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Registro y asignación de asesores de proyectos de investigación en el desarrollo del protocolo de investigación

Registration and assignment of advisers for research projects in the development of the research protocol

Registro e designação de consultores para projetos de pesquisa no desenvolvimento do protocolo de pesquisa

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Resumen

La investigación en el área de ingeniería es un tema complejo al momento de ser abordado en un programa educativo, dado los ambientes de colaboración y sinergias que deben adoptar los alumnos y profesores para el mejor seguimiento de los estudiantes y para una comunicación técnica entre ambos. Esta situación es presentada en este artículo, el cual se enfoca en el programa de estudio de ingeniería en Informática de la Universidad Politécnica del Estado de Morelos, específicamente con dos asignaturas (Estancia I y Estancia II) en las cuales existe un proceso de registro de proyectos de investigación y asignación de asesores para el acompañamiento del alumno en el desarrollo del protocolo de investigación, su implementación y validación de los resultados. Por ende, en este trabajo se propone el desarrollo de una plataforma digital para dar seguimiento a los proyectos de investigación de las mencionadas cátedras.

Palabras claves: informática, ingeniería, investigación, plataforma, proyectos.

Abstract

Research in the area of engineering is a complex issue at the time of being addressed in an educational program, given the collaborative environments and synergies that students and teachers must adopt, for a better follow-up of the student and technical communication of both. This situation is presented in this article focused on the Computer Engineering study program of the Polytechnic University of the State of Morelos, which has two subjects called Estancia I and Estancia II. In these subjects there is a process of registration of research projects and assignment of advisors to accompany the student in the development of the research protocol, its implementation and validation of the results. Therefore, the article proposes the development of a digital platform to follow up on the research projects of Estancia I and Estancia II.

Keywords: informatics, engineering, research, platform, projects.

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Resumo

A pesquisa na área de engenharia é uma questão complexa no momento de ser abordada em um programa educacional, dados os ambientes colaborativos e as sinergias que alunos e professores devem adotar para melhor acompanhar os alunos e para uma comunicação técnica entre ambos. Esta situação é apresentada neste artigo, que enfoca o programa de estudo de engenharia da computação da Universidade Politécnica do Estado de Morelos, especificamente com dois sujeitos (Estancia I e Estancia II) nos quais há um processo de registro. projetos de pesquisa e atribuição de assessores para o apoio do aluno no desenvolvimento do protocolo de pesquisa, sua implementação e validação dos resultados. Portanto, neste trabalho propomos o desenvolvimento de uma plataforma digital para acompanhamento dos projetos de pesquisa das cadeiras acima mencionadas.

Palavras-chave: informática, engenharia, pesquisa, plataforma, projetos.

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Introduction

The purpose of this article is to present a digital platform that allows computer engineering students of the Polytechnic University of the State of Morelos to register their research projects, streamline the review process and encourage research, which is a component increasingly significant in university work (Rico, 1996). For this, efforts have been made to promote the development of projects that allow students to be involved in the application of the scientific method, search techniques and information analysis, as well as in the selection of tools in the areas of Estancia I and Estancia II. relevant according to their respective case studies. In this way, we try to create spaces for students to collaborate with professors from other programs and institutions.

The training of engineering students in the aforementioned institution is an educational model based on competencies, so the evaluation, programming and planning process must be interrelated to offer permanent feedback. This means that you must follow up throughout the curriculum to develop your necessary skills and competencies. This task,

of course, requires compliance with a set of logically linked stages, which can vary according to the purposes set (Díaz, 2005).

Even so, the possibility of managing knowledge as an indispensable element in the transformations required by higher education institutions converts university research (developed in the field of university-society linkage) into a means that increases the spirit of innovation and innovation. generation of knowledge required by a changing social environment, both individually and collectively (Gil, Domínguez, García, Mathison and Gándara, 2012).

On the other hand, it should be stressed that students tend to adopt a positive attitude in the development of work and participation in events (Molina-Ordóñez, Huamaní and Mayta-Tristán, 2008), which should be used to enhance their skills in these areas. For this reason, it has been considered to create a digital platform that offers the registration of the research protocol to offer the student a better feedback. This will serve to train research engineers who can develop their capacity for analysis, synthesis and decision making within a framework of different areas of information technology and artificial intelligence, which will allow them to successfully cope with the challenges imposed by this era. (Lizárraga Vázquez, 2012).

However, among the issues that currently concern our educational system - and which are being the object of interest and attention on the part of researchers, education professionals and the educational community in general - are those that refer to the high failure rates. school in the compulsory stage, absenteeism and early school leaving, as well as problems of coexistence and discipline in schools, and the low degree of involvement and interest of students in academic work (González, 2010).

To address this type of situation, we can mention the efforts of different academics, such as the case of Dr. José Luis López Aguirre, research professor at the School of Communication at the Universidad Panamericana (Mexico campus) (López, August 31, 2016). who teaches materials of informative documentation and virtual seminars to try that their students not only finish their projects, but also publish or present them in different events. In addition to this initiative, it is also convenient to briefly comment on other

initiatives and warnings that must be taken into account when promoting research among the student population.

Motivate interest in scientific research

The Benemérita Autonomous University of Puebla (BUAP) made a design and educational intervention proposal for the development of skills in academic genres of research in higher secondary education. To this end, didactic sequences were applied in the classroom that allowed students to work with the scientific interview to promote inquiry in different areas of knowledge (Gómez, Dieguez and Gómez, 2014).

University research

Academic research has been transformed over time into an activity carried out, mostly by groups of people, which implies a constant interaction among its members around a frame of reference, objects of study and theoretical and methodological approaches. From the process of interaction, the research groups develop different aspects of identity (Bianco and Sutz, 2005).

Hotbeds of research

The purpose of the university research nurseries is to promote inquiry capacity and encourage interaction among professors, researchers and students with a view to strengthening academic excellence, social development and scientific progress of the community, as well as the generation of the capacity to group work and interdisciplinarity, the promotion of a culture of learning and participation in research networks that facilitate communication between educational institutions (Figueroa y Moreno, 2015).

This, in other words, is a strategy that promotes the grouping of students to carry out research activities that transcend the formal academic process, since they can arise from the needs and interests of their members, which specify their projects guided by professors-researchers (tutors) of greater trajectory. The time that a student stays in a seedbed can last until the moment of graduation or until the successful completion of one or several projects

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(Rico, 2014). In this process, the opportunities offered by Web 2.0 are exploited to work collaboratively without taking into account time or space (Botía and Melo, 2008).

Given the above, the following is a proposal of a digital platform to follow up on the research projects of two subjects (Estancia I and Estancia II) that are taught in the computer engineering career at the Polytechnic University of the State of Morelos.

Process for the registration of the research protocol

The process to evaluate the research protocols of the engineering students is handled in stages to facilitate the registration and the assignment of the advisor that will accompany the student throughout the culmination of the project.

Stage I. Protocol registration

The first step of this stage for both teachers and students is to register in advance in the virtual platform (figure 1).

Figura 1. Registro del profesor y el alumno

Fuente: Elaboración propia

Once the registration is complete, the student or professor must log in with the data stored in the database. To do this, you must have a username and a password (figure 2).

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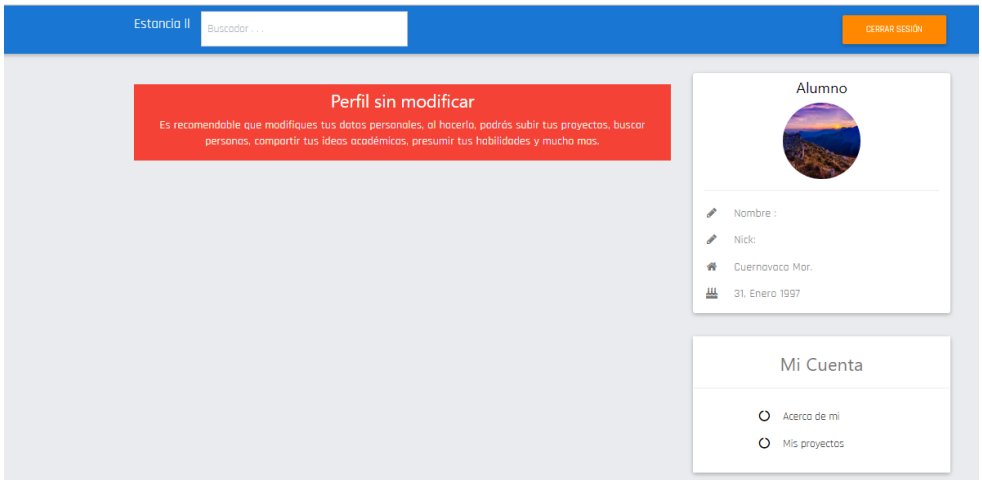
Figura 2. Inicio de sesión

Fuente: Elaboración propia

Then, when entering the digital platform you will be asked to create a user profile to be able to navigate in the system. There you must select the Personal Data tab (Figure 3) to modify the user profile.

Figura 3. Modificar perfil



Fuente: Elaboración propia

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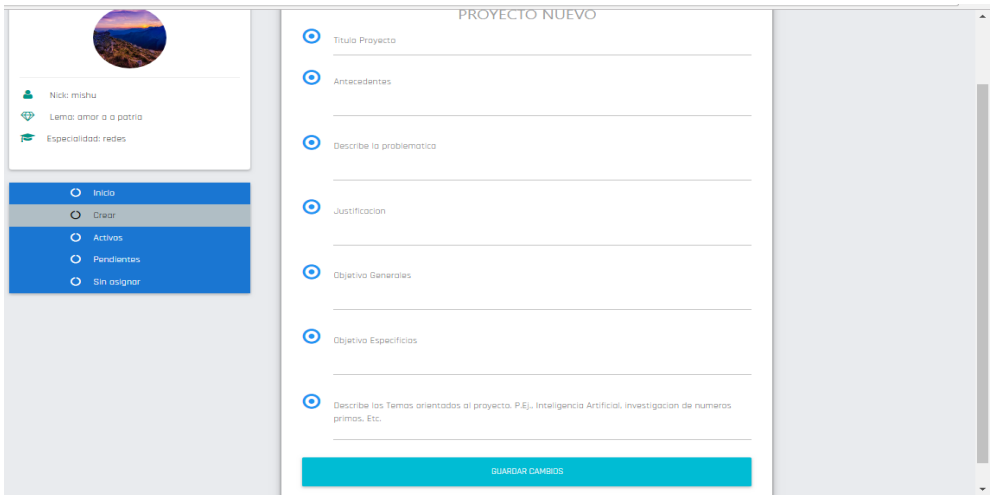
Stage II. Record protocol

In this stage, a new project is registered. To do this, you must select the Create option (figure 4) and then fill in all the fields of the form. In the blue area you can see the various options that can be made in the My Projects section.

Figura 4. Registro de proyecto



Fuente: Elaboración propia

Stage III. Assign project

From the Assign project section, a request will be sent to the teacher. The system is responsible for conducting an internal search on teachers who have a profile that fits the problem, the issue or some other key field of work (figure 5).

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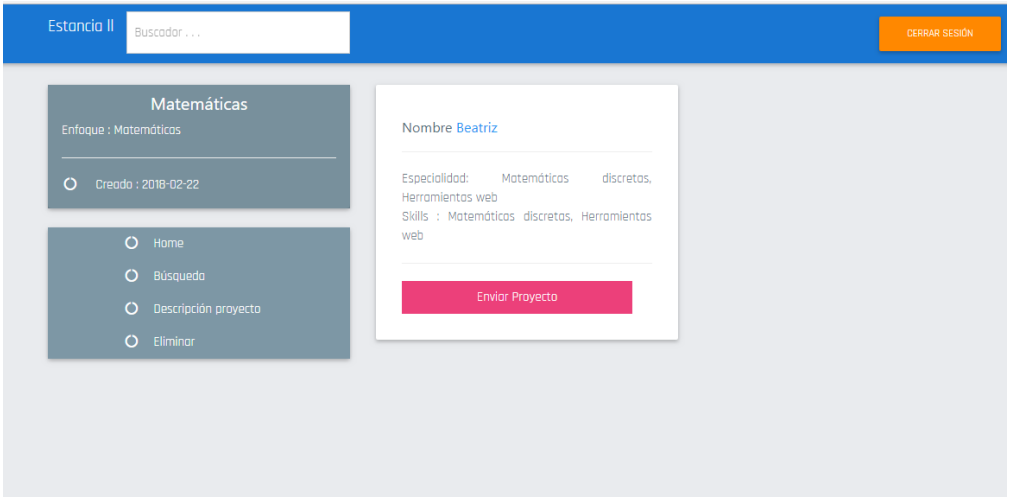
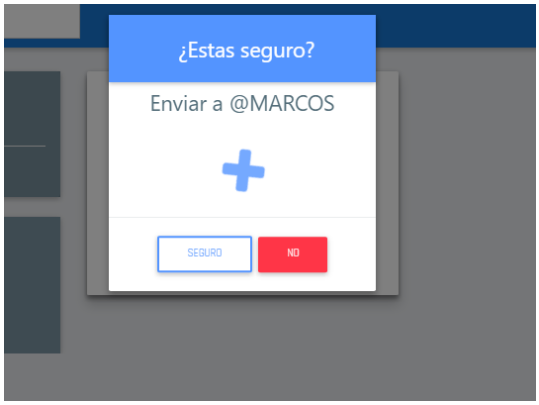
Figura 5. Recomendaciones del profesor asignado al proyecto



Fuente: Elaboración propia

When selecting the Send project option (figure 5) the teacher will receive a notification, which can be accepted or rejected. If he wishes to know the content of the research protocol, he must accept this request (figure 6).

Figura 6. Mensaje de confirmación para colaborar con el asesor



Fuente: Elaboración propia

Stage IV. State of projects

The student has a module where he can observe the status of his projects according to two colors: purple means that they were accepted; red indicates that they are pending to be accepted (figure 7).

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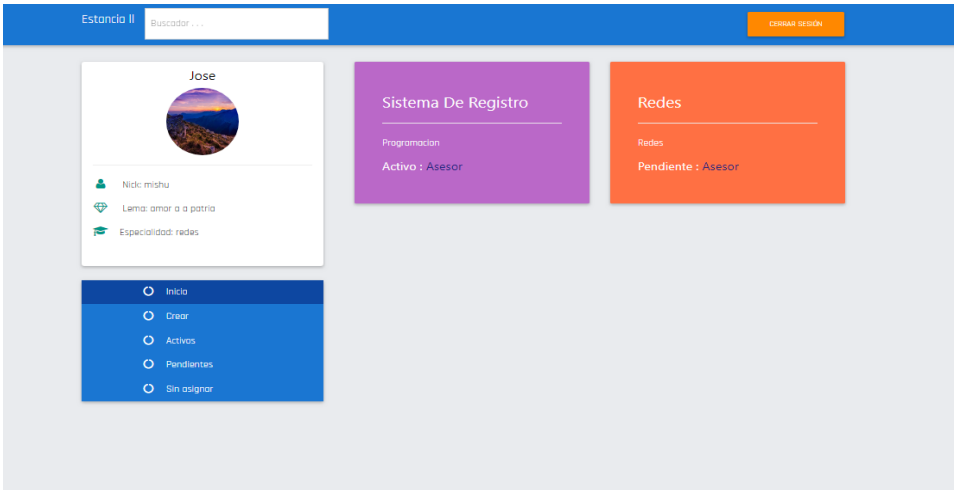
Figura 7. Estado de los proyectos

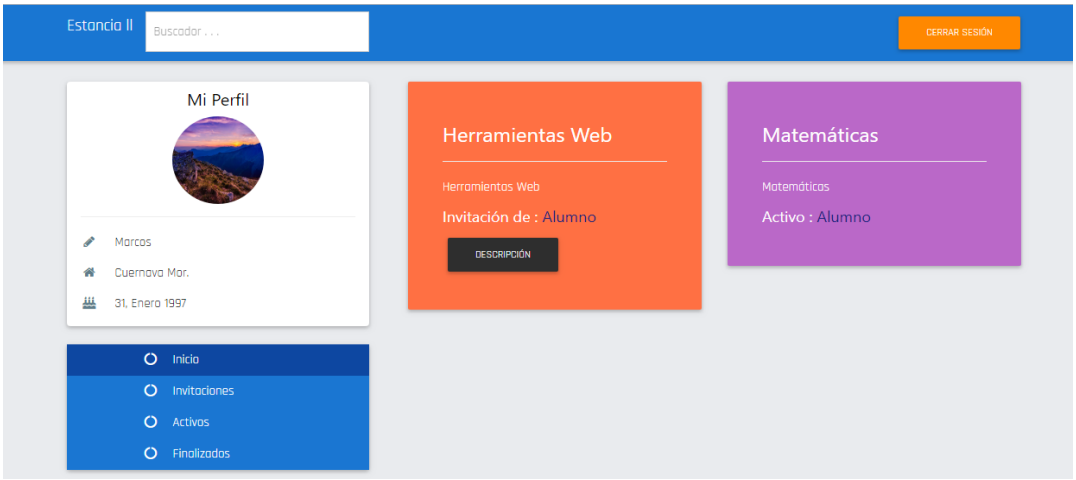


Fuente: Elaboración propia

Stage V. Project requests

The teacher can view the pending applications to accept. Before confirming the collaboration, you can see the description of the protocol and the name of the student who made the request (figure 8).

Figura 8. Solicitudes de proyecto



Fuente: Elaboración propia

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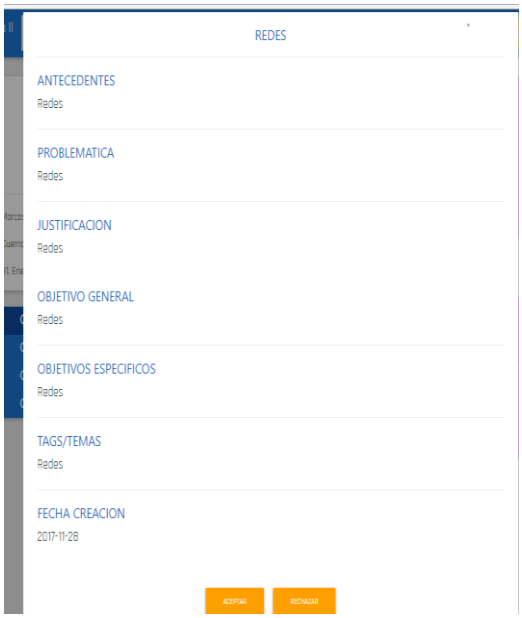
When selecting the option Description (figure 8) the teacher can read the problems raised by the student. In the lower part you can select your answer to this request (figure 9).

Figura 9. Descripción del proyecto



Fuente: Elaboración propia

Conclusions

The digital platform described in this work has allowed Estancia I and Estancia II not only to register research projects, but also to offer guidelines to students to find an advisor who has the most suitable profile to work on the selected topic . This, in addition, allows providing a first contact for teachers and students to establish a collaborative link, which contributes to the training of young researchers, who have the possibility of interacting with specialists from other subjects studied in the semester. In this way, it is intended that these students contribute scientific knowledge to the different areas of information technology, feel committed and motivated with the research and experience the effort that must be made to realize a task of this scope.

This purpose, obviously, may be difficult to achieve; however, it must be assumed through accompaniment and motivation so that students can focus on an area of their interest.

For this, strategies should be used not only within the classroom, but also in other contexts, as well as designing seminars or events where they can participate with a companion teacher.

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