

# The Opinion of the Employers About the Graduate Follow-Up Process in an Engineering School of Mexico

Claudia Garcia Ancira  
Social Responsibility  
FIME – Universidad Autónoma de Nuevo León  
Monterrey, Mexico

Idalia María Salinas Reyna  
Social Responsibility  
FIME – Universidad Autónoma de Nuevo León  
Monterrey, Mexico

**Abstract**—Educational requirements now demand from universities more responsibility over their educational labors. Therefore, the assessment of the employment situation and the social commitment of its graduates is a measurement of the success of universities. The graduate follow-up is an evaluation that is useful for improving and updating the study programs. The relationship with employers becomes fundamental to know the employment situation of graduates. This paper seeks to understand the views of employers on the process of tracking graduates. To this end, a workshop with employers was performed in the School of Mechanical and Electrical Engineering (FIME) of the Autonomous University of Nuevo Leon (UANL), Mexico. In this activity, individual and group techniques were used to identify the opinion of employers about the positive aspects and suggestions are observed in graduate follow-up process. Moreover the roles of the actors involved in the process were defined. The assessment with employers yielded valuable recommendations for the characterization of the process, as well as for the implementation strategies.)

**Keywords**—*Graduate Follow-Up; Employers; Higher Educational Institutions*

## I. BACKGROUND

### A. Responsible management of the educational processes

The role of universities is essential in the training of qualified human resources in order to meet the global demand of the market. This fact has prompted management strategies in educational institutions that quantify the impact of educational programs (EP) in society. (Ibarra Cruz, 2009)

Such demands require a responsible management for its educational processes: "Educational management should be decentralized, flexible, strengthens opportunities for participation, communication and reflective for decision making in order to contribute to the redesign of processes and a self-assessment which propitiates an institutional change." (García Ancira, 2014)

### B. The employment situation and the social commitment of its graduates marks the success of Institutions of Higher Education

The pursuit of international educational programs is an evidence that higher education in Mexico is in a scenario of global competition. Therefore, according to the Organization for Economic Cooperation and Development (OECD), it is necessary to develop new processes for institutions of higher

education (IHE), which study the social impact of the graduates. (ANUIES, 1998)

To measure this impact, emphasis should be placed on strengthening the relationship university - employer - society, in which the link between the world of work and higher education is established. In this sense, the challenge is to strength the fundamental objectives and find a balance between responding to employer demands or look forward, and early discover the future world of work likely to sustain more in self-employment. (ANUIES, 1998) (Red GRADUA2, 2006)

Hence universities in search of equity, quality and success should develop flexible models that will ensure the acquired knowledge, work experience, assessment of skills, competencies of graduates, certification of partial studies, the recognition national and global scope of its graduates, and the satisfaction thereof. (García Ancira, 2014)

Therefore, studies of graduates become an aspect to take into account to improve the quality of education in universities. Giovanna Valenti and Gonzalo Varela express it this way: "today in regard to the objectives of the IHE about follow-up studies of graduates, can conclude an important value of these investigations because by them is obtained information on the labor situation and the career of graduates, which serve to support the design and review of study plans and programs, based on their opinion". (Valenti; Varela, 2003)

### C. Graduate follow-up, an evaluation methodology to improve and update the study plans and programs.

The academic management is centered on the tasks of design, development and evaluation of educational programs. "Having as main revitalizing the academic community whose contributions are knowledge, experience, innovation or research by different educational agents that contribute to the development and improvement of the institution to achieve its vision." (Rodriguez Castellanos, Araujo de la Mata, Urrutia & Gutierrez, 2001)

The graduate follow-up, a process that has been established with major trend in national and international IHE, is a way to evaluate the curriculum. With the vision of achieving the best global quality standards, this evaluation of educational programs is essential for improving educational services offered by the institutions

Mexican certifying bodies of higher education, such as the Council for Accreditation of Engineering Education, AC (CACEI for its acronym in Spanish), set in their assessment guides the potentiality of graduate follow-up: "it is recommended to introduce the necessary changes to the graduate follow-up process (GFP) in such a way that it becomes an effective mechanism to evaluate their professional performance, as well as a feedback to the academic work of the Program (CACEI, 2013, p. 8).

#### *D. The first experiences of studies graduates.*

In Mexico, agencies such as the National Association of Universities and Institutions of Higher Education (ANUIES for its acronym in Spanish), the National Council of Science and Technology (CONACYT for its acronym in Spanish) and evaluation committees such as the Inter-institutional Committees for the Evaluation of Higher Education (CIEES for its acronym in Spanish) and the CACEI direct their main objectives to increase the quality of universities. They propose the GFP as an important strategy, among others, to reach a better quality in higher education.

The studies of graduate follow-up in Mexican universities has been based primarily on the basic outlines of the ANUIES. "The first experiences on graduate studies in Mexico date back to the eighties. Some of the IHE that started since early years are Metropolitan University in 1979, beginning with a study of 539 graduates, years 1988, 1989 to 1992 and after 1997, the UANL began its studies in 1981 to 2009 in the department of College Planning. In the National College of Technical Professional Education (CONALEP for its acronym in Spanish) was in 1982, 1994, 1998 and 2000 a monitoring system of graduates was established. The Iberoamerican University initiated these studies in 1993, and also in 1996, the Technological Institute of Superior Studies, among others" (Valenti; Varela, 2003).

Meanwhile, in Europe a network of Spanish universities supported by the National Assessment and Accreditation (ANECA for its acronym in Spanish) has worked in this process, with the aim of carrying out studies and useful practices in the design of a degree adapted the European Higher Education Area (EHEA). The results are presented in so-called white books. (ANECA, 2002).

#### *E. Graduates, employers and academic specialists play a key role in GFP*

In the GFP, several actors are involved such as: school, teachers, students, graduates and employers. A close and active network between these actors, will contribute to consider the social demands of educational programs. Such a link is the main way to understand and measure the impact of graduates in society.

In particular, the relationship employer - university becomes a crucial link to know the professional and employment situation of graduates and employer expectations. This was manifested by Fresán Orozco (2003) mentioning that "the knowledge of the performance of graduates is an approach to the reality of the professional fields, that together with local or regional prospective studies on economic and social trends, are useful to resize the educational work."

## II. METHODOLOGY

### *A. Employers sample group*

A group of 32 employers were elected, being this a purposive sample of 100%, considering employers who have hired graduates or interns, of the School of Mechanical and Electrical Engineering, in the past three years. It was considered the employers with a major relationship with the graduates of this school, they were characterized by their productive sector, service sector, national and international companies and SMEs

### *B. Description of empirical technique.*

Empirical method and technique: Workshop

Objective: Evaluate a prototype process for graduate follow-up management, identifying necessary aspects and suggestions, as well as the role of actors who should be involved.

Structure of the workshop with employers

#### • Introduction

The workshop coordinator makes a presentation on a prototype graduate follow-up process and then employers participate in a group dynamic in accordance with the following instructions:

#### • Actions

A member of the group reads the tasks to be developed. The material that must be analyzed to fulfill the tasks delivered.

1. A coordinator is chosen.
2. The group is organized into teams of no more than 4 people.
3. The following tasks are developed relying on the delivered material and the exposure of the workshop coordinator.
4. Written analyze of the positive opinions and suggestions of the proposed GFP.
5. Written analyze of the requirements that must be met the strategies and actions to implement the GFP.
6. Written analyze of the roles of the actors who engage in the GFP.
7. Choose a team representative to read the document with the results of the first three tasks.
8. Deliver the document to the end of the workshop

#### • Conclusions

One member of each team read out the notes taken, the criteria are compared.

## III. RESULTS

In the first task, employers analyze the positive opinions and suggestions of GFP prototype that was presented process. The results classified as positive criteria and suggestions are presented:

#### *Positive aspects:*

• It is a comprehensive process that includes candidates to a career in engineering, students and alumni, and it is also a guide for candidates and graduates to their own interests.

- The permanent link with the graduate helps to know their current situation, professional experience, and the needs observed in the workplace. The link allows to identify graduates leaders.

- Linking the university with employers helps to meet the real needs of enterprises, so that they can feedback and redesign educational programs. Achieving this through continuous improvement, students will graduate with less gaps. On the other hand, the GFP strengthens the relationship with industry to exploit the student talent.

#### *Comments and Suggestions:*

- The survey design must be improved to obtain accurate information and taking into account the graduate profiles and labor fields.

- The process should be centralized and standardized, using information technology to manage data in an updated way.

- It is necessary a more widespread of the GFP among students and graduates. In addition, give guidance to applicants with information about the career development of graduates.

- The link with graduates should seek consultancy to them, informing about actualization courses, postgraduate studies and exchanges.

- As for the analysis of the requirements to be met by strategies and actions to implement the GFP, the following results were obtained:

- The need to establish objectives and common goals between the various actors are indicated.

- Indicators should be define to measure accurately the contributions of graduates to the process, as well as the fulfillment of the objectives and goals.

- It is necessary to define criteria for measuring the benefit that graduate follow-up brings to the faculty, students and society

- Identify and define the roles and responsibilities, it is suggested that in the university the responsible of the GFP are managers and responsible of the educational programs. In business, those responsible would be the same graduates, the department heads and the head of human resources.

#### *Roles and functions of stakeholders*

Finally, employers gave their opinions to define the roles of the actors who engage in the GFP. The results are presented below:

The university must maintain a link with companies to identify their needs. Educational programs should met the needs encountered, including courses and diplomas to graduates.

In addition, the university encourages student-company linking through programs such as internships, and innovating new methods. The academic schedules must adapt to these programs.

It is important to include in the workforce, professors or instructors with work experience in enterprises.

The student must self-educate in a comprehensive formation, including areas such as culture, history and different ways of working. Thus, it will be a proactive person that promotes an entrepreneurial culture. An essential competence to be acquired is English proficiency. Within this comprehensive formation internships have an important value, they represent an opportunity for growth beyond academic requirements they represent.

The candidate to an engineering career should be able to access the educational profile of the programs offered by the school, as well as the projects undertaken. This way, the candidate will get a better career guidance.

The professor should seek learning experiences through practical skills sessions. Academic practices should be based in part on the results of graduate follow-up.

Employers must identify and determine the necessary profiles and projects for the company. Also it is necessary to create mechanisms to identify and guide academic talents.

The company directors should be involved in job analysis for defining the profiles required by the company.

#### IV. CONCLUSIONS

The achievement of the IHE in meeting the demand of human resources, can be measured by the employment situation and the social commitment of its graduates. For this, the GFP provides a methodology to evaluate the educational work that allows us to know that status of graduates.

GFP is useful to improve and update plans and curricula. This continuous improvement enables to achieve the quality standards required by social demands at national and international level.

The employer-university link is of particular interest to know the employment situation of graduates. Likewise, this relationship is one way to discover the reality of the professional field and the economic and social trends that are the foundation and the preamble to the redesign of educational work.

As for the views of employers with respect to GFP, the following positive aspects are important: the ideal process of graduate follow-up must be a guide for candidates as well as graduates, according to their particular interest. The link graduate-university identifies the needs in the moment to be placed in the labor market, also it is valuable to interact with leader graduates who can contribute to educational work.

As for university-employer relationship it is particularly important to know the real needs of enterprises, thus achieving more accurately approximate the formation of professionals in accordance with these requirements.

About proper planning and execution of the process, it is important to set goals, targets and indicators considering the involved actors. It is also necessary to establish jointly the functions and objectives that each actor has in the process.

A significant benefit is the consulting give to the graduate about the options of new studies. It also outstanding the importance of linking projects between students and enterprises, as well as a workforce with experienced professionals of the industry.

About the role of the student, comprehensive formation is the main focus. Self-development in various areas, notably the English proficiency and professional experience, through internships in companies.

Among the most relevant results, employers recognize the need to strengthen the GFP and considered very convenient to fortify the link university-enterprise in order to take into account their views and requirements. Besides, it is considered potential benefits of the graduate follow-up graduates to strengthen training of students and graduates.

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

## REFERENCES

- [1] ANECA. (June 19, 2002). National Agency for Assessment and Accreditation White Papers.[Agencia de Nacional de Evaluación de la Calidad y Acreditación Libros Blancos] Retrieved on June 4, 2012, of White Papers: <http://www.aneqa.es/Documentos-y-publicaciones/Otros-documentos-de-interes/Libros-Blancos>
- [2] ANUIES. (October 1998). Higher education in the XXI century. [La Educación superior en el siglo XXI] Retrieved September 2012, of <http://www2.uacj.mx/apps/webpifi/ANUIES%20La%20educaci%C3%B3n%20superior%20en%20el%20siglo%20XXI.pdf>
- [3] CACEI. (2013). CACEI, Manual processes and procedures. [Manual de Procesos y procedimiento] Retrieved from CACEI, 4. Manual Processes and Procedures, Section 4: <http://www.cacei.org/wp-content/uploads/2013/07/procesosyprocedimientos.pdf>
- [4] Fresán Orozco, Magdalena. (2003). Studies graduates. A strategy for self-knowledge and improving. In basic outline for study of graduates. [Los estudios de egresados. Una estrategia para el autoconocimiento y la mejora de las IES. En Esquema básico para estudio de egresados.] ANUIES
- [5] García Ancira, C. (March 27, 2014). PhD thesis. Management model with integrated approach to strengthen the educational dimension of graduate follow-up process. [Modelo de gestión con enfoque integral para el fortalecimiento de la dimensión formativa del proceso de seguimiento de egresados] San Nicolás de los Garza, Nuevo Leon, Mexico.
- [6] Ibarra Cruz, M. R. (2009). Monitoring program alumni and opinion of employers. [Programa de seguimiento de egresados y opinión de empleadores.] Retrieved from <http://www.uv.mx/orizaba/enfermeria/files/2012/11/PROGRAMADESEGUIMIENTODEEGRESADOSUV.pdf>
- [7] Red GRADUA2. (2006). Manual instruments and recommendations on the monitoring of graduates. [Manual de instrumentos y recomendaciones sobre el seguimiento de egresados.] Columbus Association.
- [8] Rodríguez Castellanos, A. Araujo de la Mata, A., & Urrutia Gutierrez, J. (2001). The management of scientific and technical knowledge at the Elon College: a case and a project. Notebooks Vol. 1. N. 1. [La gestión del conocimiento científico-técnico en la universidad: un caso y un proyecto.] Retrieved from <http://www.colombiaaprende.edu.co/html/home/1592/article-188842.html>
- [9] Valenti; Varela. (2003). Basic scheme for graduate studies. [Esquema básico para estudios de egresados] Mexico: ANUIES.