

Analysis of the participation of the faculty in the PRODEP evaluation of a DES**Análisis de la participación del profesorado en la evaluación PRODEP de una DES**

TORRES-BUGDUD, Arturo†*, PALOMARES-RUIZ, María Blanca Elizabeth, SORDIA-SALINAS, Cesar and BÁEZ-VILLARREAL, Esteban

Universidad Autónoma de Nuevo León, Facultad de Ingeniería Mecánica y Eléctrica

ID 1st Author: *Arturo, Torres-Bugdud* / **ORC ID:** 0000-0003-2214-9394, **Researcher ID Thomson:** ABE-2852-2020, **ArXiv Author ID:** Arturo-Torres-Bugdud, **CVU CONACYT ID:** 216332

ID 1st Co-author: *María Blanca Elizabeth, Palomares-Ruiz* / **ORC ID:** 0000-0002-4079-6969, **Researcher ID Thomson:** S-4843-2018 **CVU CONACYT ID:** 339594

ID 2nd Co-author: *Cesar, Sordia-Salinas* / **ORC ID:** 0000-0003-2186-1080 **Researcher ID Thomson:** S-5666-2018, **CVU CONACYT ID:** 339888

ID 3rd Co-author: *Esteban, Báez-Villarreal* / **ORC ID:** 0000-0003-0112-6660, **Researcher ID Thomson:** S-5893-2018

DOI: 10.35429/JSEM.2023.26.10.1.7

Received January 10, 2023; Accepted April 30, 2023

Abstract

Quality is a fundamental issue that occupies educational institutions at all levels, not only nationally but also internationally, teachers, as well as education administrators, assume a leading role with society every day, seeking to achieve the desirable profile. For its performance, this work exposes the experience of the evaluation of teachers that is applied in Mexico, called PRODEP desirable profile in a Higher Education unit, with the support of the historical-logical method and the hypothetical-deductive method, the present document was carried out. when observing a decrease in its historical indicators, whose trend in annual participations was on the rise, being the reason for the present work its analysis and discussion.

Quality, PRODEP, Analysis

Resumen

La calidad es un tema fundamental que ocupa a las instituciones educativas de todos los niveles no solo a nivel nacional sino internacional, los docentes al igual que los administradores de la educación, asumen cada día un rol preponderante con la sociedad, buscando lograr el perfil deseable para su desempeño, en este trabajo se expone la experiencia de la evaluación a docentes que se aplica en México, denominada perfil deseable PRODEP en una dependencia de Educación Superior, con apoyo del método histórico-lógico y el hipotético-deductivo se realizó el presente documento al observar en sus indicadores históricos una disminución, cuya tendencia en las participaciones anuales iba en ascenso, siendo motivo del presente trabajo su análisis y discusión.

Calidad, PRODEP, Análisis

Citation: TORRES-BUGDUD, Arturo, PALOMARES-RUIZ, María Blanca Elizabeth, SORDIA-SALINAS, Cesar and BÁEZ-VILLARREAL, Esteban. Analysis of the participation of the faculty in the PRODEP evaluation of a DES. Journal of Systems and Educational Management. 2023. 10-26:1-7.

* Correspondence to Author (E-mail: maalvarezc@udla.cl)

† Researcher contributing as first Author.

Introduction

With regard to the problem of quality in higher education. According to the OECD (2013), some of the explanatory causes of its problems are its massification in the last two decades as a result of the multiplication and diversification of institutions, the restrictions coming from public spending and the need to perfect a quality assurance system.

According to (Küster-Boluda & Vila López, 2012), higher education has forgotten or ignored university professors and their teaching practice in quality issues, since their role is highly relevant in the quality of professional training, which is why, against this background, a topic of interest is presented in terms of teaching performance, which is directly related to educational quality. nJeréz (2015) quotes Bain, (2004) quality teaching is that which is capable of provoking extraordinary learning in students, that is to say, a permanent intellectual and personal development over time.

Bustos, (2015) cites (Bozu & Canto Herrera, 2009), stating that when we talk about the professional profile of teachers, we are referring to the set of competences that identify the training of a person. Furthermore, it points out that they are the main actors for the strengthening of the PE, therefore, a fundamental factor in the planning and evaluation that contributes to the vision and guidelines of any HEI is the quality teaching profile.

The development of this document is in reference to the participation of the teachers of a Higher Education Unit (HEU) in the annual call issued by the Ministry of Education (SEP) in Mexico to obtain the recognition of the desirable profile of the Professional Teaching Development Programme (PRODEP), whose objective is to analyse, with the support of the database records that the HEU has, The aim is to analyse, with the support of the DES database records, aspects such as its evolution, the intervening variables that may influence the indicators of its academic capacity, and once detected, to take future actions, so it is convenient to determine the requirements to be met by the teacher who intends to achieve the desirable profile in accordance with the operating rules issued by the government for this evaluation (DOF 2020).

It sets out as its objectives:

- To train human resources at higher and postgraduate level, as well as researchers in all areas of knowledge, who can respond to current requirements and have a favourable impact on the resolution of problems that contribute to regional development and community links.
- To promote scientific research, technological development and innovation, as well as culture and links with society.
- Promote training programmes at degree, specialisation, master's and doctorate levels, relevant to local, regional, state and national conditions, aimed at training professional-citizens committed to the economic, social, territorial and cultural well-being of peoples, communities and neighbourhoods at community, regional and national levels, whose activities contribute to promoting a process of valuation, strengthening, revitalisation and empowerment of native languages and cultures from a critical intercultural perspective, in order to contribute to the elimination of socio-territorial inequalities.

According to the Official Journal of the Federation (2020), it establishes that full-time professors (PTC) who satisfactorily fulfil the university functions and give evidence of this in the period of 3 years prior to the current year apply to this call.

The general requirements to obtain the recognition of the desirable profile in accordance with the rules of operation 2022 are:

- To have an appointment as Full-Time Lecturer (PTC), with a minimum seniority of one year, prior to the publication of the call for applications.
- To have obtained the preferred degree (doctorate) or minimum (master's degree).
- Demonstrate in a reliable manner their activities as shown in figure 1.

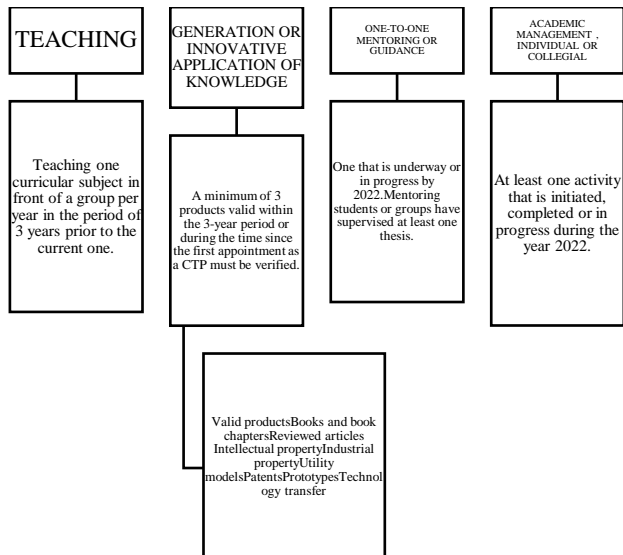


Figure 1. Requirements to obtain the recognition of the desirable profile according to the rules of operation
Source: Own elaboration

To take into account the completion or in-progress status of the activity in 2022, a maximum start in 2019 will be considered.

It is important to mention that none of the four required activities can be substituted by any of the others.

The evaluation and selection of the beneficiaries will be carried out with the support of peer committees, from the areas and disciplines of knowledge of the applicants, convened for this purpose by the SES. The expert members of the peer committees will be selected preferably from among high-level academics with proven experience in the evaluation of the National System of Researchers (SIN), the Ministry of Culture and the National Council for Science and Technology (CONACYT).

Methodology

This research took as a method a review of qualitative data with the support of Power Bi software to be used in the statistical model of linear regression with the support of MiniTab software. This same software was of support to create an analysis of means, using the T Student test method to statistically compare the significant data in the number of teachers with desirable profile of PRODEP and check more accurately the meaning of the decrease of data in recent years compared to past times, giving us a conclusion in which the reliability index is still high to have a minimum margin of error to the study that is intended to study.

Historical-logical: Its application allowed the analysis from several angles: the historical one that made possible the analysis and assessment of the subject studied through the sources related to the object of study, with the help of this method it was possible to detect the research problem, its evolution, and the trends that are presented in its evolution and development (Centty, 2010).

Documentary analysis: The use of this method favoured the study of documents related to the requirements of the evaluation programme, theories of the teaching profile, including the analytical-synthetic processing of the source (Dulzaides & Molina, 2004).

Analysis and synthesis: The analysis consisted of the separation of the various realities involved in the research problem, the elements involved and how they are inferred from each other, after which the synthesis was carried out by integrating each element into a set of proposals that are relevant to the analysis of the problem (Bajo, 2004).

The synthesis, by means of the databases and the participation trajectories, integrates the possible intervening variables, with the support of the graphs and trends, conclusions are proposed that will give rise to new studies.

Hypothetico-deductive: the use of this method made it possible to propose a hypothesis as a consequence of its inferences, the observation of facts and the analysis of empirical data, principles and/or more general laws.

Hypothesis

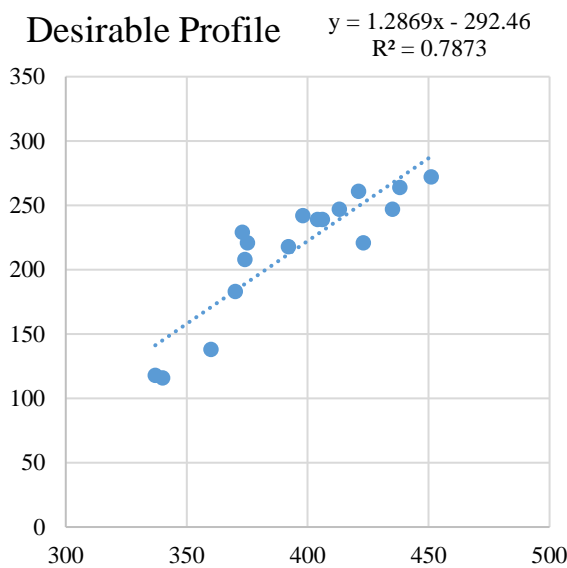
There is a decrease in the participation of teachers to be evaluated to obtain the desirable profile. There are intervening variables that influence the decrease in participation.

This model explains 78.73% of the variation of the data in the tables presented, in which it is possible to estimate the amount of desirable profile that there is in each certain amount of PTC.

With reference to the two hypotheses, Ho being the null relationship between the data and H1 being the correlation of the presented data, we can conclude that hypothesis 1 (H1) contains sufficient evidence to be significant. It is estimated that approximately 26 CTPs have a Desirable Profile and given that the reliability is 95% it can be confirmed that the conclusion of this model is of sufficient confidence and demonstrable according to the process used.

On the X-axis are the PTC and on the Y-axis are the Professors with PRODEP.

This model explains 78.73% of the variation in the data, so it is a good predictor. With this model it is possible to estimate the amount of desirable profile with X amount of PTC. The standard deviation of the model is 26.23 PTC are desirable profile. Since the value of Fisher's cumulative tables is $F_{0.05,1,15}=4.54$; and this is less than the F value of the ANOVA; with 95% confidence there is sufficient evidence to reject the Ho, therefore, the model expresses a significant simple linear regression between the number of PTC with the Desirable Profile as shown in graphic 1.



Graphic 1 Statistical model
Source: Own elaboration

When the analysis was done, taking into account the regression equation, the coefficients and the analysis of variances, it was possible to plot the corresponding linear regression together with the variation of data based on the mean, letting us know that, although in the last four years the number of PTC with desirable profile has decreased, the PRODEP programme remains stable and the data remains correlated with the other without any interference to the contrary (H1 is not rejected). Also, the analysis was done with 95% reliability, demonstrating that the model has accurate and demonstrable data for the study (Figure 3).

Regression equation

$$Desirable\ Profile = -292.5 + 1.287\ PTC \quad (1)$$

Coefficients

Term	Coef	EE the Coef.	Value T	Value p	FIV
Constant	-292.5	68.4	-4.28	0.001	
PTC	1.287	0.173	7.45	0.000	1.00

Summary of the model

S	R-CUAD.	R-CUAD. (ADJUSTED)	R-CUAD. (PRED)
23.2687	78.73%	77.31%	71.94%

Analysis of Variance

SOURCE	GL	SC AJUST.	MC AJUST.	VALOR F	VALOR P
REGRESSION	1	30059	30058.8	55.52	0.000
PTC	1	30059	30058.8	55.52	0.000
ERROR	15	8121	541.4		
TOTAL	16	38180			

Figure 3 Regression equation
Source: Own elaboration

The DES undertook some strategies to motivate the participation of its professors, as this has an impact on its indicators, by giving courses and workshops, personalised advice on how to fill in the call for applications, including the new PTCs. Figure 4 illustrates the strategies that the DES has employed to motivate the participation of teachers, including new PTCs.

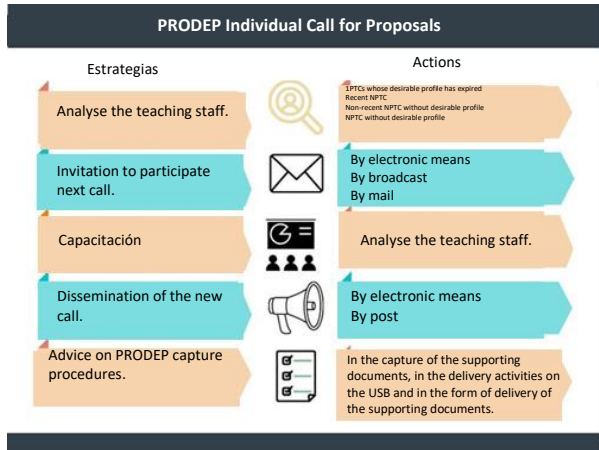
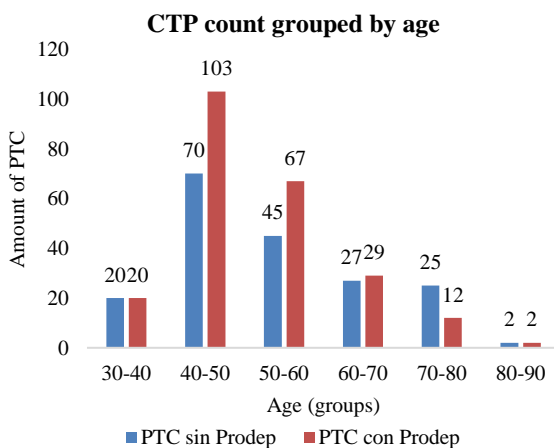


Figure 4 DES strategies to attend the PRODEP call for proposals

Source: Own elaboration

Results

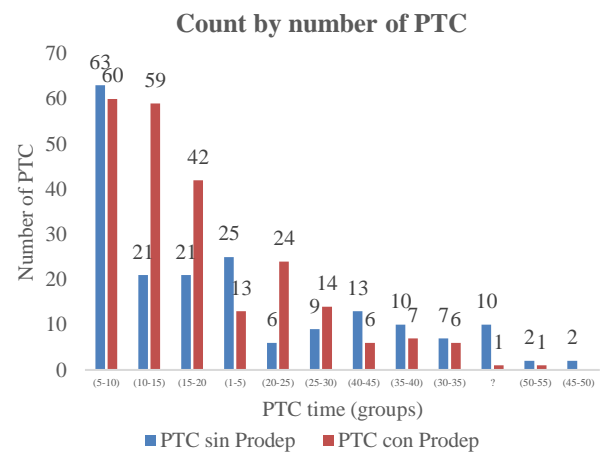
In the databases of the Unit's professors, various variables were studied, such as the age of the PTC and their participation in the Call, where participation is observed on a par in the age range of 30 to 40 years of age, that is to say 20 professors who do not have the profile and 20 who do have it, in the age range of 40 to 50 there were 70 who have not achieved the Profile and 103 who did in the year 2022, in the range of 50 to 60 there are 45 PTC who do not have the profile and 67 who did obtain it, while people in the range of 60-70, 27 teachers do not have the desirable profile and 29 who do have it, and in the age range of 70-80 2 teachers do have the profile and two do not, these factors can be further analysed in another study, it can be seen in graphic 2.



Graphic 2 This graph shows the number of teaching and research staff by age range, with a predominance in the 40-50 and 50-60 age ranges with PRODEP

Source: Own elaboration

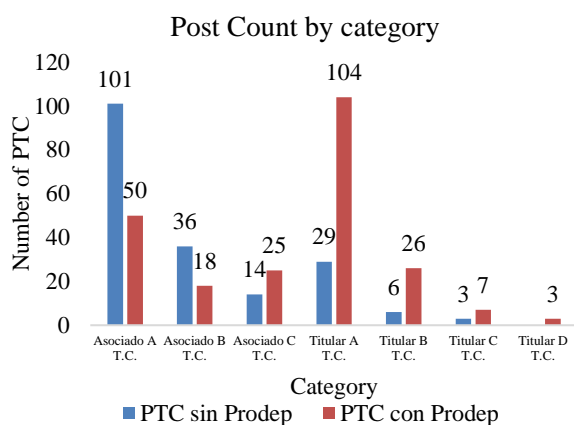
Another variable that was analysed is the seniority as PTC and their response to the call for applications, since in this data analysis, although the numbers in the comparison seem to be equal (63 and 60), the teachers who have the Profile and those who have not achieved it are in the range of 5 to 10 years of seniority; however, this number should be worked on continuously to encourage participation, In the range of seniority as PTC from 10 to 15 years, 59 teachers have the profile and 21 teachers still do not have it, in the range of seniority from 15 to 20 years, 42 people do have it and 21 people do not, these data are significant because it will be necessary to encourage teachers with less seniority to participate in the evaluation, this can be seen in graph 3.



Graphic 3 This graph shows the number of PTC by seniority rank. The ranges of 5 to 10 and 10 to 15, 15 to 20 years and 20 to 25 years of seniority show that the largest number of lecturers with the desirable profile predominate

Source: Own elaboration

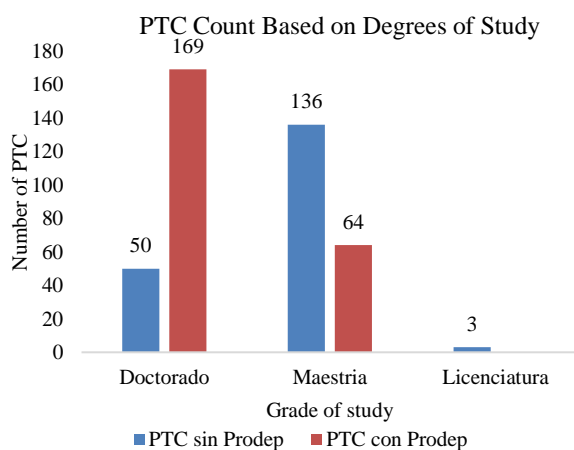
Another variable that was analysed in the 2022 database is the categories that the professor achieves in the tabulators of the UANL, predominating the greater number of PTC in the category of Titular A, nevertheless the population that will have to be applied to achieve it are the categories of Associate A and B since they are the professors that will continue developing to future, with particular emphasis will contribute to increase the indicators of the academic capacity of the dependency, as it is shown in graphic 4.



Graphic 4 This graph shows by categories according to the Human Resources tabulator where the largest number of PTC is distributed, with a predominance of tenured category A with 104 professors who have the desirable PRODEP profile

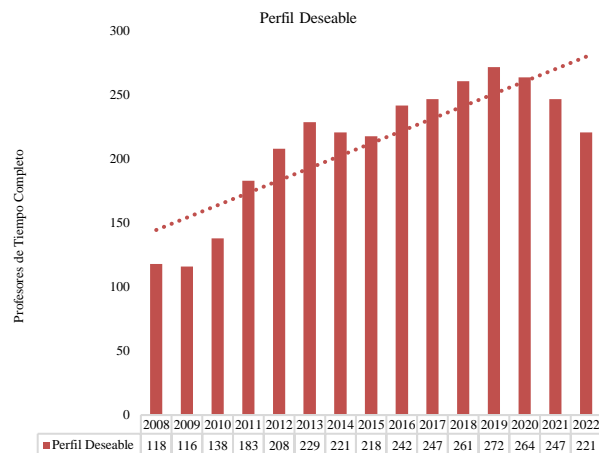
Source: Own elaboration

Another variable that was analysed in the database is the degree of studies of the PTCs, with the highest number of PTCs with the Profile appearing in Doctorate, more than in Master's degree, which should be emphasised in those who do not participate in the call or who do not have the Profile, as both should work to strengthen the indicators of academic capacity, to be considered in the future by the DES, as shown in graphic 5.



Graphic 5 Here we can see the graphical representation of the PTCs belonging to PRODEP who have the highest degree of qualification in the case of the PhD degree and those who do not, as well as those who have a Master's degree

Graph 6 shows the evolution of the participants in the evaluation of the desirable profile from 2008 to 2022.



Graphic 6 Number of full-time teachers with a desirable profile over the years

Conclusions

According to the 2022 analysis, there were several variables that intervened to consider a decrease in the participation of the call, among which we can list the following:

- The age factor of the participants who consider that it is no longer appropriate to allocate time to academic production.
- The seniority factor, this approach applies to young full-time professors who have recently been appointed and have not published and to older professors who have decided not to publish.
- Decrease in the period 2021 which coincides with the pandemic.
- Changes in the dates of the call for proposals due to renewal of the governmental body.
- Retirements and departures caused by the pandemic.

These results give rise to continue with further research and to be able to emphasise possible alternative solutions that contribute to the academic capacity of the agency.

References

Bajo, M. . (2004). *Competencias genéricas*. Madrid.

Bustos Arista, S. (2015). DESARROLLO DE UN SISTEMA INTEGRAL DE PROCEDIMIENTOS QUE CONTRIBUYE A PERFECCIONAR EL PERFIL DEL

TORRES-BUGDUD, Arturo, PALOMARES-RUIZ, María Blanca Elizabeth, SORDIA-SALINAS, Cesar and BÁEZ-VILLARREAL, Esteban. Analysis of the participation of the faculty in the PRODEP evaluation of a DES. Journal of Systems and Educational Management. 2023

DOCENTE UNIVERSITARIO. México.

Centty. (2010). *Una secuencia para definir el problema de investigación*. Conexión. DOF. (29 de 12 de 2020). *Diario Oficial de la*

Federación . Obtenido de https://www.dof.gob.mx/nota_detalle.php?codigo=5609172&fecha=29/12/2020#gsc.tab=0

Dulzaides, M., & Molina, A. (2004). *Análisis documental y de información: dos componentes de un mismo proceso*. Cuba.

Jeréz Yáñez, Ó., Orsini Sánchez, C., & Hasbún Held, B. (2016). *Atributos de una docencia de calidad en la educación superior: una revisión sistemática*. Valdivia: Estudios pedagógicos .

Küster-Boluda, I., & Vila López, N. (2012). El docente universitario y sus efectos en el estudiante. En *Estudios Sobre Educación* (págs. 157-182).

OECD. (2013). *Quality assurance in higher education in Chile 2013*. Paris: OECD Publishing. Obtenido de In Quality assurance in higher education in Chile.

.