

Impacto de los programas de movilidad internacional en la adquisición de competencias académicas para el ingreso al mercado laboral: México

Impact of the international mobility programmes in academic skills acquisition to enter the labour market: México

O impacto dos programas de mobilidade internacional na aquisição de habilidades acadêmicas para entrar no mercado de trabalho: México

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Resumen

El objetivo es realizar un análisis de las competencias académicas que influyen en la adquisición y conservación del empleo de los estudiantes y egresados de una universidad estatal. Dichas variables fueron estudiadas a través de realizar un análisis comparativo entre estudiantes y egresados **con** y **sin** participación en el Programa de Movilidad Universitaria Internacional (PMUI). El método utilizado es de diseño no experimental, comparativo en formato de encuesta, corte transversal, selección de la muestra al azar (estudiantes o egresados con y sin movilidad internacional como empleadores) para realizar un análisis estadístico de tipo descriptivo e inferencial.

Las poblaciones son: 1 391 estudiantes y egresados, 68 empleadores. Muestras al azar: 372 estudiantes y egresados como 54 empleadores. Material: encuesta electrónica del cuestionario de competencias para estudiantes, egresados y empleadores. En los resultados se observa el desarrollo de más competencia académica en alumnos que asistieron en programas de movilidad

que los que no asistieron. Sus diferencias se acentuaron en competencias de contextos internacionales y responsabilidad social y compromiso ciudadano.

Palabras clave: movilidad internacional, competencias académicas, mercado laboral.

Abstract

The aim is to carry out an analysis of the academic skills that influence the acquisition and preservation of the employment of students and graduates of a State University. These variables were studied through a comparative analysis between students and alumni **with** and **without** participation in the International University Mobility Program (PMUI by its name in Spanish). The method used is not comparative, experimental design format of survey, cross-section, selection of the sample randomly (students or graduates with and without international mobility as employers) to carry out a descriptive and inferential statistical analysis.

The populations are: 1 391 students and graduates, 68 employers. Random samples: 372 students and graduates as 54 employers. Material: electronic skills questionnaire survey for students, alumni and employers. The results shows more academic competition in students attending in mobility programmes and that those who did not attend. Their differences are accentuated in international contexts and social responsibility and civic engagement skills.

Key Words: international mobility, academic skills, labour market.

Resumo

O objetivo é analisar competências acadêmicas que influenciam a aquisição e retenção de emprego de estudantes e graduados de uma universidade estadual. Essas variáveis foram estudadas através de uma análise comparativa entre estudantes e graduados com e sem participação no Programa de Mobilidade Acadêmica Internacional (PMUI). O método utilizado não é experimental, comparativo formato de desenho do inquérito, a seleção da amostra transversal aleatórios (estudantes ou graduados com e sem mobilidade internacional como empregadores) para realizar uma análise estatística dos descritiva e inferencial.

Populações são: 1391 estudantes e graduados, 68 empregadores. As amostras aleatórias: 372 estudantes e graduados e 54 empregadores. Material: competições de levantamento questionário eletrônico para estudantes, graduados e empregadores. Resulta no desenvolvimento de proficiência mais acadêmica em alunos em programas de mobilidade do que aqueles que participaram observado. Suas diferenças foram acentuadas em contextos e competências de responsabilidade social e engajamento cívico internacionais.

Palavras-chave: mobilidade internacional, habilidades acadêmicas, mercado de trabalho.

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Introduction

Reflections of our time

On the one hand, we have the advantages of comprehensive development for students studying abroad and, on the other hand, the lack of jobs for young people. The impact of such programmes is the topic to investigate.

This research is based on surveys applied both to students who were in international mobility programmes and in those who did not participate in such a program; both groups have to get or keep a job.

Much has been written about the benefits that gives mobility since it helps to obtain new and different knowledge, who are perhaps in place of origin impossible to acquire.

As you know, since ancient times, travel and discover new cultures was an experiential way of acquiring new knowledge. The registration of student mobility taken from Roman times where the best students traveled to Athens or Alexandria to acquire knowledge because it was in its place of origin was scarce.

The quote "travellers illustrate... the illustrated" (Spanish, author unknown) was frequently used during the Renaissance era, because the exploration of the new world represented an

inexhaustible vein of knowledge where different cultures contributed from their different socio-economic areas.

The benefits that brought this way of acquiring knowledge was regulated and legalized until the modern era, when emerging educational treaties such as the ERASMUS Programme (European Region Action Scheme for the Mobility of University Students), the first great student mobility program proposed by the European Economic Community (EEC) in 1987, whose articles seek to establish international programs to standardize studies (CEE, 1987).

This program others have attached as the European education programme called SÓCRATES (2002) involving 30 European countries, in order to homogenize socio-economic and educational advances.

The former idea is already embodied in Altbach (1989): "The personification of the World Wide Web toward the internationalization of knowledge and research in an integrated global economy and the center of a complex network of academic relations".

In the last three decades has developed student mobility of the emerging Latin American countries, with displacement of students to developed countries due to: economic status, hegemony of the English language and sources of funding for higher education (Félix, 2002).

Currently there are several organizations that promote student mobility, such as The Observatory on Academic and Scientific Mobility in Latin America and the Caribbean (OBSMAC), which has been operating since 2010, focusing on the promotion of higher education and contributing to the implementation of the mobility program In the Latin American and Caribbean region (OBSMAC, 2016).

In labor practice, in the 1990s the Organization for Economic Co-operation and Development (OECD) reported an increase of 12 to 20 million immigrants with a level of education aged 13 or over by mobility from developing countries to countries Developed, in search of better wages and professional opportunities, a phenomenon called "brain drain", where emerging countries boost and finance their students to international mobility and the developed countries employ them. This has been a problem for emerging countries and consequently repatriation programs are being promoted (Didou, 2009).

Development of student mobility in Mexico

Didou and Jaramillo's 2014 study of student mobility in Mexico, in his book *Internationalization of Higher Education and Science in Latin America: A State of Art*, makes a documentary compilation of 132 materials with Information produced from 1993 to 2013.

The previous documentary research highlights the internationalization of higher education, starting with the North American Free Trade Agreement (NAFTA, 1994), where the governments of Mexico, Canada and the United States participated to lay the foundations for international mobility . However, implementation at the beginning is difficult because of the disparity in higher education programs. Nowadays, mechanisms have been established to standardize learning units in different areas of knowledge and open better connections for students in the area of research and in general for higher education. These actions have been supported through the Trilateral Force of Discussion in Higher Education (FTDES) and the National Association of Universities and Institutions of Higher Education (Didou and Jaramillo, 2014).

The programs are monitored to date by the National Council of Science and Technology (CONACYT) and the Secretariat of Public Education (SEP), to produce descriptive, evaluative-documentary studies.

In Mexico there are scientific studies that analyze the pros and cons of the development of educational mobility, highlighting the research carried out by the Latin American Faculty of Social Sciences (FLACSO), the University of the Americas in Puebla, Instituto Mora, DIE-CINVESTAV, UNAM and The Colegio de México (Didou and Jaramillo, 2014).

All this panorama teaches us that educational and scientific mobility in Mexico has not been an easy task because there are economic and cultural barriers that stop it. This is because there is no precise indication of success or failure, as well as to incorporate and maintain programs of mobility, goods, people, values, cultures and ideas (Casalet, 2010, p 110).

Understanding the process of globalization and its impact at all levels of society, from the most basic to the most complex, is an intense and continuous action of world relations, which means "to link to the most distant regions and even influence The more local events "(Giddens, 1990).

However, the internationalization of education in Mexico has borne fruit with its free trade agreements (discussed above) and the reformulation of the rules governing intellectual property rights (Sánchez Daza, 2003).

Within the knowledge society there have also been advances in the modification of learning systems (competency learning) and the homologation of programs so that the knowledge and skills of graduates are in line with the international labor market, on the side of science, The structuring of academic bodies working in multidisciplinary projects with international networks (Tinoco, 2008).

It is important to refer to where Mexican student mobility has been directed and concentrated. Studies indicate that its main line is in North America and Central Europe, while Mexico is mainly Latin American student mobility. In terms of duration, training is more frequent in short stays than in long ones supported by the Consortium for North American Higher Education Collaboration; Or by COMEXUS (Fulbright Scholarships); Regardless of the scholarships and follow-up given by Conacyt.

Labor market of the State of Mexico

Labor factors

Since our research mediates the impact of the student mobility program in the labor market, it is necessary to start with data from the second quarter of 2016 of the National Survey of Occupation and Employment (ENOE), where in the population occupied by groups registers a total Of 51 433 590 workers. In the group Professionals, Technicians and Art Workers 4,939,921 are registered, equivalent to 9.6%, while professionals are registered 2 366 712 which is equivalent to 4.6% (INEGI 2016, Data set: Occupied population).

The equivalences show that the employment of the professionals is low because the employability of this sector is affected by several factors. We will begin with the socioeconomic factor, which is the demographic transition that in turn has a severe impact on: 1) the growth of the population in the age of receiving education and 2) the 1.8% annual growth of the population of productive age (INEGI , 2014). The employment shortage (estimated at 17.6% per year) is from professionals (INEGI 2010, Migración).

This translates into just over one million new entrants per year to the country's labor market, of which a fraction (approximately one in four) are professionals, ie those who graduate from universities and higher education institutions from the country (Hernández, 2012, p. 100).

Educational factors

Several institutions have focused on student mobility as one of the factors favoring employability because it increases the quality of education and the acquisition of new skills, competences and skills to improve competitiveness in the acquisition and conservation of employment.

On the other hand, we must also take into account the information provided by SEP-ANUIES, where the number of high-school graduates in Mexico increased from 268,000 in 2000 to more than 305,000 in 2015. Therefore, university-age youth who accessed the higher education system rose from 20 to 38.8%, concentrating on public institutions at the upper and lower secondary levels (ANUIES, 2015).

However, we can say that the number of graduates grew 6.1% per annum, while the Mexican economy registered 2.3% in 2015, which is why the supply of graduates faces a labor market that is not able to offer the job opportunities. (ENOE, 2015).

The future of work is closely linked to the area of study. The areas with the highest numbers are: Economic Administrative, Engineering, and Education; These three areas reach almost 5 million employed professionals. However, this research expands with two more areas: social sciences and health sciences, obtaining a total of almost 7 million employed professionals (ENOE, 2015).

Employability in the State of Mexico

A summary of the main characteristics of the state and its employability will be made. General characteristics of the state:

The State of Mexico has as capital the City of Toluca de Lerdo and has 125 municipalities, with a population of: 16 187 608 inhabitants, 13.5% of the total of the country. The distribution of the population is 87% urban and 13% rural; At national level the figure is 78 and 22% respectively. The sector of activity that contributes most to the state GDP is Commerce. Its contribution to the national GDP is: 9.3%. (INEGI, National Survey of Employment and Employment, Strategic Indicators, Third Quarter 2015).

Keeping in mind that it is being prepared within the entity of the State of Mexico, it is assumed that the majority of graduates are employed in this region.

According to INEGI statistics (third quarter of 2015), the survey on the problem of occupation and access to employment tells us that the State of Mexico occupies the 29th position in 32 states

according to the national vision, Marked by high rates of unemployment (level 30 of 32) and occupation in the informal sector (level 29 of 32) (INEGI, ENOE, 2015).

The State of Mexico, represented by its capital Toluca, shows the stable consolidated professional service and the contracting to the higher level in decline. Data compared to third quarters between 2014 and 2015 (INEGI, ENOE, 2015).

Now we have made a brief tour of the evolution and goals of international mobility and general and regional employment, we have to know through two questionnaires: one for students and graduates, and another for employers belonging to the same economic zone. Both questionnaires measure the academic competencies that allow the acquisition and conservation of employment.

Research Question

What is the impact of the PMUI international mobility program on students and graduates for the acquisition and maintenance of employment within the regional labor market?

Methodology

The overall objective is to measure the impact of international mobility programs on the acquisition and conservation of employment in their labor region.

Specific objectives:

1. Measure the competencies of students or graduates (with or without participation in an international mobility program) to acquire or retain employment.
2. Measure the skills required by employers to acquire or retain employment.
3. Know the relationship between the competences of students or graduates with participation in an international mobility program and the skills required by employers to acquire or retain employment.
4. Know the relationship between competencies that have students or graduates without participation in an international mobility program and the skills required by employers to acquire or retain employment.
5. Compare the skills of students or graduates (with or without participation in an international mobility program) with the skills required by employers to acquire or retain employment in the Zumpango region of the State of Mexico, Mexico.

A non-experimental, field design was established in survey format, cross-sectional and comparative type. Selection of the random sample (in response to the electronic questionnaire) applied to 234 students, 138 graduates = 372 participants with and without international mobility as 54 employers) to perform a descriptive and inferential statistical analysis.

Population of 1 391 students or graduates registered within the platform of the International University Mobility Program (PMUI), belonging to the Autonomous University of the State of Mexico of the generation of graduates, from 2013 to 2015.

Material: survey conducted through a questionnaire to students or graduates and questionnaire to employers.

Data sheet

The first part of the questionnaires contains general information questions for students, graduates and employers.

The second part contains the 27 questions pertaining to the Alfa Tuning Questionnaire, because it has the items that are required for international frameworks and is standardized and validated in the Latin American population (Beneistone, Esquetini, González, Maletá, Suifi and Wagenaar, 2007).

Measures: academic competences divided into: a) instrumental competencies that evaluate competences of cognitive and methodological skills as technological and linguistic skills, b) interpersonal skills that evaluate critical skills and self-criticism as social and ethical skills. C) systemic or integrative competences: the union of the two previous ones, measuring the updating and permanent adaptation (González and Wagenaar, 2006).

The adaptation, validation and standardization of the questionnaire for students and graduates and employers measure nine Instrumental Competences, eight interpersonal Competences and ten Systemic Competences. Grouped in factors: eleven items for Learning Processes, three items for the International Technological Context, eight items for Interpersonal Skill and five items for Social Value.

The concurrent validity of items in the graduates' questionnaire is 89.92%, while the questionnaire for employers is 81.66%, which evaluated the importance of the skills required of students, graduates and employers to obtain and retain employment. Reliability inter-groups of $r^2 > 0.75$ at $p < 0.05$ and total reliability in $\alpha = 0.8332$ (González y Suárez, 2016).

Hypothesis

H₁ There are significant correlations at $r \geq 0.80$ between the means of the qualifications of questionnaires (range = very important) belonging to Group 1 and Group 2 (students or graduates with and without participation in the international mobility program according to their region Labor) with those of Group 3 (employers in their labor region).

H_{1.0} There are no significant correlations at $r \geq 0.80$ between the means of the questionnaire (rank = very important) scores for Group 1 and Group 2 (students or graduates with or without participation in the international mobility program according to To their labor region) with those of Group 3 (employers in their labor region).

H₂ There are significant differences at $p < 0.05$ between the means of the qualifications of the questionnaires between Group 1 (students or graduates with participation) and Group 2 (students or graduates without participation) both groups in the international mobility programs according to their Region.

H_{2.0} There were no significant differences at $p < 0.05$ between the means of the qualifications of the questionnaires between Group 1 (students or graduates with participation) and Group 2 (students or graduates without participation) both groups in the international mobility According to your work region.

H₃ There are significant differences at $p < 0.05$ between the means of the questionnaire grades between Group 1 and Group 2 (students or graduates with and without participation in the international mobility program) and Group 3 (employers) both groups according to their Region.

H_{3.0} No There were significant differences at $p < 0.05$ between the means of the questionnaire grades between Group 1 and Group 2 (students or graduates with and without participation in the international mobility program) and Group 3 (employers) both groups of According to your work region.

Process

1. Preparation and application of a letter of responsibility signed with the authorities where the confidential use of the data sent by the questionnaires was exposed.
2. Sampling of random samples of 372 students or graduates and 54 employers wishing to participate in August-October, 2016.
3. Surveys of data in the statistical program SPSS-17.

4. Descriptive statistical analysis to know the a) Characteristics of the sample of both students, graduates and employers, b) Registration of the average statistics of competence, bases for the differential analysis, c) Analysis of the distribution of the samples (students , Graduates and employers) by means of the Kolmogórov-Smirnov Test (KS) to verify the normality of a distribution.
5. Inferential analysis: a) Pearson correlation coefficient test to measure the degree of significant covariation ($r \geq 0.80$) between the results of the groups: group 1 (students or graduates with student mobility) and group 3 (employers) as between Group 2 (students or graduates without student mobility) and group 3 (employers). B) ANOVA test to measure the significant difference ($p < 0.05$) between means of: group 1 (students or graduates with student mobility), group 2 (students or graduates without student mobility) and group 3 (employers).

Results

The internationalization of Higher Education is a starting point to promote the international mobility of students and teachers as the homologation of the curriculum, which allows equal opportunities for students and graduates to enter and stay in the national and international labor market.

This study aims to verify the impact of the international mobility of students and their work region.

The main characteristics of the sample of 372 students and graduates is: 28% belongs to the area of Social Sciences, most are graduates (63%), and 74% are qualified. With employment there are 76%, 72% have their employment within their area of study, and 58% are in line with their salary (see table 1).

Table 1. Characteristics of the sample of students and alumni
n=372

Área de Estudio	n	%	Condición	n	%
Ciencias Sociales y Administrativas	104	28 %	Alumno	138	37 %
Ingeniería y Tecnología	65	17 %	Egresado	234	63 %
Ciencias de la Salud	28	8 %	Titulación		
Artes, Educación y Humanidades	42	11 %	Pasante	74	32 %
Ciencias Naturales y Exactas	47	13 %	Titulado	64	46 %
Arquitectura, Diseño y Urbanismo	68	18 %			
Ciencias Agropecuarias	18	5 %			

Empleo

Empleo	n	%	Área empleo	n	%
Con empleo	282	76 %	En área de estudio	203	72 %
Sin empleo	90	34 %	Fuera del área de estudio	81	29 %

Conformidad con el salario

Sí	112	58 %	No	80	42 %
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Tabla de propia creación, octubre 2016

Most of the 54 employers have a private-sector organization: 51%, by number of employees: 40%, small enterprise: 36% and tertiary-type production sector (services): 32% (see table 2).

Table 2. Characteristics of the sample of companies

n=54		
Tipo de organización	Publica	32 %
	Privada	51 %
	otros	17 %
Tamaño de la organización	Grande	21 %
	Mediana	40 %
	Pequeña	36 %
Sector de producción	Primario	23 %
	Secundario	21 %
	Terciario	32 %
	Cuaternario	13 %
	Quinario	11 %

Tabla de propia creación, octubre 2016

According to hypothesis 1, where significant correlations are measured at the der level ≥ 0.80 between the means of the questionnaire scores (range = very important). We can say that between group 1 (students and graduates with mobility) and group 3 (employers), there are only 8/27 significant correlations, which is equivalent to 30%. While between group 2 (students and graduates without mobility) and group 3 (employers) there are only 5/27 significant correlations, which is equivalent to 19% (see table 3).

Table 3. Correlation between students or graduates and employers as aspects required for recruitment

Condición de rendimiento V.D. Aspectos para la contratación V.I.	muy importante r ²	muy importante r ²
1. Capacidad de abstracción, análisis y síntesis	r=0.85	r=0.83
3. Capacidad para organizar y planificar el tiempo	r=-0.86	
4. Conocimientos sobre el área de estudio y la profesión	r=0.88	r=0.81
8. Habilidades en el uso de las tecnologías de la información y de la comunicación	r=-0.82	r=0.81
10. Capacidad de aprender y actualizarse permanentemente	r=0.92	r=0.82
15. Capacidad para identificar, plantear y resolver problemas	r=0.88	r=0.82
25. Capacidad para formular y gestionar proyectos	r=0.83	
27. Compromiso con la calidad	r=0.81	

Tabla de propia creación, octubre de 2016

In hypothesis 2, where the significant difference at the $p < 0.05$ level between the means of the questionnaire grades (rank = very important) was measured, it was observed: between group 1 (students and graduates with participation) and group 2 (students Or graduates without participation), the existence of three significant differences between both groups (see table 4).

Table 4. Test ANOVA, students and graduates with international mobility Vs students and graduates without international mobility.

n=372				
ítems	grupos	gl	f	p
5. Responsabilidad social y compromiso ciudadano		1	2.48	0.047
22. Valoración y respeto por la diversidad y multiculturalidad	Grupo 1 y Grupo 2	1	3.1	0.042
23. Habilidad para trabajar en contextos internacionales		1	2.46	0.047

Tabla de propia creación, octubre 2016

Regarding hypothesis 3, the null hypothesis is accepted because there is no significant difference at $p < 0.05$ between the means of the questionnaire scores (range = very important) between group 1 or group 2 (students and graduates with or Without mobility program) and group 3 (employers).

Discussion

The overall objective is to measure the impact of the international mobility program on the acquisition and conservation of employment in its region, therefore:

In order to measure the impact, two questionnaires measuring Instrumental Competences, Interpersonal Competences and Systemic Competences were grouped into factors: Learning Processes, International Technological Context, Interpersonal Skills and Social Value.

There we accepted hypothesis 1 because there are seven significant correlations for the group of students and graduates with mobility program and five significant correlations for the group of students and graduates without mobility program. Remember that both groups were correlated with the group of employers.

Now it is interesting to do a group analysis, with the results in tables.

The previous correlations tell us that group 1 (students and graduates with mobility program) present more and more close matches with what employers request for the acquisition and conservation of employment, because they are updated subjects in their academic area base to

identify and solve Problems, able to manage their time, using mainly mental processes of analysis and synthesis as of technological instruments, which will allow him to formulate new projects with adequate levels of quality.

For group 2 (students and graduates without a mobility program), there are less and close coincidences with what employers request for the acquisition and conservation of employment, because they are subjects that mainly use mental processes of analysis and synthesis what will generate The performance of their learning area through problem solving and the use of technological tools.

With regard to hypothesis 2, where the significant difference at group $p < 0.05$ between group 1 (students and graduates with participation) and group 2 (students or graduates without participation) was measured, both the students and the graduates who did not attend International mobility programs They do not consider cultural diversity and the ability to work in international contexts to be very important. But it is necessary to find out why group 2 (without mobility program) does not consider social responsibility and citizen commitment very important. This item is within the generic competences, interpersonal factor of social value (Bravo Salinas N., 2007).

There are studies in Latin America that speak of this phenomenon where social consciousness is mentioned. One of these studies tells us that a good professional requires the development of knowledge and skills of his academic area but also generic competence that serve as support for the integral development of the professional and that from the perspective of teaching is a key element for The student can exercise his knowledge. Their role is for the other and with the other, since individualism generates social disintegration (González and González, 2008).

We also have another study that talks about university social responsibility, which includes corporate social responsibility as a continuum between the two, because in the first one learns to be, so that in the second one can be exercised. Both are indispensable to form corporate strategy as an end to avoid damages and create benefits for both organizations and society as a whole.

In this manual (University Social Responsibility, Manual first steps) a university institution is diagnosed and it is intervened to improve social responsibility and the benefits to humanity. It speaks not only of interpersonal relationships but also of relationships with the environment and mutual benefits (Vallaey, De la Cruz and Sasia, 2009).

The book also talks about the importance of education in values that are the basis against corruption in Mexico. This book shows a series of scientific studies in various careers in the administrative and legal economics, which assess professional work in values and its relevance in society because it is the essential part of the practice of the profession (Gonzalez J., 2015) .

To close this topic, we can talk about the essence of the educational model supported by UNESCO, written by Delors, in his book *Education is a treasure*, proposing in this sense what is now known as the four pillars of education:

"Learn to know, Learn to do, Learn to live together and Learn to be."

Social responsibility and citizen commitment are intimately linked with Learning to live together and Learn to be (Dolos, 1995).

We will conclude with hypothesis 3, where the null hypothesis is accepted. Because there are no significant differences at the $p < 0.05$ level, in the very important range, among the three groups: group 1 students and graduates with mobility, group 2 students and graduates without mobility and group 3 employers.

Conclusions

As can be seen within this study there are more significant correlations between students and graduates with mobility programs than in students and graduates without mobility with respect to the ability to acquire and retain a job. It can also be said that there are significant differences between the group of students and graduates with mobility and the group of students and graduates without mobility.

Both assertions support student mobility programs not to mention that the differences between the two groups are not so severe in acquiring and retaining employment.

Research Suggestions

Among the significant differences is the item Social responsibility and citizen commitment, which considered the group with student mobility as very important, while the group without student mobility does not consider it in the same way. This can be due to many factors: learning in foreign stay, vulnerability experienced in foreign students, among others.

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