REVIEW ARTICLE

Pertinence of educational quality in PNPC Postgraduate Programs

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Abstract

This document aims to show an overview of factors that allude to the assurance of educational quality at the higher level, specifically of the Postgraduate Programs that belong to the National Quality Postgraduate Program (PNPC) of the National Council of Science and Technology (CONACYT). According to the PNPC Register in Mexico, there are 2,435 master's and doctoral degrees recognized by the PNPC, which in a given period are evaluated according to guidelines and criteria established by CONACYT. To this end, Higher Education Institutions (IES) submit to an institutional commitment

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that supports the promotion, development and permanence of postgraduate courses, providing the necessary elements to cover the criteria and indicators evaluated. In this sense, based on a qualitative methodology with a documentary approach and descriptive method, it was obtained that, in the case of the Autonomous University of Tabasco, the admission and permanence of a postgraduate degree in the registry is strengthened in the educational quality with actions in productivity, teaching, research, linking and mobility. Taking as a conclusion that the articulation of postgraduate courses entails institutional innovation processes that establish patterns of strategies towards greater scope in the qualitative and quantitative indicators of the PNPC's postgraduate educational programs.

Keywords: accreditation, university curriculum, educational quality, educational policy, postgraduate, educational programmes.

Pertinencia de la calidad educativa en los Posgrados del PNPC

Resumen

Este documento tiene como objetivo mostrar un panorama de los factores que aluden al aseguramiento de la calidad educativa en el nivel superior, específicamente de los Programas de Posgrado que pertenecen al Programa Nacional de Postgrado de Calidad (PNPC) del Consejo Nacional de Ciencia y Tecnología (CONACYT). Según el Registro PNPC en México, existen 2,435 maestrías y doctorados reconocidos por el PNPC, los cuales en un período determinado son evaluados de acuerdo a lineamientos y criterios establecidos por CONACYT. Para ello, las Instituciones de Educación Superior (IES) se someten a un compromiso institucional que apoya la promoción, desarrollo y permanencia de los cursos de posgrado, aportando los elementos necesarios para cubrir los criterios e indicadores evaluados. En este sentido, a partir de una metodología cualitativa con enfoque documental y método descriptivo, se obtuvo que, en el caso de la Universidad Autónoma de Tabasco,

la admisión y permanencia de un posgrado en el registro se fortalece en la calidad educativa con acciones en productividad, docencia, investigación, vinculación y movilidad. Tomando como conclusión que la articulación de posgrados conlleva procesos de innovación institucional que establecen patrones de estrategias hacia un mayor alcance en los indicadores cualitativos y cuantitativos de los programas educativos de posgrado del PNPC.

Palabras clave: acreditación, plan de estudios universitarios, calidad de la educación, política educacional, posgrado; proyecto de educación.

Pertinência da qualidade educacional nos Programas de Pós-Graduação do PNPC

Resumo

O objetivo deste documento é apresentar um panorama dos fatores que aludem à garantia da qualidade no ensino superior, especificamente nos Programas de Pós-Graduação do Programa Nacional de Pós-Graduação em Qualidade (PNPC) do Conselho Nacional de Ciência e Tecnologia (CONACYT). Segundo o Cadastro PNPC do México, existem 2.435 alunos e documentos reconhecidos pelo PNPC, que em um determinado período são aprovados de acordo com as diretrizes e critérios estabelecidos pelo CONACYT. Portanto, as Instituições de Ensino Superior (IES) estão sujeitas a um compromisso institucional de apoiar a promoção, ou desenvolvimento e permanência de cursos de pós-graduação, fornecendo os elementos necessários ao cumprimento dos critérios e indicadores endossados. Nesse sentido, a partir de uma metodologia qualitativa com abordagem documental e método descritivo, observa-se que, no caso da Universidade Autônoma de Tabasco, o ingresso e a permanência dos pós-graduados no cadastro de qualidade educacional são promovidos com ações de produtividade, ensino, pesquisa, vinculação e mobilidade. Concluiuse que a articulação programas de pós-graduação envolve processos de inovação institucional que estabelecem padrões estratégicos para maior abrangência e indicadores quantitativos a programas de pósgraduação do PNPC.

Palavras-chave: acreditação, currículo universitário, qualidade educacional, política educacional, pós-graduação, programas educacionais.

Introduction

In Mexico, education at the higher level, in particular the Postgraduate level, configures processes of specialization in lines of generation and application of knowledge, specific according to the Postgraduate Educational Program.

In this sense, in public and / or private HEIs, the level of skills and knowledge contemplated in the Study Plan and Programs envisions the teaching-learning process according to local, regional, national and international needs.

This more demanding educational level demands an academic performance of the student in a transversal, sustainable and comprehensive way; For this, the basic academic nucleus, which is made up of research professors with an academic profile according to the needs of postgraduate development, plays a transcendental role, since they are responsible for the training of students enrolled in the educational program.

Mexico, according to the Statistical Yearbook of Higher Education of the National Association of Universities and Institutions of Higher Education-ANUIES, in the 2018-2019 school year, there was an approximate enrollment of 361, 267 students in the Postgraduate area distributed in specialty, Master's and PhD (ANUIES, 2019).

In 2018, according to the PNPC registry, there were a total of 2,346 accredited quality postgraduate programs, having a growth

of 7% compared to the first semester of that same year. Regarding the impact of the PNPC programs by area of knowledge of the National System of Researchers (SNI), the basic sciences made up 15% of the total accredited programs, 51% the Applied Sciences programs and the humanities area, represented the third place with 34% (CONACYT, 2019a).

Derived from the above, this document aims to show an overview of those factors that allude to the assurance of educational quality at the higher level (Baca et al, 2014), specifically of the Postgraduate Programs that belong to the National Postgraduate Quality Program of the National Council for Science and Technology. In a particular case, factors that have contributed to the educational quality of postgraduate courses at the Universidad Juárez Autónoma de Tabasco are addressed from a general perspective.

This document used a qualitative methodology with a documentary approach and a descriptive method; To understand its dynamics, the descriptive method was applied, where the information consulted helps to define the bases of said work. The language used to present this document was American English.

Educational quality

Education must be a guarantee for every person since this is a right to which everyone must have access. Formal education is the substantive basis for every person to develop in a context through a profession (Payán et al., 2021). Quality education includes comprehensive training as human beings with values and principles that serve to live in community and thus contribute to the strengthening of society in general (Alba & Padilla, 2016, p. 70).

At the higher level, a graduate degree represents specialization in a particular subject or area. In order to guarantee that the quality of higher education institutions in different dimensions (teaching and administrative resources, equipment, infrastructure, programs and courses offered, among others), it is essential to have the tools, protocols and regulations.

The next step is to properly manage the aforementioned resources to achieve the goals and plans that the institutions have drawn up. In that perspective, UNESCO (2008) warns that what can be conceived as educational quality must be seen under a dynamic, evolutionary approach because it is not subject to a determined process but changing according to social phenomena, social, cultural and economic facts, which influence the transformation of new challenges in educational quality. It considers that education systems should be governed from flexibility, which helps to determine the form and manner they will use to approach a quality framework that contains the following elements:

Table 1. Dimensions of the educational quality of the student.

Learning	Processes What the student brings Go out to find the students Content Learning environment	Legal framework Administrative and management systems Implementation of good policies Resources Measurement of learning outcomes
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Source: UNESCO, 2008.

In these dimensions, UNESCO emphasizes educational quality from a human rights perspective. For Barba (2018), the quality of education is primarily linked to equity, based its postulate on the basis of the third Constitutional article of the Mexican state. This postulate contextualizes it in the following way:

The presence of equity in the equation of the quality of education indicates the need for a moral transformation of the educational service, which is highly influenced and even more determined in some of its elements by what happens outside the school. This is not new; it has accompanied the history of the creation of the educational service; what is new is in the perspective of equity as a constitutional principle. (p. 975)

This author establishes equity as an important axis to achieve educational quality through transformation processes by linking the needs of the context, generating new knowledge and technology transfer, training high-level human capital and contributing to respond to problems and needs of the environment, whether institutional, social or private.

In a similar position, Quintana (2018) points out the educational quality from the following position:

Quality as a horizon is an idea that cannot be homogenized or standardized. Not all horizons are at the same distance and depend on the development and maturation of each institution. This maturation is conditioned by the capacity of the institution to understand its pedagogical reality and the interpretation of its needs and expectations. Necessity is the basic condition that institutions experience for the transition to new conditions, while expectations are supported by the ability to visualize transformations and the ability to see the potential of an object or a representation. (p. 278)

It is denoted that educational quality is not generalized, although they may have general elements such as student competencies and abilities; in the end these will be determined by the needs of the institution and the environment in which it is circumscribed. For this reason, it is considered important that the Study Plans carry out feasibility and relevance studies with a local, regional, national and international scope, aligned with the mission and vision of the educational institution and its educational model.

In this regard, in the case of the Universidad Juárez Autónoma de Tabasco, the educational model is determined in three aspects that are set out below:

Table 2. UJAT educational model.

Comprehensive student training	Educational quality	Sense of belonging
Continuous process of development of the potentialities of the person, balancing the cognitive and socio-affective aspects towards the search for their fullness in knowing how to think, know how to do, know how to be and know how to live with others, as professionals and people adapted to current circumstances and future.	It implies having achieved the characteristics, standards and indicators established by national and international organizations, translated into the training of humanist professionals capable of integrating into the labor field and effectively influencing social development.	Integration of the university community from the appropriation of the principles and values of our institution, which translate into a social and professional commitment to promote and enhance the university identity.

Source: Educational Model-UJAT. 2005.

For the UJAT, the element of educational quality is linked to admission, permanence of educational programs in certification processes. In this regard, for postgraduate a quality assurance mechanism is to enter and remain in the PNPC-CONACYT. Likewise, as governed by the General Regulations for Postgraduate Studies, Curricular Guidelines for Postgraduate Studies and Postgraduate Tutoring Regulations, in particular each Plan and Study Programs must be continuously restructured according to the transformation processes and dynamics of the area or discipline of the Educational Program.

CONACYT-PNPC

The National Council of Science and Technology CONACYT is an institution that supports and promotes Science and Technology in the Mexican state, from the financing of projects, as well as the training of researchers.

CONACYT formulates and finances scholarship programs and, in general, provides support for the training of researchers and scientists in its various modalities, as well as integrates information from scholarship programs offered by other national institutions,

international organizations, and foreign governments. in order to optimize resources in this matter and establishes coordination schemes, in the terms of the calls that are issued for this purpose. It establishes policies to implement programs that promote the promotion, training, development, and engagement of high-level professionals in the country, attending to local and regional priorities through the instruments established in the Science and Technology Law. (CONACYT, 2020)

This institution aims to improve conditions from different angles to such a degree that the development and growth of science and technology in Mexico is conceived in an interlocutory way.

The National Quality Postgraduate Program is a node that contributes to public policy in improving education, given the recognition of the quality of training in postgraduate educational programs offered by higher education institutions and research centers, it carries out evaluation processes (Lezama, 2019) characterized by the rigor of academic peers.

The accredited postgraduate courses in their evaluation indicate high standards in terms of quality and relevance; which commits the IES to offer teachers, students, academic institutions, the productive sector and society, information and guarantee of postgraduate courses, conceiving it in a relevant and quality way.

The administrative function of postgraduate courses entails planning, organization, discipline and a short, medium and long-term work plan that allows the permanence and promotion of educational programs. (Silva, 2021).

According to the (CONACYT, 2011) in the Glossary of Terms, quality is conceived as the degree to which a set of differentiating features inherent in educational programs meets an established need or expectation. Owned by a graduate program that meets the criteria or standards previously established in the framework. In this vein, quality assurance is described as those actions carried out by higher education institutions and research centers in order

to guarantee the effective quality management of their programs. Being then the educational institution who through educational programs accredits strategic axes based on an Institutional Development Plan attached to the Government Development Plans.

Postgraduate academic programs are based on contributions to the development of society in its context, as well as the impacts they will have on solving its needs (Parra & Arias-Giraldo, 2016).

The Mexican Council for Postgraduate Studies COMEPO (2015) points out that the relationship of postgraduate studies with their context through cooperation and linkage is essential to achieve the objective of higher educational quality, generate new knowledge and technology transfer, train high-level human capital and contribute to providing answers to problems and needs of the environment, whether institutional, social or private. It familiarizes the student's training in a comprehensive way with skills and knowledge that allow them to meet the needs of their environment. Likewise, COMEPO views the PNPC evaluations, which as a peer-evaluated practice allows determining the degree of coherence between objectives, goals, academic structure,

The evaluation carried out by CONACYT-PNPC to a postgraduate represents an academic process made up of a Committee of Peers, which based on the means of verification determine the quality and relevance of the educational program, in case of being accredited the postgraduate may receive recommendations, judgments of value or diagnosis that must be attended in the period of validity through an Improvement Plan based on the reference framework and thus continue with the benefit of the Scholarship Program so that the student is fully dedicated to the program.

The PNPC has two important documents that for all those postgraduates represent the guide and instrument to follow to validate their admission and permanence. The first is the reference framework (CONACYT, 2019b) document by which it recognizes that the PNPC recognizes the quality and relevance of postgraduate programs in two orientations:

- Research-oriented graduate programs. They are offered in specialty, masters and doctorates in various areas of knowledge.
- Career-oriented graduate programs. They are offered in doctorates, masters and specialty, with the purpose of encouraging collaboration with sectors of society.

This document provides the content guide in the formulation of admission and permanence to the PNPC considering six basic elements: 1) Self-evaluation of the postgraduate program; institutional commitment; internal quality assurance system; improvement plan; website of the graduate program and statistical information on the program. These categories contain specific criteria that must be integrated digitally, it is called means of verification, which are those records that range from the admission process, permanence, graduation, qualification and graduate monitoring, as well as productivity aspects, mobility, budget and infrastructure. The second is Exhibit A; which is divided into Annex A programs with research orientation (CONACYT, 2019c) and Annex A programs with professional orientation (CONACYT, 2019d).

Assurance of educational quality in Postgraduate PNPC-UJAT The Universidad Juárez Autónoma de Tabasco is a public institution that offers quality educational programs from the south-southeast region of Mexico; According to the Fourth Activity Report of the UJAT (2019), "the University has endeavored to specify a postgraduate educational offer characterized by excellence in the training of human talent with a high sense of responsibility and commitment, trained to face diversity of social and productive requirements of the country" (p. 18). In an effort to consolidate the UJAT as a quality university, during the period from 2014 to 2019 the increase in postgraduate courses at the PNPC doubled as shown in the following graph.

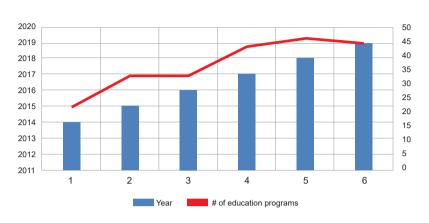


Figure 1. Postgraduate Education Programs Recognized in the PNPC.

Source: UJAT-Institutional Development Plan 2020-2024, 2020.

According to the above graph, it is denoted that in the 2014-2019 period, the maximum number of postgraduate registration adhered to the PNPC was in 2018 with 46 postgraduate programs, for the year 2019 there was a loss of two postgraduate programs that lost their permanence in the PNPC, which represents a minimum for the number of programs that have the permanence and recognition of CONACYT. In accordance with the Institutional Development Plan 2020-2024; It is recognized that at the postgraduate level (specialty, master's and doctorate) 44 of the 61 programs (72.13%) of the UJAT are recognized in the PNPC. Of the group, five are specialty, 27 masters' and 12 doctorates. Regarding their status, 22 are of Recent Creation, 18 In Development and four Consolidated (UJAT, 2020).

So that postgraduates can undoubtedly maintain the function of the Tutoring System (UJAT, 2017) contributes to the improvement of the training process of postgraduate students, with academic support, which gives them the opportunity to have an adequate trajectory of their Curriculum, as well as the development of their skills, so that they can solve the problems that arise during their training and promote a study and work methodology that allows the completion of their studies and the obtaining of the degree or

diploma, according to the level of studies completed, in a timely manner. In that sense, tutoring is understood as the accompaniment process carried out by a Tutor or Tutorial Committee.

The implementation of the figure of the tutor and the tutorial committee takes place from the entrance of the student, who is notified that according to his research topic he has been assigned a tutor or tutorial committee, together they develop a work plan in the period of the graduate that will allow him to attend classes, carry out extracurricular activities; carry out your stay and presentation of progress. With this, the CONACYT is fulfilled, which establishes as a requirement to be a quality postgraduate, to have a tutoring program that supports students, both in their academic development and in research.

In the development of educational quality assurance, it is important to point out that a primary strategic action for implementation, monitoring and evaluation is the use of information and communication technology, which integrates the quality of these postgraduate courses (Diez, 2011), combined to the functions of the academic manager and administrative manager, distinguishing that the educational program complies with the institutional provisions and that corresponding to CONACYT. The role of these two figures is combined in a dynamic and collaborative way, a situation that has led postgraduates to stay and rise in the level of PNPC CONACYT.

Therefore, the main functions in which the same Information and Communication Technology is used in institutional competence are described below:

 The Universidad Juárez Autónoma de Tabasco, within its organic structure has the Information Technology and Innovation Management area that collaborates interlocutively with the Postgraduate, Finance, Institutional Planning and Evaluation, School Services, Research Secretariat, Postgraduate areas and Linkage, Library.

- As a process of each postgraduate educational program, there is an infrastructure (Hernández et al. 2020) with computer equipment and material that allows the systematization of information in tools, programs or multiplatform file hosting services in the cloud, in the that files are stored and synchronized online, as well as between computers where the changes generated in the files and folders generated or modified are viewed.
- The use of information technology is present in databases and virtual libraries in which the University acquires licenses and grants access to students and professors.
- Another aspect to consider is the intranet system that the University has for the enrollment, re-enrollment and evaluation processes, according to the educational program. As well as the provision of virtual classrooms to teach classes, refresher courses for students and teachers, seminars, workshops, among other extracurricular activities, everything is done through the Microsoft Teams platform.
- In the criteria to be evaluated by CONACYT, each educational program must have a web page of the postgraduate program in which the study plan, student enrollment, basic academic core, Lines of Generation and Application of Knowledge, productivity are displayed.

Information and communication technology in competition CONACYT:

 The frame of reference for the renewal and follow-up of graduate programs. Statistical information of the program is intended to compile statistical information to integrate the database of the program, capture or update available on the CONACYT website.

- In this sense, the mobility criterion to be evaluated in postgraduate programs seeks greater flexibility in compliance with actions of executing courses or seminars with curricular value (virtual or face-to-face).
- The PNPC postgraduate evaluation process always implies having the necessary and state-of-the-art computer equipment and tools to meet the requirements in a timely manner.
- The application stages, online pre-evaluations, virtual or face-to-face plenary evaluation, formalization and follow-up always require monitoring and work on the CONACYT platform and internal operational processes of the institutions that allow them to work the means of verification according to the progress of the programs educational.

The use of information and communication technology in the development of postgraduate courses has tested the willingness of openness and acceptance (Oliva et al, 2005) in different ways of implementing teaching, research, linking and mobility actions. Thus, a process of guarantee and access of the human right to higher-level education in the Mexican state is contributed in a comprehensive manner (Prats et al, 2020). This is aimed at the development of postgraduate educational programs in technological innovation processes that consolidate the indicators of the Educational Institution having greater demand and impact regionally, nationally and abroad.

The administrative function of the postgraduate courses involves planning, organization, discipline, a short, medium and long-term work plan that allows the permanence and rise in level of educational programs. The postgraduate quality assurance system is constituted with actions that are supported by the use of the best available knowledge through digital platforms and innovation processes internally in Higher Education Institutions, improving social processes, technological, innovation and scientific.

Information and communication technology (Altamirano, 2010) has allowed a progressive process of postgraduate courses at UJAT that involves trained personnel, material and technological equipment according to the needs of each educational program with the desire and interest to fulfill the commitment institutional acquired with the PNPC-CONACYT.

Educational innovation through digital platforms has been a mechanism that has granted greater academic, student and research linking activities at the local, regional, national and international level and impact. For this reason, it is important to highlight that information and communication technology allows postgraduates an integral and sustainable development from administrative, academic and research processes.

As an educational institution, undoubtedly an important aspect that is considered is the allocation of budget and financing for postgraduate courses, in this regard according to the diagnosis of Postgraduate in Mexico made by COMEPO, which corresponds in the south-southeast region during the 2014-2015 period. The budget allocation is considered to be rational, equitable and sufficient in all areas that make up the development of postgraduate studies. For the year 2019, according to the COMEPO declaration, the allocation of resources and budget cuts are highlighted as a complex situation, so the position expressed was that the law and subsequent budgets give due priority to financing public institutions of higher education,

Pulido y Espinoza, 2018 points out that it is committed to educational investment through various economic means that accommodates the advancement and progress of the Educational Program to a high impact. The foregoing may come from aspects such as insurance and financing systems through concrete actions in the Educational Program. Since the growth of the postgraduate programs in 2014, the university has granted infrastructure facilities and budget allocation, as such each Academic Division has its own income category, which is the monetary income generated by academic activities, service or administrative procedures that has

the Academic Division; likewise, the allocation of federal resources such as the Comprehensive Strengthening Program (PIFI),

On the part of CONACYT through the PNPC, it is important to point out that, with the national scholarship assignments, national mobility and abroad, granted by CONACYT, students have been able to finance their education from the educational program. Through these postgraduate courses, the IES participates in calls issued by CONACYT and in which the development and strengthening of postgraduate courses can benefit. To mention, during these years it has been possible to collaborate with researchers who participated in postdoctoral stays and had significant participation in the postgraduate indicators. Other sources of institutional and non-institutional financing have been those described in table 3.

Table 3. Financing that strengthens the PNPC postgraduate programs of the UJAT.

Institutional programs	Features
Scholarship from the Institutional Program for Academic Improvement (PISA) Students.	The graduate student was benefited with a monthly economic stimulus. With the condition of maintaining a minimum qualification, maintaining their academic trajectory without interruption, graduating on time and in accordance with the Postgraduate Study Plan without having failed subjects as well as complying with the terminal efficiency according to the call in which they have participated.
Scholarship from the Institutional Program for Academic Improvement (PISA) Professors.	Scholarship aimed at all University professors who wish to continue with their postgraduate studies. It is intended to support the academic discharge of the teacher to carry out his continuous training.
Institutional academic exchange program.	Its objective is to promote, through collaboration agreements, stays of students and teachers in other national or foreign educational institutions.
CONACYT. National Scholarship.	Application process for a national scholarship awarded monthly during the period of the educational program. In this area, indigenous students, single mothers, have participated in calls to end their condition. In the same way, in order to comply with the "mobility" indicator, students are applied for scholarships for national and foreign stays, today mobility scholarships.

Institutional programs	Features
Scholarships from associations, programs, non- governmental foundations	This type of financing is in accordance with calls for proposals addressed to specific research lines, relevant topics according to complex situations of vulnerable sectors.
Government and private sector	Financing aimed at people or groups of people with the need for training and continuous updating by the institution for its staff.

Source: UJAT. CONACYT.

Undoubtedly, the information presented in Table 2 indicates the strengthening of resource allocation and exercise of the same in a PNPC graduate degree, with this element the student's teaching-learning process is strengthened and the academic and research aspect for the student is strengthened. and teacher. It is vital to point out that the administrative function of the postgraduate programs involves planning, organization, discipline, a short, medium and long-term work plan that allows the permanence and ascent of the level of educational programs. The collaborative work carried out by the academic head and the administrative head allows a substantial integration of the strengths and weaknesses of the postgraduate program, which places them to work on specific lines of action to increase and strengthen the indicators.

In this section of "Ensuring educational quality in Postgraduate PNPC-UJAT" it is highlighted that the criteria of the tutoring system, information technology and communication in institutional competence, as well as the budget allocation are the substantial basis for executing and giving follow-up of the development of the postgraduate programs, derived from this, there are results such as academic collaboration agreements from the research stays of students and teachers, infrastructure and acquisition of material and computer equipment; acquisition of updated bibliographic material.

The foregoing consolidates and integrates the means of verification based on the criteria requested in the reference framework and Annex A, which are the evidence of all academic, research and administrative activities carried out in the postgraduate course and are evaluated by the PNPC Academic Peers Committee, without forgetting that everything is aligned with what is described in the Study Plan and Programs of each postgraduate program, combining educational quality in a transversal way.

Conclusion

Education is a human right recognized in the Mexican state, in attention to this the higher level, specifically the Postgraduate, represents a specialized training in a particular area or discipline. The public policy in Mexico focused on education with a link in science and technology is foreseen in the CONACYT through the PNPC in which, through a rigorous evaluation process by a Committee of Academic Peers, it considers the accreditation of the postgraduate degree in the PNPC.

The entry and permanence of a postgraduate program in the PNPC as is the case of the UJAT allows to offer an educational quality in the different Academic Divisions that, based on the Study Plan and Programs, align their content according to the needs of the local context, regional, national and international. One mechanism of action that contributes to the Study Plan is the mentoring system that strengthens its application according to the results obtained.

The assurance of the educational quality of the postgraduate courses has been strengthened by the institutional commitment by providing the necessary elements such as trained personnel, infrastructure, training and certification of research professors, productivity, mobility support. Although there are processes to strengthen, such as the budget, an institutional strategic planning with a perspective of linkage in the productive sector should be considered. Finally, the PNPC postgraduate programs at the

UJAT consolidate the assurance of the educational quality of the postgraduate programs with their permanence and promotion in the PNPC, also continuously restructuring its Curriculum, thus attending to the training of quality professionals and researchers with knowledge transversal, sustainable and comprehensive.

References

Alba, D., & Padilla, L. (2016). Uno de los desafíos de la educación superior; competencias ciudadanas para el postconflicto en Colombia, marco legal. *Revista Interamericana de Educación, Pedagogía y Estudios Culturales,* 9(2), 63–77. https://doi.org/10.15332/s1657-107X.2016.0002.04

Altamirano, M. (2010). "Science and technology: Mexico from a comparative perspective". In Mario Sánchez Silva (coord.) *Knowledge economy and globalization*. CIECAS-IPN, Mexico.

ANUIES. (2019). Statistical yearbook, school population in higher education. Graduate school year 2018-2019. ANUIES, Mexico.

Baca, AM Baca, A.M, Youon, I, Mayta, J. & Bancayan, C. (2014). Assurance of the limeity of the training university in the Peru. *Magazine electronics Interuniversity of Formacion of the Faculty, 17* (3), 35-47. DOI: http://dx.doi.org/10.6018/reifop.17.3.204151

Barba, JB (2018). The quality of education. The terms of your equation. *Mexican Journal of Educational Research, 23* (78), 963-979. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1405-66662018000300963&lng=es&tlng=es.

COMEPO. (2019). *Declaration of Villahermosa of the Mexican Council of Postgraduate Studies*, AC México. COMEPO, Mexico. http://www.comepo.org.mx/images/pdf/2019/DeclaracionVillahermosa.pdf

COMEPO. (2015). *Postgraduate Diagnosis in Mexico: National.* COMEPO-CIMAT-UNAM-IPCYT-IBERO, Mexico. http://www.comepo.org.mx/images/diagnostico/diagnostico-posgrado-mexico-region-nacional-comepo.pdf

CONACYT. (2020). *Scholarships and postgraduates*. CONACYT, Mexico. https://www.conacyt.gob.mx/index.php/becas-y-posgrados#:~:text= El%20Consejo%20Nacional%20de%20Ciencia,ofrezcan%20otras%20 instituciones%20nacionales%2C%20organismos

CONACYT. (2019a). *National Quality Postgraduate Program*. Infographic prepared by Benhumea Peña, Aldo. Direction of Postgraduate. PNPC, Mexico. http://svrtmp.main.conacyt.mx/ConsultasPNPC/images/infogra fia%20PNPC.jpg

CONACYT. (2019b). Framework. CONACYT-PNPC, Mexico. https://www.conacyt.gob.mx/index.php/el-conacyt/convocatorias-y-resultados-conacyt/convocatorias-pnpc/marcos-de-referencia-pnpc/19428-marco-de-referencia-para- the-renewal-and-follow-up-of-face-to-face-graduate-programs / file

CONACYT. (2019c). *Annex A: Research-oriented programs*. CONACYT-PNPC, Mexico. https://www.conacyt.gob.mx/index.php/sni/convocatorias-conacyt/convocatorias-pnpc/anexos-pnpc/19426-anex-a-orientacion-investigacion-1/file

CONACYT. (2019d). *Annex A: Programs with professional orientation*. CONACYT-PNPC, Mexico. https://www.conacyt.gob.mx/index.php/sni/convocatorias-conacyt/convocatorias-pnpc/anexos-pnpc/19427-anex-a-orientacion-profesional/file

CONACYT. (2011). *PNPC Glossary of Terms*. CONACYT-PNPC, Mexico. http://dsia.uv.mx/sipo/Material_apoyo/Glosario_Escolarizada.pdf

Diez of U., MA (2011). Coverage, quality and equity in graduate school, is there any change? *Politics and culture, no. 35,* 183-208. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S0188-77422011000100010&lng=es&tlng=es.

Hernández, G., Martínez, G. & Silva, F. (2020). Inter-monthly modality: academic boost for higher education. *Eticanet*, *20* (1), 88-105. DOI: http://dx.doi.org/10.30827/eticanet.v20i1.15523

Lezama, JA (2019). Assurance of educational quality in Mexico. Some fundamental considerations, *REDIPE NEWSLETTER 8* (6): 83-96.

Oliva, L. & González, MP & Martínez, V. (2005). The use of new technologies in a postgraduate program with a humanistic orientation. *Teaching and Research in Psychology, 10* (1), 143-159.

Parra, J., & Arias-Giraldo, S. (2016). Metodología para caracterización y análisis de impacto en el medio de egresados de Instituciones de Educación Superior. *Revista Interamericana de Educación, Pedagogía y Estudios Culturales, 9*(2), 79–96. https://doi.org/10.16925/co.v25i111.1875

Payán, C., Leal, D., & León, H. (2021). Percepción de estudiantes de pregrado y evaluación de pares del Consejo Nacional de Acreditación respecto a la calidad de los procesos académicos en una universidad pública. *Revista Interamericana de Investigación Educación y Pedagogía RIIEP, 14*(2), 31–60. https://doi.org/10.15332/25005421.6058

Pulido, S. & Espinoza, O. (2018). Quality assurance in higher education in Chile: Scope, implications and critical aspects. *Venezuelan Management Magazine*, 1, pp. s / n. https://www.redalyc.org/jatsRepo/290/29062781014/html/index.html

Prats, G., Álvarez, Y., Hernández, F., & Zamora, D. (2020). Environmental Taxes. Its Influence on Solid Waste in Mexico. *Journal of Environmental Management and Tourism, 11* (3), 755-762. doi: 10.14505 // jemt.v11.3 (43) .29

Quintana, YE (2018). Educational quality and school management: a dynamic relationship. *Education and Educators*, *21* (2), 259-281. doi: 10.5294 / edu.2018.21.2.5

Silva Hernandez, F. (2021). Scope and limits of the allocation of budget and financing in postgraduate courses of the PNPC-CONACYT. *Revista Perspectiva Empresarial*, 7(2), 65-73. https://doi.org/10.16967/23898186.656

UJAT. (2020). *Institutional Development Plan 2020-2024*. UJAT, Tabasco, México. http://www.archivos.ujat.mx/2020/planeacion/PDI%202020-2024-1.pdf

UJAT. (2019). *Fourth activity reports*. Dr. José Manuel Piña Gutiérrez. UJAT, Tabasco, México. http://www.archivos.ujat.mx/2020/rectoria/4to-Informe/CuartoInformedeActividades2019.pdf

UJAT. (2017). *Postgraduate tutoring regulations*. UJAT, Tabasco, México. http://www.archivos.ujat.mx/2015/abogado%20general/210817-REGLAMENTO-DE-TUTORIA-DE-POSGRADO.pdf

UNESCO. (2008). *The 10 dimensions of quality in education.* http://www.ibe.unesco.org/fileadmin/user_upload/COPs/Pages_documents/Resource_Packs/TTCD/sitemap/resources/1_1_2_P_SPA.pdf

