureka, the VLE PUCPR under the criticisms and reflecting on data and useful for it.

The Eureka to VLE, offers several tools for communication and synchronous and asynchronous interaction, with a view to facilitate and accelerate the acquisition of knowledge on educational level. In its development and configuration, seeks for to be accesses, and quests to be adequate infrastructure to the technical and pedagogical context which it is applied. These criteria are clearly goals achieved through the numerical verification of its increasing use, around 20% annually, and manages around 35,000 active users, with an average 6000-7000 accesses per day (exceeding the peak access number of 12,000).

This scenario demonstrates the possibility of successful sharing of information of student's actions on the environment, which, adapted turns relevant to the process of acquiring knowledge. When analyzed, the information can provide a vision of the process of acquiring knowledge by the student that can generate answers to the teacher and the student himself, about his state of development in learning, favoring thus the focus on content and teaching positions relevant, immediate, simple and organized, increasing improvements in the educational process. This monitoring possibility should be previous for the

teacher who follows students in the learning process, and for the students, who may participate in the activities of the learning process according to the view of their evolution.

## **2- Relations in the VLE**

The Virtual Learning Environments are complex systems that put in perspective several axes for analysis. On this research is important to outline the points intended to address, because there is no systemic exclusion, but a look that changes the outlook of the research [1]. It is noteworthy that the development of VLE originates on software engineering and the principles of education, which is related to their own characteristics. Its main focus is transverse and its models are systemic. The systemic exchanges provide information from interrelations, represent the network system. One should note that complex systems are easier to understand that forgiven when model itself [2], however, one should not lose out of sight that is dangerous reasoning, based solely on an model, after all, all the formalized built a human being can be imperfect [3] .

In parallel, it is notable that in the VLEs, as more an automation, human intervention cannot be ignored [1]. That is, an activity performed by an VLE takes a particular dimension when the learning process is mediated by a computer system that has a monitoring activity by actors of the process that can provide data during the course of learning for a proper evaluation of it self can direct the action of the actors. The dynamics and practices brought thru the learning process that generate feedback needs what was experienced (feedback) and a look that can be outside evaluator (reactive monitoring) and accompanist (proactive monitoring). From the standpoint of this study, these relational exchanges, the feedbacks and evaluations are the mean point for the teaching strategies, and evidence of the adequacy of the proposed activities (effectiveness and often quality). For instance, lie on your progression allows the student's self-awareness and a reflexive position about its performance in learning [7]. This reflexive awareness of the path, than it has to be covered [3] combined with monitoring of the teacher helps to put into action by both the student and the teacher, repairing strategies in the teaching / learning.

### 3- Importance of monitoring of student

The possibility of students to understand him selves and find him selves in the process of acquiring knowledge of the faculty have access on the quality of the data to understand this student under the same aspect comes to the need to transform the VLEs in sites more inviting to the whole process. Distance studying is usually an arid process that is partially experienced on solitude. For the process of using VLE results in learning gains, students should be encouraged and clearly guided. The mediations elements of should cooperate for this end, inhibiting the difficulties of context and stimulus.

Moreover, there is an inherent on this process part, which concerns on the need for individualized teaching action in order to avoid blocking agents on the process of acquiring knowledge of students and on reduce their demotivation, when you're in a situation of simultaneous monitoring of a large number of students. In this sense it is necessary to weigh on the individualization of learning and the value of the monitoring task. About this Rodet wrote that:

“The content of feedback, leading to a significant work on the student's progression in their learning pathway, can not be determined absolutely. Quite the contrary, each student discusses and integrates new knowledge in a unique way. It should be noted however, that this content should enable the student to make an assessment on their knowledge and identify areas for further development in cognitive, met cognitive and methodological. Similarly, it seems desirable that the communication is as individualized as possible being emotionally 'charged'.” [8]

It is not always possible to have the suitable student / teacher propotion for a proper individualization of such monitoring, because of lack of human an economics sources. It is stressed that the management and the processing of information of all interactions that happened on the educational model that uses an VLE as a mediator, requires time and effort of teachers, and that a solution to allows the monitoring request on action of the teacher / tutor when necessary [9], streamlining the entire process.

Proposals for solving this problem are sought on this research in order to avoid rejection of distance learning, avoidance and to maintain the qualitative

criteria of response. Through them it is proposed and improved media coverage student/teacher, teaching/learning.

#### **4- Problem**

Responding to these needs, the Information Technologies and Communication enables synchronous and asynchronous exchanges of the acts of teaching and learning that can account for a further optimization of the monitoring process on both parts involved. It appears that in some cases due to an effective transfer of information from the progression of the student himself and the teacher, the construction of knowledge is effective, and that this data were used to develop design strategies and technical -teaching to adjust and enhance the ongoing process [10].

In this context, it is accepted that human mediation is important and even central to the learning process, but facilitate it by using tools developed tied to their own IT environments for Human Learning to determine with much greater speed and accuracy when the teacher should intervene in the process and for what purpose. These tools can be configured as systems that are based on various predetermined parameters. One of this parameters is the trail left by computer users on the computer there interaction with the environment [11] it can be a task or activity, allowing and facilitating manipulation thereof for purposes of monitoring in the teaching process and learning.

It is defined in this study the trail, the activity and task as follows: (i) the trail (computer in our case) is the result of activity performed by the user to achieve an objective point of view of the system. It represents the result of "tangible" of elementary actions performed by different actors at the time responding to a demand in the form of a task. These actions can leave one or several tracks. The trail can be a state (flag), a document, a textual answer, one mark (check) etc... [12], (ii) The activity is all the operations targeting a intention, which itself can composed by an action or series of actions that participate in the realization of the task, (iii) The task is decomposed into goals and sub-goals, and finally materializes in the form of shares. For a qualify report of a activity carried out by students and to assess its completeness, it is necessary to identify the traces of this principle.

The knot of the problem is the difficulty in finding the intentions from the proposition up to the task of solving the same activity [13]. By the side of the activity and task, the users' actions are a result of behavioral characteristics related to the accomplishment of the task in the environment. To analyze them in order to make a functional feedback is essential to define the roles and activities related to the proposal put teaching and learning.

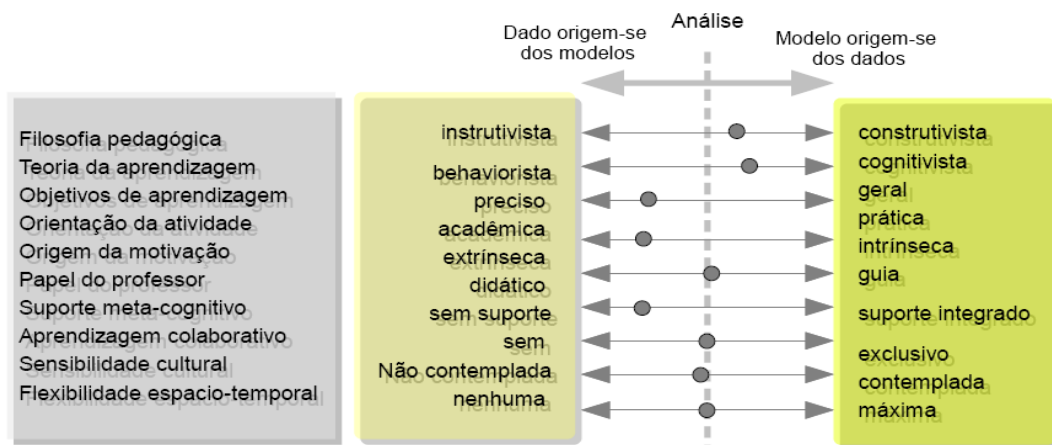
In this work we chose to five papers. The roles are based on the proposed Paquette that separated the design of the course of its implementation in the classroom. In each role are bound actions linked to intentions: (i) the learner transforms information into knowledge, (ii) the transmitter facilitates learning, and (iii) the manager manages the actors and events, (iv) the rater constructs, suitable and maintains the environment and (v) the informant provides the information. Were separated from the concepts of actor and role, and the number of actors can vary, but the roles are required courses. Each share of actors generates one or more tracks that are passed to a specific tool / module of the VLE to be parameterized and modeled on quantitative data suitable for analysis [14].

Putting service users of a VLE System Based on a Trace (Trace-Based System) requires some care, especially at the level of complexity in the information system for reading and reading of results [15]. To meet such a proposal is necessary to create a functional module (tool) monitoring of students in VLE (Eureka), and there is a need to generate a functional interface and efficient [16] that can turn what is valuable information on tracking data value.

In 2009 Yacine et al did a survey of Traced-Based System, which has been shown that most systems: (i) do not offer enough filters and tutors do not understand, often, the meaning of information being placed, (ii) work tutors are not enough or sufficiently traces, (iii) the systems are complex and specific support and training.

To minimize these drawbacks, we developed an assistance system, called SYCATA. In this we used the taxonomy of trails that are associated with various activities. From the viewpoint of the project in this article the approach

on the problem could be increased by the preliminary data of generation of progress (specific situation of teaching / learning), the work plan. This item, the Work Plan is a guide created by teaching managers and raters, (the organizers of learning), essential to the process of ODL, which consists on goals to be achieved in the teaching / learning process, describing in detail the activities to be undertaken to it, organizing the whole process. Teachers, what so ever to make a work plan organize activities and establish clear goals and expectations to be achieved at the end of the process for both involved. To build the work plan is necessary to quantify the needs. For that we use a Reeve's scale [17] that can guide the pedagogical responsible in creating a benchmark on the basis of the strategies, relying on the pedagogical script. Barbara Class [18] links the scale to the Joyce Reeves model teaching [19] that divides families in four models of education: socialization, information handling, individuality and behavioral systems. These dimensions impact on the need and form of feedback. You can check that from such models, one can evaluate an educational tour from the scale of Reeves crossing it with the models of Class. Linking to trace all we have, for example, the following result:



**Figure 1:** Scale of Reeves and feedback. In this figure we see the influence of the methodology applied at the time of conception of pedagogical schedule on the device the necessary monitoring tasks. The model is "acquisition of concept".

From these considerations, we can verify the possibility of generalization under this aspect: the more the characteristics of pedagogical schedule tend to the left of the scale, more the trail has a shape that arises from actions caused by the activities planned in the roadmap. In the direct scale activity is not "controlled", the task is individualized, which reinforces the idea

that the choices are the students for their achievement, so the activity escapes to a single model resolution. At the right data originate from the model, to the left the data that allow the model to be defined.

The pedagogical script can be an important indicator in the question of monitoring the student. The question is what criteria are needed to contextualize the activities and thus able to appropriate of tools by teachers and students. Among them are to question how the transmission is of knowledge is input, is the acquisition of the objectives in output, depending on the set. In this sense, would be measured later in this study, the degree of attractiveness and efficiency of an artifact that do not automate, but questions.

## 5- Final considerations

This study demonstrated that a transdisciplinary approach is needed to tackle the complexity that involves the monitoring of students in a VLE. Also points out some arguments to the effect that one can not think the issue without touching the two general systems involved: the machine and man. It is also as important for this study, the level of engineering; it is necessary to have a focused approach and accessibility of data, the level ergonomic level approach to have a representative that can make sense of the collected information. The system can not be limited to collected data and restore them; it should involve stakeholders to incorporate these features.

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