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**Original article** 

# Impact of postgraduate studies on the professional skills of graduates

Impacto de los estudios de postgrado en las competencias profesionales de los titulados

## Impacto da pós-graduação nas habilidades profissionais dos graduados

#### Alberto Cristobal Flores Quispe<sup>1</sup>

http://orcid.org/0000-0003-3859-5233

<sup>1</sup>University José Carlos Mariátegui. Perú

floresquispealb@gmail.com

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#### ABSTRACT

In the field of continuing education, fourth and fifth level studies require a more relevant, contextualized approach, focused on the development of professional competencies. Study objective that seeks to analyze the impact of postgraduate studies on the Academic-Professional Competences of Peruvian graduates. Non-experimental quantitative research of explanatory level, with a population of 1064 graduates based on the information provided by the Technical Registry of the University. The results show that postgraduate training has a significant impact on labor productivity, scientific production and achievements as dimensions consistent with the competencies of the graduates. In conclusion, the training of graduates has a significant impact on the competitiveness of the professionals who graduated from these programs.

**Keywords:** academy; permanent education; specialization; postgraduate; pro fessional.

#### RESUMEN

En el campo de la educación continua, los estudios de cuarto y quinto nivel requieren un enfoque contextualizado, más relevante, enfocado al desarrollo de competencias profesionales. Objetivo de estudio que busca analizar el impacto de los estudios de posgrado en las Competencias Académico-Profesionales de los graduados peruanos. Investigación cuantitativa no experimental de nivel explicativo, con una población de 1064 egresados en base a la información proporcionada por el Registro Técnico de la Universidad. Los resultados muestran que la formación de posgrado tiene un impacto significativo en la productividad laboral, la producción científica y los logros como dimensiones consistentes con las competencias de los egresados. En conclusión, la formación de graduados tiene un impacto significativo en la competitividad de los profesionales egresados de estos programas.

**Palabras clave:** academia; educación permanente; especialización; posgrado; profesional.

#### RESUMO

No campo da educação continuada, os estudos de quarto e quinto nível requerem uma abordagem mais relevante,

contextualizada, voltada para 0 desenvolvimento de competências profissionais. Objetivo do estudo que busca analisar o impacto da pós-graduação nas Competências Acadêmico-Profissionais dos graduados peruanos. Pesquisa guantitativa não experimental de nível explicativo, com uma população de 1064 egressos com base nas informações fornecidas pelo Cadastro Técnico da Universidade. Os resultados mostram que a formação pós-graduada tem impacto significativo na produtividade do trabalho, produção científica e realizações como dimensões condizentes com as competências dos egressos. Em conclusão, a formação de egressos tem um impacto significativo na competitividade dos profissionais que se formaram nesses programas.

**Palavras-chave:** academia; educação permanente; especialização; pós-graduação; profissional.

## INTRODUCTION

After the accelerated development of knowledge and Information and Communication Technologies, research is necessary as an essential activity to deepen the Teaching and Learning Process aimed at training, updating and deepening the knowledge and skills of university graduates to combine them directly with the knowledge of professional practice, scientific and technological advances and the needs of the organizations in which these professionals work. Among the most important antecedents we find the titles of doctor, teacher and professor granted by medieval universities, which characterized a cultured and capable person in his profession (Villa Prieto, 2017).

In the case of Latin America, as in the rest of the Third World, postgraduate studies began as an extra activity and were not firmly linked to professional training; considering that, for many years, the region has been affected by the economic crisis. For many years, the region has been marked by a significant gap, both in education and society, compared to other parts of the world (Llano Zhinin *et al.*, 2021). However, over time it has become fertile ground for sustainable development at the local, regional, national and even international levels.

Postgraduate programs are a space for the socialization of learning, which harmoniously combines research, dissemination and promotion of innovation, where the widest and growing diversity of fields of knowledge is expressed (Méndez Rebolledo, Suriñach and Ojeda Ramírez, 2018).

In general, the transfer of foreign technology and ideology is considered an important factor in the development of prospective which research, usually requires consideration of the characteristics and professional needs of each context. Consequently, Higher Education must face the challenge of the scientific and technological developments of this century in an accelerated manner, placing special emphasis on solid professional training that considers productive learning processes a priority, so that postgraduate training has the intellectual and human resources necessarv to ensure their learning throughout their professional life.

Undoubtedly, society increasingly needs a professional who combines a high degree of specialization in scientific and technological capacities with the socio-emotional skills necessary within society. It goes without saying that the university will be judged, to a large extent, by the quality of its graduates, a reality that is fundamentally influenced by the development of advanced research (Manzo Rodríguez, Rivera Michelena and Rodríguez Orozco, 2006). The aforementioned authors point out that the university must be able to make its academic

structures and work methods more flexible in addition to betting on continuous learning as an important part of the development of competencies, which allows it to evolve towards integration. However, the countries of the Latin American region have taken up the challenge, albeit in a fragmented way, betting on doctoral training, degrees and specializations, which supposes a sustained impact over time of postgraduate training in the first-year systems. world.

A trend that has raised justifiable concern about the impact that universities and graduate schools have had on the community in which they operate. Although this concern is general, it usually generates approaches based on the perception of students about the services they receive at this level. The truth is that this point of view is somewhat inappropriate when it comes to the impact of graduate education on society, since it involves aspects of satisfaction rather than quantitative measures of what it produces in society.

In the local context, this perspective has been the usual reference point with which approaches have been applied to assess the impact of postgraduate training. However, unlike this line of action, the objective of this study was to analyze the impact of postgraduate studies on the Academic-Professional Competencies of Peruvian araduates. Since postaraduate studies constitute a level of academic studies whose purpose and practice are defined in a much deeper and broader framework, but which, at the same time, are more specialized than university studies, in terms of the distinction between studies degree.

## **METHODS**

Non-experimental quantitative research of explanatory level, whose population was made up of 1064 graduates of the Graduate School of the "José Carlos Mariátegui" University of Peru, in response to the information provided by the Technical Registry Office of the University. The proximity criterion of the occurrence of the phenomenon was considered for hypothesis testing; In particular, a phenomenon whose have already happened events was addressed, which did not allow the researcher to control the conditions that made its appearance possible (Campos, 2016). Due to the de facto limitations that are verified because they are events that have already elapsed, the investigation used ex-post facto designs.

#### Population

According to the orientation of the studies followed in the Graduate School, two subpopulations were identified: one oriented towards specialization, 304 graduates (N1) and another towards academic orientation, 760 graduates (N2).

A sample of 170 graduates was calculated for the specialization-oriented subpopulation N1 = 304 (n1 = 170). Considering the size of the population strata, the sample strata identified according to the study locations were calculated: Ilo (N1.1 = 74) and Moquegua (N1.2 = 230); These were determined as a function of the factor: fh = n / N; that is, fh = 170/304 as the estimated value and the actual value used in the study.

Similarly, a sample of 256 graduates was calculated for the academically oriented subpopulation N2=760 (n2=256). Given the size of the population strata, the sample strata were calculated, which in this case correspond to the study levels followed by the participants: master's degree (N2.1=682) and doctorate (N2.2=78)

; Defined as a function of the factor: fh=n/N; that is, fh=256/760 using the estimated value and the real value respectively.

# Data collection techniques and instruments

In this study, the methodology of the survey and the questionnaire was used as a data collection tool. Specifically, in this case, the Academic-Professional Competencies Assessment Scale as a self-report instrument, whose physical organization is presented in the form of a matrix (Sommer & Sommer, 2001) composed of 26 items with closed response alternatives to evaluate five dimensions; Academic-Professional

Competences of the graduates related to the dimensions: academic productivity, scientific production, achievements, teaching competence and propositional competence (see table 1).

Table 1- Structure of the instrument used	Table 1- Structu	re of the ins	strument used
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	Dimens ions	Indicato rs	Sub- indicators	N ite ms	Po nd
	Producti vity	Works of research	Research published in a local / regional magazine. Research published in national magazines. Research published in internationa l journals.	6	0 - 6
		Other publicatio ns	Other academic publications in local / national and internationa l media.		
		Consultin g and advisory actions	Advisory activities. Consulting activities.	6	0 - 6
Acade mic-	Scientifi c producti on	Knowledg e transfer	Disseminati on of knowledge. Disseminati on of knowledge		

Profess ional Compe tition			application experiences Disseminati on of skills for the exploitation of knowledge. Disseminati on of skills to exploit capacities in		
	Achieve ments achieved	education al achievem ents	R&D. Institutional acknowledg ments for achievemen ts of students in charge. Recognition from civil society for the achievemen ts of students under their charge.	4	0 - 4
		Professio nal achievem ents	Institutional recognition for professional achievemen ts. Recognition from civil society for professional achievemen ts.		
	Teaching compete nce	Classroo m climate	Promotion of active learning. Dynamic teacher- student interaction. Use of the environmen t as learning content.	6	0 - 6
		Significan ce of learning	Use of the environmen t as learning content. Learning content application. Promotion of autonomous learning. Induction of the foundation of learning.		
		Explanati on	Ability to elaborate plausible	4	0 - 4



Source: own elaboration based on the Academic-Professional Competences Assessment Scale

#### Validity and Reliability

The reliability of the instrument was analyzed in two moments: before starting the study, based on a pilot sample of 26 graduate students; and at the end of the study, based on the 440 cases of graduates that were part of the sample. In the first moment, with a single application of the instrument, the Kuder-Richardson 20 coefficient (Cohen & Swerdlick, 2010) was used, from which a KR20 = 0.82 was obtained. This value assumes a high reliability coefficient, which indicates the application of the instrument.

In the second moment, at the end of the study, the KR20 coefficient was also used, which involves working with the data collected in the second application of the instrument (Cohen & Swerdlick, 2010). In the second moment, the KR20 coefficient yielded a value of 0.81, very consistent with the value of the first application.

#### Data processing and analysis techniques

For data processing and analysis, automated procedures were used using computer resources. The programs used for the recording, systematization and data analysis tasks were Excel and SPSS.

## RESULTS

The results obtained in the research product of the data collected through the Academic-Professional Competence Assessment Scale are shown below.

Impact of postgraduate studies on Academic-Professional Competence (CAP).

**Table 2-** Level of Academic-ProfessionalCompetence (CAP) of professionalsgraduated or not from postgraduate studyprograms

CAP level	No training	graduate	With postgraduat training	
	Frequen	Percenta	Frequen	Percenta
	су	ge	су	ge
Severely deficient	406	92.3	378	85.9
Very	24	5.5	47	10.7
poor				
Deficient	10	23	fifteen	3.4
Suitable	0	0.0	0	0.0
Outstandi	0	0.0	0	0.0
ng				
Total	440	100.0	440	100.0

When analyzing the level of Academic-Professional Competence of the participants, it was observed that, in both moments, that is, before and after having completed postgraduate studies, all graduates occupy the deficient levels of the variable (deficient level, very high level). deficient and severely deficient level). However, there are some differences between a situation without training and another with postgraduate training, which show an improvement to be considered.

Note that the proportion of participants who occupy the severely deficient level goes from 92.3% to 85.9%, with a reduction of 6.4 percentage points in this level. This is explained by the fact that part of those who were at this level in the second moment, after postgraduate training, moved to the very poor level and even to the poor level. Note that the very poor level goes from only 5.5% in the situation without postgraduate training to 10.7% in the situation with postgraduate training, and even the poor level increases from 2.3% to 3.4%. which, although it is not an important proportion, shows the trend that is identified.

Impact of postgraduate studies on the productivity dimension of Academic-Professional Competence (table 3).

**Table 3-** Productivity level of postgraduate studies

Productivity level	No graduate training		<ul> <li>No graduate training</li> <li>With postgrating</li> <li>training</li> </ul>		ostgraduate
	Frequency	Percentage	Frequency	Percentage	
Severely deficient	389	88.4	369	83.9	
Very poor	35	8.0	42	9.5	
Deficient	13	3.0	22	5.0	
Suitable	two	0.5	6	1.4	
Outstanding	one	0.2	one	0.2	
Total	440	100.0	440	100.0	

This table presents the results of the level of productivity, the first dimension of the Academic-Professional Competence, both in the situation without postgraduate training, and with postgraduate training. Although the variations between one situation and another do not seem too important, there are still some differences between one situation and another, which suggest a positive change to consider. Thus, note that the proportion that occupies the severely deficient level, goes from 88.4% to 83.9%, which represents a reduction of just under five percentage points in this level.

On the other hand, the very poor level remains relatively close between both situations, with 8% and 9.5%, respectively. In addition, note that these slight increases are not only at the very poor level (difference of 1.5%), but are also observed at the poor level and at the appropriate level, with differences of two percentage points and almost one point. percentage, respectively.

Impact of postgraduate studies on the scientific production dimension of Academic-Professional Competence (table 4).

**Table 4-** Level of scientific productionaccording to postgraduate studies

Knowled ge	No training	graduate	With postgraduate training		
Projectio	Frequen	Percenta	Frequen	Percenta	
n Level	су	ge	су	ge	
Severely deficient	402	91.4	351	79.8	
Very poor	18	4.1	47	10.7	
Deficient	16	3.6	25	5.7	
Suitable	3	0.7	13	3.0	
Outstandi ng	one	0.2	4	0.9	
Total	440	100.0	440	100.0	

This table presents the results of the level of scientific production, the second dimension of the Academic-Professional Competence, both in a situation without postgraduate training, and with postgraduate training. In this case, important variations are observed in the levels that correspond to one situation another, especially in the severely or deficient and very deficient levels. Note that the proportion that occupies the severely deficient level, goes from 91.4% in a situation without postgraduate training, to 79.8%, in a situation with postgraduate training, which represents a reduction of 11.6 percentage points in this level.

On the other hand, the very low level goes from 4.1% of the situation without postgraduate training to 10.7% in the situation with postgraduate training, which means that a good group of participants who had an extremely insufficient level passed to a relatively better situation, although still with a very low level of the variable. Another important variation is observed in the corresponding level, which ranges from 0.7% in a situation without postgraduate training to a clear 3% in a situation with postgraduate training.

Impact of postgraduate studies on the dimension of achievements of the Academic-Professional Competence (table 5).

**Table 5-** Level of achievements achievedaccording to postgraduate studies

Level of achievemen	No gradua	te training	With p training	ostgraduate
ts achieved	Frequen cy	Percenta ge	Frequen cy	Percenta ge
Severely deficient	412	93.6	384	87.3
Very poor	27	6.1	37	8.4
Deficient	one	0.2	18	4.1
Suitable	0	0.0	one	0.2
Outstandin g	0	0.0	0	0.0
Total	440	100.0	440	100.0

In this table you can see the results of the level of achievements, third dimension of the Academic-Professional Competence, both in a situation without training of postgraduate studies, and in a situation of training with postgraduate studies. In this case, some variations are observed in the levels of the variable between situation one and another. In this sense, the proportion of cases that occupies the severely deficient level goes from 93.6% in a situation without postgraduate training to 87.3% in a situation with postgraduate training, which implies a reduction of more than six percentage points. at this level.

On the other hand, there is a slight increase in the very poor level, which goes from 6.1% in a situation without training in postgraduate studies to 8.4% in a situation with postgraduate studies. But where a significant increase can be seen, although the proportions are small, it is at the deficient level, which grows from only 0.2% to 4.1% in a situation with postgraduate studies.

Impact of postgraduate studies on the teaching dimension of Academic-Professional Competence (table 6).

**Table 6-** Level of teaching competenceaccording to postgraduate studies

Teaching competenc	No graduat	ate training With post training		ostgraduate
e level	Frequenc	Percenta	Frequenc	Percenta
	у	ge	у	ge
Severely deficient	388	88.2	377	85.7
Very poor	31	7.0	39	8.9
Deficient	10	23	12	2.7
Suitable	5	1.1	5	1.1
Outstandin g	6	1.4	7	1.6
Total	440	100.0	440	100.0

Table 6 shows the results of the level of teaching competence, fourth dimension of the Academic-Professional Competence, both without postgraduate studies and with postgraduate training. In this case, the variations in the levels of the variable between one situation and another are very small. In this sense, the proportion of cases that occupy the severely deficient level, goes from 88.2% in a situation without postgraduate training to 85.7% in a situation without postgraduate training, which represents a reduction of only 2.5 percentage points at this level.

On the other hand, there is a slight increase in the very poor level, which goes from 7% in a situation without postgraduate training to 8.9% in a situation with postgraduate training. In the other levels, the figures are so close to each other that they do not show much variation.

Impact of postgraduate studies on the purposeful dimension of Academic-Professional Competence (table 7).

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**Table 7-** Level of propositional competenceaccording to postgraduate studies

Purposeful competence level	No graduat	e training	With postgrad training	
	Frequency	Percentage	Frequency	Percentage
Severely deficient	362	82.3	337	76.6
Very poor	52	11.8	73	16.6
Deficient	twenty- one	4.8	25	5.7
Suitable	5	1.1	5	1.1
Outstanding	0	0.0	0	0.0
Total	440	100.0	440	100.0

This table presents the results of the level of propositional competence, fifth dimension of the Academic-Professional Competence. As in the previous analyzes, the variable is also observed, both in a situation without postgraduate training and with postgraduate studies; observing some variations in the lower levels of the variable between one situation and another.

In this sense, the proportion of cases that occupies the severely deficient level goes from 82.3% in a situation without postgraduate training to 76.6% in a situation with postgraduate studies; this means a reduction of 5.7 percentage points at this level. On the other hand, there is a slight increase in the very poor level, which goes from 11.8% in a situation without training in postgraduate studies to 16.6% in a situation with training in postgraduate studies to 16.6% in a situation with training in postgraduate studies to 16.6% in a situation with training in postgraduate studies, which implies a growth of almost five percentage points.

## DISCUSSION

Lines ago it was pointed out that the approach to graduate studies from an academic perspective has maintained certain trends that have limited the possibility of broadening and deepening theoretical reflection on this phenomenon. This is verified in different planes that begin, even, from the name used in the literature on graduate studies, which shows that the state of the art remains almost static, without the concepts that refer to the object of study have been extended.

Some lines of work, in this sense, have focused on internal perceptions, both of the institution's staff and of those who make use of these services, configuring other lines of work that have approached postgraduate phenomenological studies from а perspective. Consequently, the works in this field have acquired a more reflective than conclusive tenor, among which we can mention García (2016) in Mexico, González Arrieta (2015) in Costa Rica, Farías and Franco (2014) in Venezuela and, finally, Espinoza Babilón (2015) in Peru. In contrast to these perspectives, in this work the phenomenon of graduate studies was approached from a different approach, more focused on the interaction between the graduate and their actions in society.

Unlike the studies of the previous trend, the impact of this level of study focused on the actions of graduates of Graduate Schools in their community was analyzed, rather than the mere perception of their satisfaction about what they receive from this level of education. study. The impact measurement approach not only moves from a perceptual approach to an interactional approach, but also adopts a different way of establishing the measurement.

In this case, a scale was used by which specific actions were counted, whether or not those actions were carried out, whether or not there are specific aspects, with which, although it is lost in amplitude in the perception of the phenomenon, you gain in quantitative precision. This is a strength that gives rise to deepening the approach to graduate studies, beyond what has been done, since it goes from purely reflective approaches to quantified approaches.

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On the other hand, the very fact of going from focusing on the phenomenon as postgraduate studies, following the common line until now, to specifying what is to be analyzed, the fact of having or having completed postgraduate studies, understood here as postgraduate training , puts in evidence the express intention of approaching the phenomenon from methodologically broader and more pertinent perspectives than those generally used in this case; methodologies more consistent with the scientific purpose that should animate all research, especially those carried out at the postgraduate level.

However, it is curious that those who study at postgraduate levels and, therefore, are in the process of developing undergraduate work or a doctoral thesis, are commonly asked that their research consider as part of their purposes, not only a theoretical or scientific aspiration but a development in that sense; moreover, this type of search has become part of the recommendations that the same textbooks on scientific research or research methodology consider pertinent.

However, the results obtained in the present investigation allow us to point out that postgraduate training has a significant impact on the Academic-Professional Competence of the graduate of the Postgraduate School of the "José Carlos Mariátegui" University of Peru during 2019. In this regard, a quantitative study conducted by García-Ancira et al. (2017), who evaluated the impact of a postgraduate program on the professional and academic career of its graduates, determined some weaknesses of the program such as a low graduation rate, also observing difficulties of an institutional nature linked to the lack of visibility of the program and the tensions regarding the institutional academic recognition of its graduates.

Regarding the significant influence of postgraduate studies on the productivity dimension, significant differences were

observed between the distribution of productivity scores without postgraduate training and the productivity of graduates with postgraduate training. These results support what was stated by Barra (2019), who through a mixed methodology managed to demonstrate that there is a directly proportional relationship between the years of institutional accreditation and the number of doctors; likewise, between the number of publications and the number of projects of National Fund for Scientific and the Technological Development (Fondecyt).

For its part, the knowledge production Academic-Professional dimension of Competence showed a significant difference between the distribution of knowledge production scores of graduates without training and those with postgraduate training. Therefore, according to Rivero Rodríguez, Carmenate Fuentes and León García (2019), in order to raise the quality of teaching performance and, therefore, the quality of the training of professionals in different careers, it is necessary to direct the objectives and actions towards improvement academic of university professors on the basis of contemporary and contextualized conceptions.

On the other hand, it should be noted that postgraduate studies have a significant impact on the achievements dimension, verified through the significant differences between the distribution found of achievement scores achieved by graduates with and without postgraduate studies and considering that teachers are defined, first by the discipline they teach and then as university professors, since the vocation has contributed to the development of their teaching and research work. Whereas, the subjects identify with their disciplinary and investigative knowledge, which contributes to their training and, as a result, to the improvement of their praxis, since their work is closely linked to their field of study (Mairena Molina and Cabrera Hernández, 2020; Ruíz and Aguilar, 2017; Trillo Alonso,

Zabalza Beraza and Zabalza Cerdeiriña, 2018).

Postgraduate training has an important scope in the teaching dimension of the Academic-Professional Competence of the graduate of the Graduate School of the University "José Carlos Mariátegui", Peru, 2019. This is verified by means of the significant difference between the distribution of teacher competence scores without postgraduate training and with postgraduate training. These findings are related to those observed by students from four specialized master's degrees in a quantitative study of descriptive level, published by Valcazar Montenegro (2019) in relation to teaching competence from the students' perception; This revealed the existence of significant differences in the teachers `competencies from the students' perception, with a margin of error of less than 5%.

For their part, a descriptive study carried out by Restrepo Aguirre and Navío Gámez (2016) shows significant differences in terms of the competencies of postgraduate teachers from the point of view of teachers and students of Colombian universities.

On the other hand, the significant difference between the distribution of proactive competence scores between graduates with no postgraduate training and graduates with postgraduate studies made it possible to demonstrate the significant influence that postgraduate studies have on the propositional dimension of Academic Competence -Professional of the this regard, Lluch-Molins, graduate. In Fernández Ferrer, Pons Seguí and Cano García (2017) argue that it is interesting to observe how, unlike the high valuation that employers make of "soft" skills, graduates generally value highly plus discipline-specific knowledge and skills, perhaps because specific knowledge is taken for granted or because specific training can be provided by the companies themselves.

Finally, it should be noted that society is slowly or rapidly transforming into an inevitable process that can only be understood if one wishes to develop actions that allow knowledge of reality in all its aspects, dimensions and interconnections, given the limitations imposed by availability and the type of resources available.

Furthermore, the pressures to which Latin American universities have been subjected due to the successive and untimely changes that are taking place in society as it becomes more demanding and aware of what it wants and expects, have made the institutions Higher Education begin to rethink their internal processes and, above all, the learning offer they offer to society.

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#### **Conflict of interests:**

The authors declare that they have no conflicts of interest.

**Authors' contribution:** 

The authors have participated in the writing of the work and analysis of the documents.



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