Diploma course "ICT and informational advanced competences for in-service primary and secondary teachers in Mexico"

Diplomado de TIC y competencias informacionales avanzadas para maestros en servicio de primaria y secundaria en México.

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Resumen

En el marco de la Reforma Intgral de Educación en México el tema que concierne a la investigación implica la necesidad de entrenar, actualizar y especializar a los maestros en servicio de educación básica en México en competencias TIC para su uso en el proceso de enseñanza-aprendizaje.

Para ello se propone la metodología CEyA como una alternativa que contribuya al proceso de diseño, implementación, revisión, adaptació, monitoreo y evalución del diplomado para los maestros en servicio de primaria y secundaria en México.

Abstract

Within the framework of the comprehensive reform of basic education in Mexico the subject that concerns the research implies the need to train, update and specialize in service-teachers of basic education. This diploma course is based on CEyA methodology created by the authors of the project.

CEyA methodology is proposed as an alternative that contributes to the process of design, implementation, revision, adaptation, monitoring and evaluating the diploma course for in-service primary and secondary school teachers in Mexico.

Palabras clave/ keywords
Maestros en servicio, uso de la tecnología en educación, competencias.
In-service teacher education, technology uses in education, competency based teacher education.

Citation

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[1] Project in course

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Project in course

Within the framework of the integral education reform in Mexico the subject that concerns the research implies the need to train, update and specialize in- service teachers of basic education, e.g. educators, teachers of primary and secondary schools who are immersed in a world of digital natives, a world in which they have a responsibility to mediate between individuals and the environment that surrounds them, an environment increasingly more technocratic and needed of searching items that contribute to establish bridges of communication capable to orientate technology towards a more assertive social benefit.

Online courses, multimodal and/or mixed designers are facing new challenges, new paradigms that offer the opportunity to redefine their practice teaching, their way of designing, implementing the ICT in their school practice and even learning.

The purpose of the research is to propose a diploma course on ICT and informational advanced competences.

The National Laboratory of Advanced Informatics (LANIA), with mixed funds of CONACYT has engaged in the development of a Course about Information and Communication Technologies Competencies and information literacy for elementary school educators. In the framework of the Elementary Education 2009 Reform, this course aims to foster the information literacy and ICT competencies needed for a Twenty First Century Educator's integral development, which includes, on the one hand, the educator's awareness of changing the way he lives, works, learns, teaches and shares what was learned; and, on the other hand, the possibility of forming informed-citizens capable of contributing with their social environment.

The courses that have been organized in LANIA using ICT in the classroom lacked of methodological elements that permit to develop competencies and demonstrate how they are developed in terms of students´performance.

Together with the lack of methodology that would contribute to the development of ICT competencies, in-service training teachers of basic education in Mexico don not have preparation to work with ICT in the classroom. And this is a necessity of the nowadays society. The curriculum of any programm of basic education in Mexico do not include subject matters referred to the incorporation, use and develop the ICT in the classroom.

Besides the absence of ICT in he curriculum design of basic education teachers, the programs do not are designed by competencies. In the present day competency based teacher education is not well developed in Mexico.

The curriculum of basic education teacher do not include contents that permit the formation on ICT competencies, the teachers in formation do not have access to on–line courses, they do not know how to use platforms, virtual environments, they do not manage informational competencies to use ICT in the classroom.

The lack of ICT formation in the curriculum design of basic education teacher in Mexico could be solved implementing a methodology that contributes to develop ICT competencies and to evaluate the level of teacher´s and student´s performance.

The action of determining, selecting and identifying a level of performance permits the teacher to define and built his personal formation and also know his level of learning when he does any activity or a series of activities.

Nowadays the education process needs the use of new methods to learn, to communicate in different ways and to use the information, methods that permit to develop competencies and determine the level of the competencies´ development and evaluation, and also establish new levels, profiles and learning.

The research started from a diagnosis of an on-line course where a group of basic education teachers in Mexico participated in LANIA in 2010. The diagnosis evaluated aspects such as organization and objectives of that course and also activities that permitted identify pros and contras, opportunities, handicaps and difficulties that took place during the development of that course.

Based on that diagnosis a methodology is proposed with the aim to facilitate the teaching-learning process using ICT in the classroom. This methodology permits both, teacher and student, to be active participants in the process.

The research was done during November 2009 and March 20011 and it was an action-research process that included designing, colleting and interpreting data to find solutions for needs and requirements, and also it permitted that all the participants, e.g. program's designers, students, tutors, instructors, administration personnel, programmers could work together in the Diploma course "ICT and informational advanced competences for in-service primary and secondary teachers in Mexico".

For that reason, the action-research is a kind of participative, because it is a combination of theory and practice, where the practice process enrich the theory and vice versa.

When participating on the design, implementation and evaluation of the diploma course, the researchers enriched their practice in collaboration with the participants and the distance between them is reduced.

This diploma course is based on CEyA methodology created by the authors of the project. CEyA (capacitación, especialización y actualización docente) is an acronym that references to the concepts like training, specialization and updating the teachers.

CEyA methodology is proposed as an alternative that contributes to the process of design, implementation, revision, adaptation, monitoring and evaluating the diploma course for in-service primary and secondary school teachers in Mexico.

The diploma course is composed by 4 modules.

- The first one is addressed to increase teachers´digital literacy.
- The second one trains teachers in the use of ICT basic competences in the classroom.
- The third module contains activities for training teachers in the selection and use of the web information for educational purpose.
- Finally, the fourth module is dedicated to the use of advanced ICT competences at the virtual environment for educational purpose.

CEyA methodology contents elements that are addressed to formation competencies and evaluation performances. The elements that integrate CEyA methodology are the following:

1. Determination of competencies (generic and specific).
2. Determination of performances.
3. Identifcation of desired learning
4. Determination of input profile.
5. Determination of output profile.
6. Selection of contents.
    6.1. Concepts
    6.2. Abilities
    6.3. Values.
7. Activity.
8. Task.
9. Activity purpose.
10. Time to do the activity.
11. Products.
12. Evaluation.
    12.1. Evaluation techniques and instruments.
    12.1.1. Problem-solving.
    12.1.2. Case study.
    12.1.3. Project.
    12.1.4. Conceptual maps.
    12.1.5. Diary.
    12.1.6. Discussion.
    12.1.7. Essays.

As an example of the application of CEyA methodology, it is presented a lesson planning

Title of the activity
Previous knowledge about the informational literacy

Description of the task
Without consulting any resource take participation in a CHAT to discuss about the following topics: ¿What is informational literacy? ¿What are ICT? ¿What does "be informed" mean? *After answering the questions using the CHAT , the student-teacher write down his answers using a WORD document and send it to the teacher using the MOODLE platform*

Purpose
Share the knowledge about the informational literacy using CHAT and WORD document.

Contents		
Concepts	*Abilities*	*Values*
• Infromational literacy • Chat • Information • Comunication	• Writing • Composition • Ortography • Discussion	• Respect participant´s opinions • Share opinions among the participants • Expresss personal opinions • Participate actively
Time	*Product*	*How to send*
60 minutes	*A written WORD document*	MOODLE platform

Desired learning		
Express the knowledge about the informational literacy and share ideas and opinions about the same topic.		
Competencies		
Know the importance of ICT use in education and its possibilities as support the teaching practice.	Use technology to learn	Learn to produce knowledge
Evaluation criteria		
Respect the others´ opinions and collaborate in doing the task	Give personal opinions about informational literacy, information y communication. Write without mistakes and use the correct style.	*A written WORD document*

Evaluation techniques and instruments		
Questions and answers, use of previous knowledge		
Performance level criteria		
Excelent performance	Good performance	Entry performance
Participate actively on chat, be propositive, argue personal opinions

Give personal opinion about informational literacy and try to give personal concepts about information and communication, use CHAT, write a report correctly

Write a conclusion about the informational literacy and send to the teacher using MOODLE platform. | Participate on CHAT, be propositive, argue personal opinions

Give personal opinion about informational literacy and try to give personal concepts about information and communication, use CHAT, write a report with some difficulties in its composition.

Write a conclusion about the informational literacy and send to the teacher using MOODLE platform. | Participate on CHAT, argue personal opinions

Do not give personal definition of informational literacy
Give concepts about information and communication, use CHAT, Write a report with some mistakes that difficult its comprehension.

Write a conclusion about the informational literacy and send to the teacher without using MOODLE platform. |
| Suggestions | | |
| Start | Development | Conclusion |
| Know how to use CHAT, finding the link on the upper left side of the platform | Participate trying not to be repetitive; argue, express ideas, share ideas with the participants, respect turns to speak, take notes of participant´s ideas and opinions | Use the notes taking during the CHAT.
Write a WORD document about the personal ideas and opinions from CHAT.
All the activities should be saved in the student´s portfolio. |
Resources		
WORD document	Media	Web and links
¿What is CHAT?	Use of CHAT	No available
Feedback		
Know implications of the use of ICT in education and its possibilities to support the education process due to search about different strategies for searching, analyzing and sharing information. Previous knowledge permits to know about the cultural background of a person when asking: What is informational literacy?
What do we know about ICT? What does be informed mean?
When sharing answer there appear the possibility to reach to the subject matter, to ask ourselves what we know about it and what we need to know. When participating on CHAT we live a new experience, when writing conclusions about the ideas and opinions we have expressed on CHAT, it permits to think about what we have done and to have the opportunity to observe pros and contras of the subject matter.		

Conclusion

The development of ICT competencies and the conveying them in performances it is not an empiric process. The teacher who pretends design a competency-based course should follow a methodology that permits him to fulfill the objectives. CEyA methodology contributes to the formation of ICT competencies since the design until the performance evaluation.

The present research combines the practice with the theory and has the objective of presenting contents to help the teacher in designing, implementing and evaluating the task, to help students in analyzing, doing, producing and receiving feedback about the task.

CEyA methodology considers the student and the teacher who are involved in the course as generator of changes and propositive agent, and gives important elements to determine parameters and action lines to improve the quality of education.

CEyA methodology is created not only to design, aplicate and evaluate the competencies throughout the activities and its development but also to organize and evaluate the course, influencing on the administration and management of the resources.

All educational process is possible to be improved and should be adapted to different contexts. For that reason all the elements that conform CEyA methodology are necessary and can not be excluded each other, because they integrate a unity that permits convey competencies into performance.

As more organized the course activities are, better a teacher could reach his objectives with the students.

CEyA methodology is based on an interaction between theory and practice.

An example of this was the diagnosis that permitted to make decision to improve the quality of the diploma course.

Proposing contents and activities that permit to develop competencies using CEyA methodology mean a better comprehension of the teaching-learning process based on competencies. It permits the use of new educational practices where the students could take an active participation in their personal learning, and the teacher gives elements and resources necessary for students to reach the goal in the development of ICT competencies and their performance.

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