

Implementation of a training plan for the use of ICT within the teaching-learning process for teachers of the U.E. Lautaro Aspiazu Sedeno

(es) Implementación de un plan de capacitación para el uso de las TIC dentro del proceso de enseñanza-aprendizaje para docentes de la U.E. Lautaro Aspiazu Sedeño

(Port) Implementação de um plano de formação para a utilização das TIC no processo de ensino-aprendizagem para professores da U.E. Lautaro Aspiazu Sedeno

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Cervantes-Vergara, M. M. (2023). Implementación de un plan de capacitación para el uso de las TIC dentro del proceso de enseñanza-aprendizaje para docentes de la U.E. Lautaro Aspiazu Sedeño. *YUYAY: Estrategias, Metodologías & Didácticas Educativas*, 1(2), 73–87. <https://doi.org/10.59343/yuyay.v1i2.16>

Enviado: 01-03-2023 / Revisado: 26-03-2023 / Publicado: 02-04-2023



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Abstract (en)

The following proposal is designed from the educational environment and proposes a recognition and management of technological educational tools within the teaching-learning process. This project takes a journey from the recognition of ICT and its importance for its multiple benefits to improve quality in education. The training plan for the formation of digital educational resources, competences that will allow teachers pedagogical innovation resorts to making use of different resources or applications to create content according to their needs and requirements with this would grow the level of education, attending in a timely manner to

students in their different contexts, significantly converting traditional education into modern education with the use of ICT.

The course was structured in five units, the first "Fundamentals of ICT", the second "Internet and Education" the third "Digital Educational Resources", fourth "Workspace Tools", fifth "Tools for the creation of digital educational content": The course has a final evaluation applying the methodology of flipped classroom which promotes autonomous, flexible and practical learning, For this reason, activities with multimedia and interactive information that cause interest and motivation in the participants are proposed.

Keywords: Multimedia, interactive, autonomous, resources, quality.

Resumen

La siguiente propuesta está diseñada desde el entorno educativo y se propone un reconocimiento y manejo de las herramientas educativas tecnológicas dentro del proceso de enseñanza aprendizaje. Este proyecto realiza un recorrido desde el reconocimiento de las TIC y su importancia por sus múltiples beneficios para mejorar la calidad en la educación. El plan de capacitación para la formación de recursos educativos digitales, competencias que permitirán a los docentes la innovación pedagógica recurre a hacer uso de los diferentes recursos o aplicaciones para crear contenidos acordes a sus necesidades y requerimientos con ello crecería el nivel de educación, atendiendo de manera oportuna a los estudiantes en sus diferentes

contextos, convirtiendo significativamente la educación tradicional en una educación moderna con uso de TIC.

El curso fue estructurado en cinco unidades, la primera “Fundamentos de las TIC”, la segunda “Internet y Educación” la tercera “Recursos Educativos Digitales”, cuarta “Herramientas Workspace”, quinta “Herramientas para la creación de contenidos educativos digitales”: El curso posee una evaluación final aplicando la metodología de aula invertida la misma que promueve un aprendizaje autónomo, flexible y práctico, por tal razón se plantean actividades con información multimedia e interactiva que cause interés y motivación en los participantes.

Palabras claves: Multimedia, interactivo, autónomo, recursos, calidad.

Summary

A proposta a seguir é elaborada a partir do ambiente educacional e propõe um reconhecimento e gestão de ferramentas educacionais tecnológicas dentro do processo de ensino-aprendizagem. Este projeto percorre um percurso desde o reconhecimento das TIC e a sua importância para os seus múltiplos benefícios para a melhoria da qualidade na educação. O plano de formação para a formação de recursos educativos digitais, competências que permitirão aos professores a inovação pedagógica recorre a fazer uso de diferentes recursos ou aplicações para criar conteúdo de acordo com as suas necessidades e exigências, aumentando assim o nível de ensino, servindo os alunos nos seus diferentes contextos em tempo útil, convertendo

significativamente a educação tradicional em educação moderna com o uso das TIC.

O curso foi estruturado em cinco unidades, a primeira "Fundamentos das TIC", a segunda "Internet e Educação", a terceira "Recursos Educacionais Digitais", a quarta "Ferramentas de Espaço de Trabalho", a quinta "Ferramentas para a criação de conteúdo educacional digital": O curso tem uma avaliação final aplicando a metodologia de sala de aula invertida que promove a aprendizagem autónoma, flexível e prática, Por esse motivo, são propostas atividades com informações multimídia e interativas que causem interesse e motivação nos participantes.

Palavras-chave: Multimídia, interativo, autónomo, recursos, qualidade.

General diagnostic

The Lautaro Aspiazu Sedeño Educational Unit (UELAS), which is located in the Palenque parish of the Palenque Canton of the province of Los Ríos, detected the lack of innovative methodological evaluation strategies for its students due to the lack of knowledge about the management of these, and the lack of training provided by the Ministry of Education and institutional authorities on the use of different platforms that allow to develop simple, practical, and fun evaluations.

The scarce use of digital tools in the evaluation process causes the student to show a total disinterest in the preparation for them, it should be emphasized that it is important that teachers change strategy in order to prepare students for the tests to be a student which are applied by INEVAL in order to check the applicability of the standards of institutional educational quality as well as to The transform tests that are applied for admission to fiscal universities.

It is necessary to make a change in the applicability of evaluations, whether they are diagnostic, formative or summative, through innovative strategies that include the use of technological tools such as Google Forms, Educaplay, Genially, YouTube, Socrative, among others that allow the creation of structured base questionnaires in accordance with the guidelines issued by the Ministry of Education for the application of evaluations at the national level in all institutions. Educational.

Technology has been gradually incorporated into teaching-learning processes, and intrinsically in evaluation, contributing to the generation of current dynamics and in some cases disruptive or unimaginable in education, for this reason its use and integration is perceived as necessary and beneficent as mentioned by Olvera et al., (2011).

It is necessary to emphasize that within the existing problem in educational institutions is the lack of one of the most important educational components within the teaching-learning process such as evaluation that requires greater attention due to the great advances in technology, so it constitutes a challenge and frames greater effort on the part of teachers to generate significant changes and transformations within its application within the classroom.

Methodology

The teaching-learning methodology to be applied in this proposal is Flipped Classroom since it focuses on the learning of the participants and not on the teaching of the teacher, being a didactic strategy that focuses mostly on practice that is to say this pedagogical model consists of inverting the order of traditional education since the student takes an active role in his learning process through an interactive environment in which the teacher becomes a guide and facilitator of learning, a process in which students are involved and actively participate in the classroom building their learning.

In flipped learning, the student can obtain and have information without the need for the physical presence of the teacher, since the aim is for the student to increase their commitment and responsibility in the learning process, allowing them to self-train in an integral way, discovering and developing skills according to their requirements (Prieto et al., 2021) and that four fundamental aspects are needed to consider to apply flipped learning.

It begins with "Flexible environments" which he mentions (Mancero, 2022) by expressing that these helps provide students with spaces so that they have the option to choose when and where they can learn. The culture of learning according to Mayea-Carpio (2022) Create in students the culture in which they are the protagonists of their learning, and the teacher becomes a guide who will support and deepen knowledge and expose or present different alternatives, options, and opportunities, giving them a clearer vision for the acquisition and construction of their knowledge. Totally transforming the traditional methodology.

Again Mancero (2022) recognizes that there is a type of intentional content which must be thoroughly analyzed the content to be presented and made available to students should allow students to develop their potential and acquire educational skills becoming critical people. Mayea-Carpio (2022) and Serrano (2022) refer to the "professional teacher" as the main gear of inverted learning the teacher must organize the time in the best way so that students can interact and participate actively distributing activities, tasks and evaluations among others that can be developed inside the classroom and outside it (Mayea-Carpio, 2022).

A Fidalgo-Blanco and ML Sein-Echaluce. (2020) comment that the flipped classroom is a methodology that is part of the new modalities of study due to technological progress and online learning, through this information can be presented in different formats which causes interest and motivation in students, encouraging effective and timely participation, they also opt for personalized and autonomous learning.

Development of the plan

To structure an adequate training for the educational environment, the use of Moodle as a digital tool was selected with an integrated system that allows creating personalized learning environments according to needs and requirements is a means to develop and manage online training spaces, it is designed for educators, administrators, and students (Rodríguez, 2018).

Among the features of the Moodle platform is the one that is updated to its versions with improvements to meet the needs of teachers and students. Its versatility features multiple template options to customize the environment, even within its most standard version. Its interface is very intuitive and easy to handle according to the type of server on which it is being installed.

As an LMS, it offers different activities and collaborative tools while allowing access to reports of activities or student performance. The LMS includes an academic calendar in which activities can be organized according to the instructional schedule thanks to its simple and intuitive text editing.

Resources:

Genially: It allows you to create interactive content (individually or collaboratively) attractive and effective. It allows the creation of multiple formats such as presentations, flipped classrooms, infographics, interactive images, guides, etc. It has a paid subscription, but its free version is very complete (Mayea-Carpio, 2019).

Canva: It is a platform to create images and graphic designs more visual, but not interactive. It is simpler than Genially so it offers a good alternative for teachers with less digital knowledge / skills and for the students themselves to create visual content.

Liveworksheets: Serrano (2022) that liveworksheets allows you to transform any traditional worksheet in doc, PDF, jpeg format. into an interactive sheet with auto-correction. Students can take the activity online and send their answers directly to their teacher or see the answers at the end of the activity. The exercises can incorporate audio and video and offer several types of questions.

EducaPlay: It is a web tool that allows teachers to create different types of multimedia educational activities, through various scenarios or activities such as crosswords, word search, riddles, dictations, among others.

Wordwall: It is a digital resource that allows you to create and edit activities for the classroom in a simple way. With Wordwall you can create different types of games for students (Mancero, 2022).

Following the data collected during the analysis phase of this project, it has been considered that the learning outcomes can be distributed in five units with their respective sub-themes and learning achievements for a virtual training plan with 40 hours of learning in which asynchronous and synchronous learning has been considered from the ARCS structure.

Table 1
Categories, definitions, and motivational strategies of the ARCS Model

Category	Definition	Motivational strategies
Attention	Capture students' interest and stimulate their curiosity to learn.	Incongruity and conflict Concretion Variability Humor Research Participation
Relevance	Consider the personal needs or goals of the student to generate a positive attitude.	Experience Current value Future utility Need for play Modelling Election
Confidence	Help students believe they will succeed and know how to control it.	Learning Requirements Difficulty Expectations Powers Self-confidence
Satisfaction	Reinforce achievements with internal and/or external rewards	Natural consequences Unexpected rewards Positive results Negative influences Programming

Source: Martha Cervantes (2022)

Table 2
Detail of work units

Learning achievement: At the end of the course participants will be able to: Identify the fundamentals of ICT, apply the knowledge acquired on digital resources in the educational process, having the necessary skills to create content and implement in their classrooms.	
Learning outcomes by unit	Detail of units
Obtain knowledge about the fundamentals of ICT, for the proper use of technologies and the improvement of different activities of the teacher.	Unit 1: ICT Fundamentals
Use the different tools available on the Internet to acquire truthful and usable information in the teaching-learning process.	Unit 2 Internet and Education
Know different digital educational resources that are used in the pedagogical field to innovate teaching practices.	Unit 3 Digital Educational Resources
Apply Workspace tools in pedagogical management according to requirements and context.	Unit 4 Workspace Tools
Use technological tools for the creation of digital pedagogical content, with multimedia and interactive information.	Unit 5 Tools for the Creation of Digital Educational Content

Source: Martha Cervantes (2022)

We can access Google Sites through the following link <https://sites.google.com/mgs.ecotec.edu.ec/tic-para-docentes>

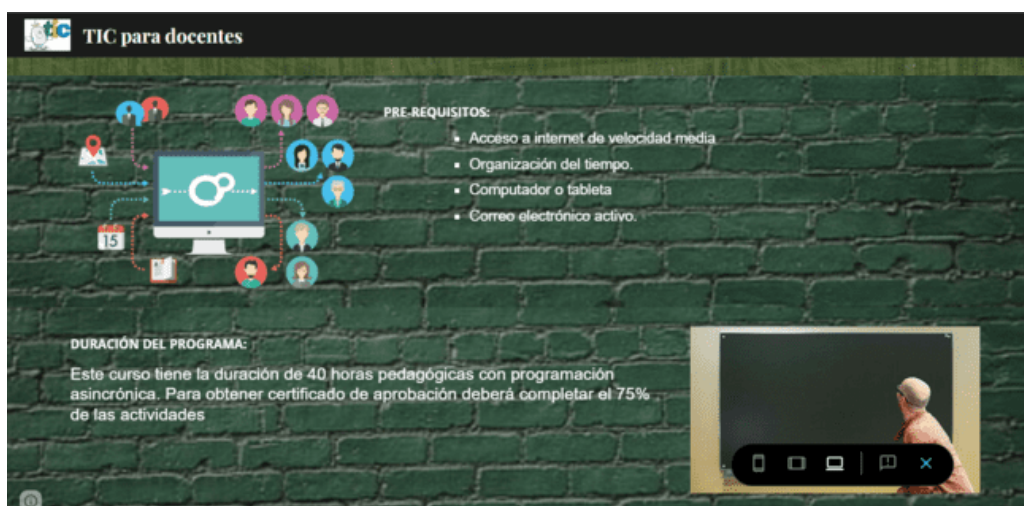
Figure 1
Course presentation on SITE



Source: Martha Cervantes (2022)

The presentation has been prepared under a minimalist concept (regarding tones) so as not to generate visual noise with the resources (images) that can accompany the text. Also, the detail of the course proposes a very brief but concrete explanation of the general objective of the training plan.

Figure 2
Pre-requisites and duration of the program (SITE detail)



Source: Martha Cervantes (2022)

Analysis. An essential point to design a learning environment is the analysis of the students, the content, and the environment, that is, an assessment of needs that allows identifying both the profile of the students and the contextual conditions, which may affect the teaching-learning process, which reveals the nature of a certain problem to be addressed and its possible solution alternatives (Morales-Gonzalez, 2014).

Figure 3
Learning Outcomes at SITE



Source: Martha Cervantes (2022)

The curriculum process of the training plan envisages the completion of five instructional objectives designed as "learning outcomes". The fulfillment of this is aligned with the forty-hour training proposal and its respective certification weighted in figure four.

Figure 4
Methodology and detail of the units in SITE



Source: Martha Cervantes (2022)

When developing their proposal, the methodological proposal proposed by Lage et al. (2000) has been based on the need to match the different types of learning of the multiple students gathered in a group and the teaching style of the teacher. With this premise, the use of multimedia is considered as an instrument that allows the student to choose the best method and space to acquire declarative knowledge at their own pace (Coufal, 2014; Lage et al., 2000; Talbert, 2012), especially if the material is web-based or easily accessible; transferring responsibility for the apprehension of content to the learner; and to the teacher, the

organization of his practice in order to guide the activities towards the goal set (Bristol, 2014, Lage et al., 2000).

Figure 5
Detail of the rubrics within the training plan

TIC para docentes		Realizar un comentario a un compañero, para cerrar la actividad			
INDICADORES	MUY SATISFACTORIO 4	SATISFACTORIO 3	POCO SATISFACTORIO 2	INSUFICIENTE 1	
Contenido	Toda la información provista por el estudiante es precisa y todos los requisitos y actividades han sido cumplidas.	Casi toda la información provista por el estudiante es precisa y todos los requisitos y actividades han sido cumplidas.	Casi toda la información provista por el estudiante es precisa y casi todos los requisitos y actividades han sido cumplidas.	Hay varias inexactitudes en el contenido provisto por el estudiante o muchos de los requisitos y actividades no han sido cumplidos.	
Participación	El estudiante siempre participa de manera activa exponiendo criterios y opina sobre las ideas de los demás compañeros.	El estudiante participa parcialmente exponiendo criterios y opina sobre las ideas de los demás compañeros.	El estudiante participa exponiendo sus criterios e ideas.	El estudiante no participa de los foros del curso.	PUNTAJE
Puntualidad	Se cumple adecuadamente con los tiempos sugeridos para el desarrollo y presentación de	Se cumple parcialmente con los tiempos sugeridos para el desarrollo y presentación de	Las tareas se realizan y presentan fuera de tiempo	No se cumple con los tiempos sugeridos para el desarrollo y presentación de actividades	Argumento 2 puntos
Presentación	La presentación de las actividades es correcta, contiene la información precisa y es ordenada.	La presentación de las actividades es correcta y la información es apropiada	La presentación de las actividades es parcialmente ordenada y correcta	La presentación de las actividades es deficiente.	Argumenta respuesta a un comentario de sus compañeros 2 puntos
Evaluación	El estudiante desarrolla adecuadamente las evaluaciones de todas	El estudiante desarrolla adecuadamente de 3 a 4 evaluaciones.	El estudiante desarrolla adecuadamente de 1 a 2 evaluaciones.	El estudiante no desarrolla las evaluaciones.	Entrega actividad 2 puntos
					Comentario 2 puntos
					Falsas certificaciones 2 puntos
					TOTAL PUNTAJE

Source: Martha Cervantes (2022)

According to Hernández et al (2016) the processes of improvement of teaching performance and comprehensive training that students require in a changing context dominated by technology has been left aside (Tobón, 2012b). Although the competency approach is one of the proposals that emerges internationally with great force to achieve authentic training that responds to the demands of the twenty-first century, and even promoted through international organizations.

Figure 6
Technical data on the teacher

TIC para docentes

Acceso al Curso - Moodle

SOBRE LA DOCENTE



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Source: Martha Cervantes (2022)

Recommendations

The functionalities and use of the components or internal tools of the Moodle platform were analyzed and known and with this the training plan was carried out in a very satisfactory way, using and applying several resources such as forums for presentation and presentation of criteria, glossaries of terms referring to the subject, labels for titles, pages to enter different information such as videos, resources of Genially, Canva, Url, files in pdf format and images and questionnaires, with this he could present the information in a dynamic and varied way.

As teachers we must take advantage of the information collected regarding the technological educational resources that can be used and implemented for the teaching-learning process to improve teaching practices, looking for alternatives that allow creating digital educational content. All the information was organized to handle the subject in order, having a correct and appropriate advance for the acquisition of knowledge.

It is necessary that we preserve the methodology of organization by "study units" since in this way each of the units may have up to three sessions and an evaluation in each unit, in addition the training plan has a final questionnaire that encompasses and evaluates in a general way all the contents of the course, making the learning process more dynamic.

The information presented in this type of planning must make use of multimedia resources and interactive activities that are permanently available to the participant, that is, that can be reviewed at the time desired; With this, users will maintain interest and motivation, they will also be able to acquire skills and build their knowledge autonomously and according to their time availability.

Both formative and summative assessment activities to measure knowledge and skills acquired in the course by the participants, with which the scope of the learning outcomes can also be known. It is recommended that the evaluations are carried out using Moodle resources, as well as external tools such as Liveworksheets, Quizizz, EducaPlay, Genially, among others, with this the evaluations are presented in different ways and dynamics.

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