

New education model in the FCQeI – UAEM

Proceedings of European Congress of Chemical Engineering (ECCE-6)
Copenhagen, 16-20 September 2007

New education model in the FCQeI – UAEM

León-Hernández Viridiana,^a Melgoza –Alemán Rosa María,^b Osornio-Alcaraz Laura Oliva,^a Domínguez-Patiño Martha Lilia^b

^a*Facultad de Ciencias Químicas e Ingeniería, Universidad Autónoma del Estado de Morelos, Av. Unieversidad 1001. Col. Chamilpa C.P. 62209, Cuernavaca, Morelos, México.*

^b*Facultad de Ciencias Químicas e Ingeniería/ Centro de Investigaciones en Ingeniería y Ciencias aplicadas, Universidad Autónoma del Estado de Morelos, Av. Unieversidad 1001. Col. Chamilpa C.P. 62209, Cuernavaca, Morelos, México.*

Abstract

In September of 2005 the “continuous improvement of processes” academic corps (AC- CIP) began a project of intervention exploratory tutorship in the Chemical Sciences and Engineering Faculty (FCQeI) of the Morelos State Autonomous University (UAEM), with the purpose of take advance in the knowledge of the existent conditions and to extend the vision of students, teachers and authorities in communication with the activities of the individual and group tutorship program. The conclusion corroborates that in the FCQeI, there are enough conditions to create a formal tutorship program. With this basis the CA decides to formulate a tutorship program and to propose it to authorities of the FCQeI – UAEM to try to obtain its institutionalization and set it in a formal way, for to get on the benefit effects in the educational, administrative, labor and budget parts. The program has been designed in three stages a) adaptation stage, b) transition stage, and c) consolidation stage. The scheduled activities are: The permanent formation of tutor teachers, the design of the activities with base in the axes of 1) academic orientation and adaptation to the UAEM institution, 2) development of abilities for the learning and the self teaching and 3) development for the student's integral formation. This paper shows the main results of the tutorship program in the FCQeI – UAEM for the establishment of a new educational model into the chemical engineers program with the participation of the teachers and assessor with a new roll outside the classroom. The Tutoring is a fundamental part of a new educative model and by means of the commitment of tutors, professors and students, is a strategic tool in where the self-directed learning is a fundamental axis for the formation of professionals of engineering.

Keywords: Tutoring Program, Education Model, intervention exploratory, individual and group tutoring, outside classroom

1. Introduction

Before the new world order, the society of the knowledge and the use of the new technologies of the information and the communication (NTIC), new curricula of chemical engineering they demand designs focused in the emergent paradigm of the learning centred in the student, development of professional competitions, the abilities of self-learning and the formation throughout the life. Under this context, el AC-CIP of the FCQeI-UAEM, to aim to contribute to elevate the quality of teaching by means of the improvement of the circumstances of the learning, to diminish the scholastic desertion and to increase the terminal efficiency, elaborated the Tutoring Program like a support for the students in the development of professional competitions, the construction of values, attitudes and habits, as well as, direction in the disciplinary fields, offering greater opportunities to them at its integral formation. Tutoring Program was designed proposing two modalities of tutorial intervention: a) Individual tutoring - that consists of the customized attention to a student on the part of the tutor who will accompany it during his academic trajectory, and b) Group tutoring - the one that offers attention to a group of students, developing collective activities in a reasonable time once to the week.

The tutorial actions for the development of the program considered in three stages:

First stage: *Adaptation*. This stage settles down for the students of first entrance to the FCQI. Its objective is to allow the adaptation of the student to the Institution and the Faculty, as well as of the development of competitions to generate and to administer its own plan of learning. This stage also contemplates a permanent program of formation for the academic ones that makes the tutorial activities.

Second stage: *Transition*. This stage was established for students of intermediate semesters of the Faculty. The tutorial action emphasizes activities that support and fortify the integral formation of the student and its integration to the sport programs, cultural, participation in professional societies and of student mobility.

Third stage: *Consolidation*. The activities of this stage settle down for students of the last year of the degree. The tutorial action emphasizes the development of social competitions and employment ability of the student for its integration to the productive sector or to a post degree.

In addition to the described tutorial actions, the Tutoring Program considers the permanent formation of tutor teachers, the design of the activities with base in the axes of 1) Academic orientation and adaptation to the University of Morelos, 2) development of abilities for the learning and the self teaching and 3) development for the student's integral formation.

A Tutoring Program in the Faculty of Chemical Sciences and Engineering is an innovation strategy that makes possible the development of a flexible curriculum, than takes care of the necessities of new surroundings characterized by paradigms focused in the permanent learning, the care of environment an the independent development of the student.

The Tutoring is a fundamental part of a new educative model and by means of the commitment of tutors, professors and students, is a strategic tool in where the self-directed learning is a fundamental axis for the formation of professionals of engineering.

Results

Although the Tutoring Program has been implanted in the five academic programs of degree of the Faculty, at the moment, for the authors, has been study object the impact that this program has had in the bachelor degree of chemical engineering. For the evaluation of the program, the following criteria have been taken: diminution of the desertion rate and improvement by generation, improvement of the climate of confidence between tutors and students throughout the semester, and improvement in the processes of adaptation of the students to the institution. Of August of 2005 to 2006 July, the rate of global desertion in the FCQI (considering the five degrees of the Faculty) diminished a 5%, whereas in the degree of chemical engineering, in the same period, there was a diminution of 7% was registered.

The following tables show the results in relation to the raised criteria:

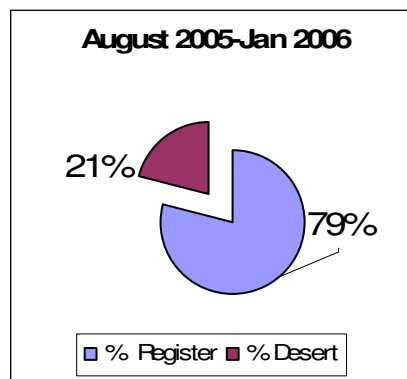


Figure 1 .Desertion Rate of the degree of chemical engineering, first semester. Generation 2005-2009

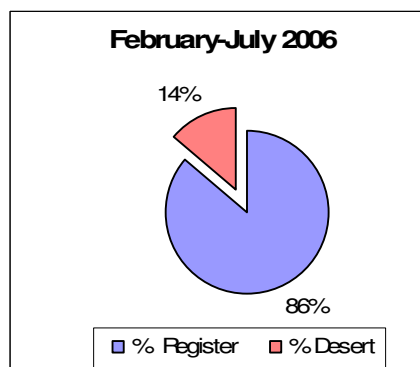


Figure 2 Desertion Rate of the degree of chemical engineering, second semester. Generation 2005-2009

Conclusions

Tutoring Program in the Faculty of Chemical Sciences and Engineering, (FCQE), has contributed elements to contribute in: the pursuit in the academic trajectories of the students, to give answer to the real and immediate necessities of the students and the necessities of formation of professors, the knowledge of the educational performance of the professors of the Faculty, the knowledge of the difficulties of the learning of the students and the processes of entrance and adaptation from the students to the university.

To a year of the implantation of Tutoring Program in the FCQE the results have been successful since besides to focus in the students, it has allowed to focus the attention in the development of a new educative model in where the tutoring is a main axis of the education. The implantation of a tutoring program has several dimensions, but in the middle of the definition of those dimensions one is the integral formation of the students and its expectations like well educate persons.

References

ANUIES, (2001) *Programas Institucionales de Tutoría. Una propuesta de la ANUIES para su organización y funcionamiento en las instituciones de educación superior*, Serie Investigaciones, México.

Inayatullah, S., Gidley, J., (comp.), (2003) *La Universidad en transformación. Perspectivas globales sobre los futuros de la universidad*, Ediciones Pomares, España.

Lázaro, A., Asensi, T., (1989) "Estructuración y organización de la actividad tutorial", en *Manual de Orientación Escolar y Tutoría*. Narcea, Madrid, pp. 384-400

Martínez et al, (2005) "Los planes de acción tutorial en la Universidad Autónoma de San Luis Potosí. La trayectoria académica como eje de construcción", en *Revista Mexicana de Orientación Educativa*, No.5, marzo-junio.

SEP (2001). Programa Nacional de Educación 2001-2006. México.

UNESCO, (1998). Declaración Mundial sobre la Educación Superior en el siglo XXI: Visión y Acción, 5-9 octubre, París.