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Computer system to share first stage teaching strategies

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Abstract

The development of a web platform, aimed at teachers, is presented, in which teaching strategies can be recorded, with sections such as name, description, recommendation of subject and level of education, as well as examples and the perception of its application. It is desired to create a community of registered teachers who interact to share their positive and negative experiences and be this platform the means of communication, to strengthen the resources of higher education teachers. We present the relational diagram of the database already constructed with the attributes congruent to the objective of the system. It shows the first interface of the system in which it is observed what will be the search criteria and the url in which it is being developed in this phase The project involves teachers and students from the Universidad Tecnológica del Valle de Toluca.

Software development, didactic strategies

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Introduction

Good education is undoubtedly a factor of change and improvement of society. Our country Mexico is thirsty for positive changes that enhance the values of men and women who are capable of moving Mexico in the right direction in the social, technological and scientific fields. Higher education plays a fundamental role in the training of professionals with competences relevant to the current time. Competences that break bad habits, that build a society more prepared, more just and more united.

For the development of competences in higher level students, well-prepared teachers are required who, in addition to using the instruction techniques they received in their time, dare to change, complementing their teaching practice with new strategies, recognizing that today's students they do not have the same characteristics as the young people of years ago, taking into account that the means and resources have been expanded and should be exploited.

Justification

The platform that is being developed, is intended to be a space for consulting teaching strategies and also to share the experiences of teachers on the treatment of various topics, to strengthen and expand the resources of teachers. It is expected that this platform will be a support to improve the competences of the students and increase the graduation rate in higher education.

Problem

With the growth of coverage at a higher level, and changes in educational models, student attention has become relevant, seeking to acquire the professional skills of the graduate profile of each career, recognizing that each student is a unique person, with different learning skills, and that teachers have the commitment to seek different teaching strategies to increase the learning of their students, in order to achieve competent graduates in the social, scientific and technological fields.

So the institutions make an important effort to train their teachers with courses, which are valuable, however it is not easy to follow up on the application within the classroom, in addition to the existence of teacher rotation, with which you have to start again the training process. In teaching plants there are professionals with extensive experience who include within their class sessions, innovative, effective and even fun strategies, which includes more ways of student learning. However, in the best of cases these teachers get to comment informally to some colleagues their teaching strategies. On the other hand theoretically they are documented, many strategies with examples of application, in books, in Internet pages and in magazines of educational subjects, likewise in congress forums or in general in face-to-face or online conferences.

This project detects as a problem that the majority of teachers do not have a wide range of teaching strategies to apply in the classroom.

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Hypotesis

By implementing a platform that contains the description of the teaching strategies recognized in the literature, the option that each teacher can enrich their experience with each of them, or upload a new strategy, with suggestions for its application and the results you perceived. It would help the entire teaching staff, to increase their teaching resources, which is expected to have a direct impact on student learning and graduation rates..

Objectives

General objective

Develop a computer platform in which the description of teaching strategies can be consulted, and achieve a teaching community that enriches the content with experiences and new techniques, including videos of the associated teachers, in order to strengthen the teaching skills of the teachers, hoping that it directly impacts student learning.

Specific objectives

- Study and describe the teaching strategies suggested in the literature
- Design of the components that the platform should contain
- Develop the computer platform
- Pilot test. Conduct a teachers' association of the Technological Unversity of the Valley of Toluca for the use of the platform
- Make improvements based on the result of the pilot test
- Extend the invitation to teachers from other Universities.

Theoretical framework

In recent years, Mexico has expanded coverage of the upper and upper secondary level, expanding the infrastructure of universities and building new schools. In higher education, it is worth noting the creation of Technological Institutes, Technological Universities and Polytechnic Universities, gradually increasing the infrastructure of each of them. The subsystem of Technological Universities has been in existence for 25 years, started in 1991. It is currently constituted by 115 schools, serves 245 thousand students, with half a million graduates (Mayer). Regarding the Polytechnic Universities, it is a subsystem that started in 2002, there are already 50 schools, there are also 50 Technological Institutes, in addition to expansion of the offer in Autonomous Universities and Private Campus. In the great majority, the teaching staff has an educational profile at the undergraduate level, or postgraduate, in the various scientific, social and technological areas, not being an essential requirement to have studies in pedagogy, didactic strategies certifications, or similar. The present is a project that pays to the improvement of didactic strategies in higher level teachers.

Research Methodology

A classical methodology is used for technological research (Espejel, 2006), where the procedural level has six stages:

1. Problem Statement
2. Methodological approach directed to the methodological blocks: analysis, synthesis, praxis and synthesis)
3. Protocol design
4. Practical execution that consists of carrying out the actions of the protocol

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5. Summary of the results

6. Integration of the final report

Type of Research

Technological research has as a central objective the innovation or invention of tools, devices and mechanisms to facilitate human work (Espejel, 2006). Therefore, this research is identified as technological since it consists of the development of a platform that facilitates learning and the possibility of sharing various teaching strategies.

Theoretical Methods

The method used to materialize the objective is described in Table 1 in which is the series of steps in each methodological block.

Methodological block	Steps
Analysis	• Study of teaching strategies
Synthesis	• Search for similar web pages and describe their characteristics
Praxis	• Classification of strategies
Synthesis	• Determine the design of the platform

Table 1 Method classified by methodological block

Software Development Methodology

For the development of the platform, the Rational Unified Process (RUP) methodology is used, which identifies four phases: Start, development, and closure or transition. It is a dynamic, iterative methodology that allows the development of software accompanied by system tests and consultations with end users to verify that they meet the requirements (Chacón).

Results

The platform will have the option of registering teaching strategies, in each one you can upload an image, description, the subject (s) and educational level in which it is recommended, example (s) of use and general comments. You will also have the option to register teachers, from which general personal information and your teaching experience will be requested.

The database is already developed, in figure 1 the relational diagram is shown. According to the attributes of each table, the work of recording the different teaching strategies and the teachers is simplified, allowing in the graphic web interface to appreciate in a simple way the different teaching techniques, modifying the content for its update and expanding the quantity of described strategies.

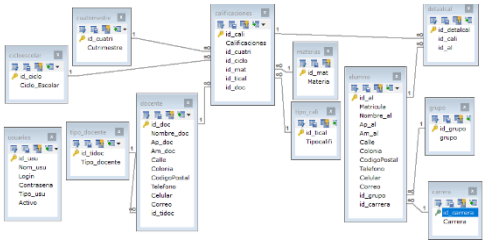

Figure 1 Relational diagram of the database

The system is being developed with the collaboration of students of the career of Advanced University Technician of Information Technology and Communication of the Technological University of Valle de Toluca. Figure 2 shows the interface of the system under development, the url is http://www.evolution-org.online/ for online access. The system will allow searches by name of strategy, topic, or educational level.

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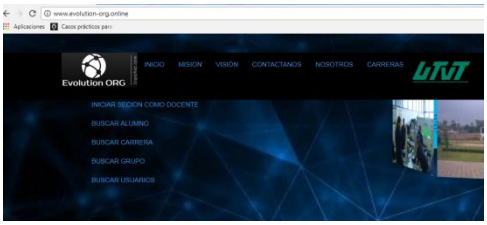

Figura 2 Interfaz del sistema

Conclusions

The platform has the potential to be a valuable tool for the choice of teaching strategies for teachers to cover specific topics, on the internet there is unlimited information on strategies, however, the vision of this system is that in addition to information it includes an efficient means of communication between teachers, no doubt your comments and recommendations are those that enrriqucerán developed tool.

Once the database has been created, the initial strategies that feed the platform have been chosen, the system has been started. The software development must be completed, start with a pilot group of teachers and then be able to include teachers from different careers and universities.

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