Published by :
https://www.ijert.org/
An International Peer-Reviewed Journal

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

Towards a Life and Career Plan: Assessing Researcher Maturity

Case Study: TecNM Campus Superior de Nuevo Casas Grandes

Mayra Pérez Aguirre
Department of Graduate Studies and Research
Instituto Tecnológico Superior de Nuevo Casas Grandes
Nuevo Casas Grandes, Chih., México

Daniel Gerardo Bencomo Trejo
Department of Graduate Studies and Research
Instituto Tecnológico Superior de Nuevo Casas Grandes Nuevo Casas Grandes, Chih., México

Martín Gonzalez Moncada
Department of Graduate Studies and Research
Instituto Tecnológico Superior de Nuevo Casas Grandes
Nuevo Casas Grandes, Chih., México

Abstract **- This research highlights the lack of an Institutional Life and Career Plan (ILCP) for research faculty, which hinders the alignment between staff interests and institutional objectives. Its purpose is to establish criteria for evaluating the maturity of researchers through their academic, professional, and personal production, facilitating the development of a life and career plan, as well as institutional decision-making. This study, which is non-experimental, cross-sectional, and descriptive, was conducted at the TecNM Superior Campus in Nuevo Casas Grandes during the year 2024. A pilot instrument was applied to faculty members whose curriculum covered the last three years. As a result, the "Evaluation Instrument for Faculty Promotion" was developed, which allowed for the identification of desirable production criteria. In conclusion, this research has promoted personalized life and career planning, improved evaluation processes for position competitions, and facilitated the detection of training needs, thus optimizing resource management and decision-making.**

Keywords - Life and Career Plan, research professor, Evaluation Instrument

I. INTRODUCTION

Higher Education Institutions (HEIs) play a fundamental role in a country's economic and sustainable development; they are responsible for training professionals capable of conducting research and proposing solutions to challenges within the educational, social, and productive sectors—particularly in the fields of science and technology [6].

The mission of the Tecnológico Nacional de México (TecNM) is to contribute to development through research, with a focus on the generation and transfer of knowledge, as well as on innovation and technological adaptation. This approach enables students and faculty to identify solutions to social, technical, and scientific problems, while simultaneously fostering the development of critical and practical skills. Furthermore, research promotes interdisciplinary collaboration and enhances institutional recognition, thereby driving both academic and social development.

In 2006, the TecNM Nuevo Casas Grandes campus established its research division, in compliance with TecNM's regulatory requirements. Since then, the institution has conducted various applied research, technological development, and innovation projects, assessing its relevance based on the needs of the surrounding environment and their alignment with the institution's own capabilities.

The strategic planning process enables leadership to formulate plans that align with the institution's strategic and operational objectives, encompassing personnel management as well as the coordination of training, professional advancement, and motivation programs. In this context, there is a clear need to develop faculty members through research activities, fostering not only their professional preparation but also the creation of a Life and Career Plan (LCP) that supports their growth within relevant professional settings.

The quality of information regarding human resources directly influences the decision-making process. Currently, the Nuevo Casas Grandes campus has 34 faculty members assigned to the Sub-directorate of Research and Graduate Studies, with workloads that vary based on their academic background and individual interests. However, the selection of faculty for research tasks is often driven by accreditation requirements and institutional goals, rather than by a competency profile linked to intellectual output.

At present, the campus lacks an Institutional Life and Career Plan (ILCP) for its staff, particularly within the research division. This absence hinders the alignment of human capital interests with institutional objectives, limiting the organization's ability to channel human potential toward the development of competencies and skills that resonate with individual career paths and personal motivations. Without appropriate evaluation criteria, the training provided to research staff may lack relevance.

Given this context, the present study seeks to answer the following question: What criteria can be used to assess a researcher's maturity for the purpose of developing a life and career plan that facilitates institutional decision-making? The importance of a life and career plan within an educational institution lies in the benefits it yields for all its members, although its implementation requires a shared commitment. Giacomán [5] highlights the design of essential components for such a plan for educators, analyzing how a well-structured plan

(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

can contribute to professional development and align this growth with institutional needs.

Furthermore, as noted by López [8] in his assessment of the need to update faculty evaluation tools, he shared the existing plan with professors to enrich it and identify their professional expectations. In doing so, he proposed a gradual evaluation model designed to recognize teaching performance and encourage training and professional development. Given this, the objective of the present research is to establish criteria for evaluating a researcher's maturity based on their academic, professional, and personal output. These criteria are intended to support the development of a life and career plan and inform institutional decision-making. It is essential to highlight that a life and career plan (LCP) serves as an institutional tool that facilitates the alignment of individual interests with organizational objectives [7]

Life and career planning establishes guidelines and goals for achieving a fulfilling life, focusing on enhancing human development and fostering the mutual growth of both the individual and the organization [1]. From a humanistic perspective, the aim is to encourage reflection on each person's values, interests, and skills. Organizations recognize career planning as an essential tool for addressing the expectations of their personnel [2].

Evidence suggests that organizations that encourage employees to plan their careers foster the setting of professional goals and the effort required to achieve them. A professional career reflects an individual's work trajectory, including the roles held and responsibilities assumed [5]. Moreover, Dessler [3] emphasizes the importance of identifying the competencies necessary to ensure operational continuity and recognizing potential talent for strategic roles, while evaluating performance against established objectives. Romo, Villalobos, and Guadalupe [6] citing Latapí (1981), state that the "process of training a researcher" entails improvements in academic education, methodological rigor, and the academic quality of projects, noting that success is achieved by effectively managing the intellectual capabilities of the personnel.

II. METODOLOGY

A non-experimental, cross-sectional, and descriptive study was conducted, utilizing a case study at the Tecnológico Nacional de México (TecNM), Nuevo Casas Grandes campus. This study was based on a review of institutional documents, including the "Guidelines establishing the requirements and conditions to be met by academic staff who teach study plans and programs at Decentralized Technological Institutes." Drawing from this review, an instrument titled "Evaluation Criteria for Faculty Promotion" was developed and used to measure and identify the academic output of each faculty member. It should be noted that data from each faculty member's PRODEP profile supported by the RIP system were also utilized. For the initial validation of the instrument, a non-probabilistic sampling method was employed, selecting 5 out of the 34 faculty members based on the following criteria: the selection included faculty with moderate to high levels of academic output, varying degrees of academic recognition, and established links to the productive sector, with their PRODEP-recorded curricula covering the preceding three-year period.

III. RESULTS

An instrument titled "Evaluation Criteria for Faculty Promotion" was developed and presented to both the Sub-directorate for Research and Postgraduate Studies and the Academic Directorate. Both offices approved the instrument for use in a pilot test to evaluate faculty members. The instrument consists of two sections. The first section (see Figure 1) is based on criteria derived from the "Guidelines establishing the requirements and conditions to be met by academic personnel who teach curricula and study programs at Decentralized Technological Institutes."

For this study, a structured evaluation instrument was designed to assess the maturity level of faculty researchers based on their academic, professional, and personal output. The instrument was developed through a documentary analysis of the aforementioned "Guidelines," as well as the evaluation criteria established by PRODEP, the SNII, and other academic recognition systems.

The instrument is organized according to the type of academic position (Course-based A, Course-based B, Associate A, Associate B, Associate C, Tenured A, and Tenured B), with separate evaluation matrices created for each level. Each matrix contains a set of indicators grouped into three dimensions:

A. Academic Backgpound

Includes the highest level of education attained, disciplinary specialization, and the alignment between one's academic background and their assigned area of work.

B. Academic Experince

Encompasses teaching, thesis supervision, participation in academic bodies, PRODEP (Program for Professional Development) status, scientific output, and involvement in research projects.

C. Professional development and engagement

Includes non-teaching professional experience, involvement in the productive sector, community service, academic administration, and contributions to social or institutional development.

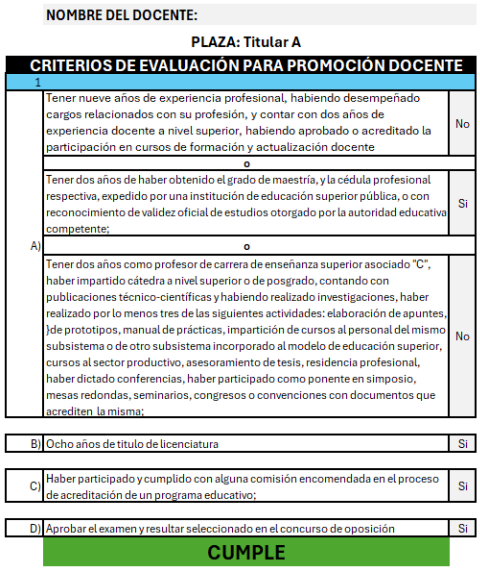
Each indicator is assessed using an ordinal compliance scale, based on documentary evidence recorded in the faculty member's institutional curriculum vitae. Each criterion is assigned a weighted value—determined by the level of the position being sought—which allows for the establishing of distinct academic maturity profiles. The final result is an aggregate score that indicates the degree of alignment between the faculty member's profile and the requirements of the position.

By way of illustration, Fig. 1 shows the evaluation of a faculty member applying for a "Titular A" (Tenured/Rank A) position.

(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

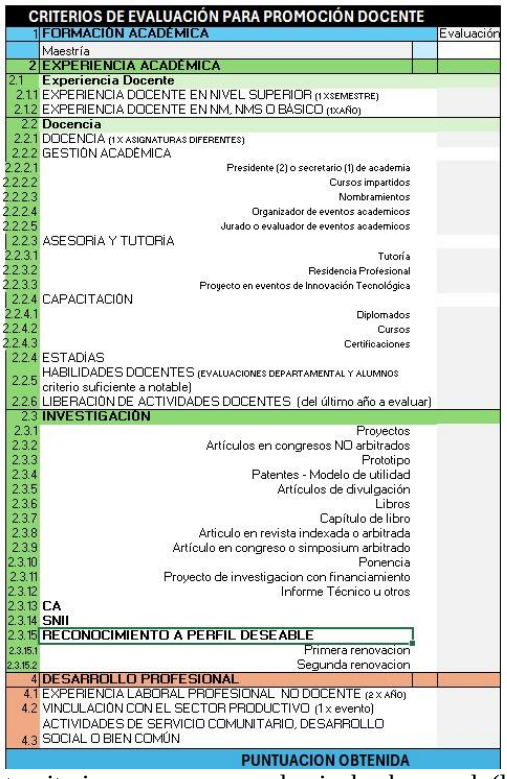
Fig. 1 First section of the instrument included in the Guidelines that establish the requirements and conditions to be met by academic personnel who deliver study plans and programs at Decentralized Technological Institutes. Source: Own work



NOMBRE DEL DOCENTE:		
PLAZA: Titular A		
CRITERIOS DE EVALUACIÓN PARA PROMOCIÓN DOCENTE		
1		
A)	Tener nueve años de experiencia profesional, habiendo desempeñado cargos relacionados con su profesión, y contar con dos años de experiencia docente a nivel superior, habiendo aprobado o acreditado la participación en cursos de formación y actualización docente	No
	o	
	Tener dos años de haber obtenido el grado de maestría, y la cédula profesional respectiva, expedido por una institución de educación superior pública, o con reconocimiento de validez oficial de estudios otorgado por la autoridad educativa competente;	Si
	o	
	Tener dos años como profesor de carrera de enseñanza superior asociado "C", haber impartido cátedra a nivel superior o de posgrado, contando con publicaciones técnico-científicas y habiendo realizado investigaciones, haber realizado por lo menos tres de las siguientes actividades: elaboración de apuntes, }de prototipos, manual de prácticas, impartición de cursos al personal del mismo subsistema o de otro subsistema incorporado al modelo de educación superior, cursos al sector productivo, asesoramiento de tesis, residencia profesional, haber dictado conferencias, haber participado como ponente en simposio, mesas redondas, seminarios, congresos o convenciones con documentos que acrediten la misma;	No
B)	Ocho años de titulo de licenciatura	Si
C)	Haber participado y cumplido con alguna comisión encomendada en el proceso de acreditación de un programa educativo;	Si
D)	Aprobar el examen y resultar seleccionado en el concurso de oposición	Si
	CUMPLE	

The second section (see Fig. 2) comprises a set of criteria determined primarily based on the requirements of PRODEP, CONAHCyT, SNII, and PEDD.

a) Fig. 2 Second section. Evaluation criteria for faculty promotion. Source: Own work



CRITERIOS DE EVALUACIÓN PARA PROMOCIÓN DOCENTE		
1	FORMACIÓN ACADÉMICA	Evaluación
	Maestría	
2	EXPERIENCIA ACADÉMICA	
2.1	**Experiencia Docente**	
2.1.1	EXPERIENCIA DOCENTE EN NIVEL SUPERIOR (1 X SEMESTRE)	
2.1.2	EXPERIENCIA DOCENTE EN NM, NMS O BÁSICO (1X AÑO)	
2.2	**Docencia**	
2.2.1	DOCENCIA (1 X ASIGNATURAS DIFERENTES)	
2.2.2	GESTIÓN ACADÉMICA	
2.2.2.1	Presidente (2) o secretario (1) de academia	
2.2.2.2	Cursos impartidos	
2.2.2.3	Nombramientos	
2.2.2.4	Organizador de eventos academicos	
2.2.2.5	Jurado o evaluador de eventos academicos	
2.2.3	ASESORÍA Y TUTORÍA	
2.2.3.1	Tutoría	
2.2.3.2	Residencia Profesional	
2.2.3.3	Proyecto en eventos de Innovación Tecnológica	
2.2.4	CAPACITACIÓN	
2.2.4.1	Diplomados	
2.2.4.2	Cursos	
2.2.4.3	Certificaciones	
2.2.4	ESTADÍAS	
2.2.5	HABILIDADES DOCENTES (EVALUACIONES DEPARTAMENTAL Y ALUMNOS criterio suficiente a notable)	
2.2.6	LIBERACIÓN DE ACTIVIDADES DOCENTES (del último año a evaluar)	
2.3	**INVESTIGACIÓN**	
2.3.1	Proyectos	
2.3.2	Artículos en congresos NO arbitrados	
2.3.3	Prototipo	
2.3.4	Patentes - Modelo de utilidad	
2.3.5	Artículos de divulgación	
2.3.6	Libros	
2.3.7	Capítulo de libro	
2.3.8	Articulo en revista indexada o arbitrada	
2.3.9	Artículo en congreso o simposium arbitrado	
2.3.10	Ponencia	
2.3.11	Proyecto de investigacion con financiamiento	
2.3.12	Informe Técnico u otros	
2.3.13	CA	
2.3.14	SNII	
2.3.15	RECONOCIMIENTO A PERFIL DESEABLE	
2.3.15.1	Primera renovacion	
2.3.15.2	Segunda renovacion	
4	DESARROLLO PROFESIONAL	
4.1	EXPERIENCIA LABORAL PROFESIONAL NO DOCENTE (2 X AÑO)	
4.2	VINCULACIÓN CON EL SECTOR PRODUCTIVO (1 x evento)	
4.3	ACTIVIDADES DE SERVICIO COMUNITARIO, DESARROLLO SOCIAL O BIEN COMÚN	
	PUNTUACION OBTENIDA	

The first criterion concerns academic background (level of education). The second criterion considers academic experience (teaching, research, membership in an academic body, and attainment of a recognized "desirable profile"). The third criterion encompasses professional development (non-teaching work experience, engagement with the productive sector, and participation in community service and social development or common-good initiatives). These criteria are evaluated using a weighted scoring system.

This instrument was adapted to establish the output requirements for the various positions currently available at the Institute:

- Asignatura A
- Asignatura B
- Asociado A
- Asociado B
- Asociado C, and
- Titular A.

Additionally, output criteria were evaluated for the Titular B position—even though it is not currently active at the Institute—which made it possible to define the performance expectations required for that role.

II. VALIDATION OF THE INSTRUMENT

A pilot test was conducted using purposive non-probability sampling with five faculty members from the research field, whose curricula vitae covered the preceding three-year period. Validation was carried out through:

- Expert review by institutional authorities (the Sub-directorate for Research and the Academic Directorate),
- Verification of alignment with institutional regulations,
- Analysis of applicability in actual promotion cases.

The purpose of this validation was to assess the clarity, relevance, and operational feasibility of the instrument, as well as its capacity to distinguish between different levels of research maturity. The results enabled adjustments to the weighing of the criteria and the organization of the indicators.

III. DISCUSSION

The results indicate that the absence of an Institutional Life and Career Plan (ILCP) limits the systematic development of faculty researchers and hinders the alignment between individual interests and the institution's strategic objectives. This finding aligns with the observations of Giacomán [5], who highlights that life and career planning is a key element for aligning professional growth with an institution's mission.

The instrument developed in this study operationalizes the concept of "researcher maturity" based on observable criteria related to academic, professional, and personal output. In this regard, the findings are consistent with the work of Chiavenato [2] and Dessler [3], who emphasize that the identification and assessment of competencies are essential for the strategic management of human talent. Unlike other evaluation models that focus exclusively on quantitative productivity indicators, the proposed instrument incorporates developmental and professional growth dimensions—a significant contribution within the context of public higher education institutions.

Furthermore, the defined criteria align with the guidelines of national programs such as PRODEP and SNII, which reinforces the instrument's institutional validity and its potential to support faculty promotion processes and decision-making. Compared to previous studies—such as that of Romo González, Villalobos Alonzo, and Guadalupe Arias [6] this

(This work is licensed under a Creative Commons Attribution 4.0 International License.)

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 15 Issue 11 , November - 2026

work offers an applied approach that translates knowledge management into a concrete tool for evaluation and planning.
Nevertheless, the study has limitations, including the small sample size used in the pilot test and the lack of statistical analyses regarding the instrument's reliability and validity. These limitations suggest opportunities for future research focused on the psychometric validation of the instrument and its application across other campuses of the *Tecnológico Nacional de México*, with the aim of strengthening its generalizability.

IV. CONCLUSION

The absence of an Institutional Life and Career Plan (ILCP) at the TecNM Campus Superior de Nuevo Casas Grandes highlights various challenges at both the institutional and individual levels. These include a lack of professional guidance, loss of motivation, stagnation in the academic development of faculty researchers, and an imbalance between personal and professional life, which can negatively affect their well-being and performance. Such conditions limit the institution's ability to strategically leverage the potential of its human capital.
This research has successfully met its objective of establishing clear and relevant criteria for assessing the maturity of faculty researchers based on their academic, professional, and personal achievements. These criteria were incorporated into an evaluation instrument designed to identify a researcher's level of development and their alignment with institutional requirements, thereby facilitating a more objective and transparent management of promotion processes and position assignments.
The proposed instrument serves as a useful tool for fostering personalized life and career planning, while simultaneously strengthening institutional decision-making. Its application enables the timely identification of training needs, the targeted provision of academic support, and the optimization of available resources, all of which contribute to the strategic management of human talent within the research sector.
Finally, the self-assessment approach integrated into the instrument encourages faculty members to critically reflect on their professional trajectory and evolution within the institution. This not only promotes continuous professional development but also helps build an institutional culture centered on ongoing improvement, shared responsibility, and the enhancement of academic quality.

REFERENCES

V. REFERENCES

[1] A. D. &. S. A. A. Casares, Planeación de vida y carrera (2.ª ed.), CDMX: Limusa, 2011.
[2] I. Chiavenato, Administración de recursos humanos: El capital humano de las organizaciones (8.ª ed.), McGraw-Hill, 2007.
[3] G. (. l. Dessler, Administración de personal, Pearson Educación, 2001.
[4] Direccion General de Institutos Descentralizados, "dgest," 2026. [Online]. Available: http://www.dgest.gob.mx/images/areas/itd_juntas01/Academica/Lineamientos_de_Condiciones_Acadmicas_Version_1.0.pdf.
[5] A. L. Giacomán, "El plan de vida y carrera: Elemento fundamental en el logro de la misión institucional.," cdmx, 2005.
[6] G. A. Romo, A. M. Villalobos and A. L. E. Guadalupe, 2012 https://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-109X2012000100007. [Online].
[7] R. Varela and G. Dessler, "Administración de recursos humanos (5.ª ed.).," Pearson Educación. https://www.pearson.com .
[8] C. L. López, "Evaluación del desempeño docente vinculado a un plan de vida y carrera para el personal académico del Instituto Cultural Morelos [Tesis de maestría].," Morelos, 2004.

(This work is licensed under a Creative Commons Attribution 4.0 International License.)