THE INVESTIGATIVE COMPETENCES IN TEACHERS OF PRIVATE UNIVERSITIES IN PANAMA

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DOI: 10.37594/oratores.n16.687

Reception date: 21/02/2022 Revision date: 15/03/2022 Acceptance date: 22/03/2022

ABSTRACT

The objective of this research is to analyze the research competencies of teachers at private universities in Panama. For this purpose, a theoretical study was conducted on the concept of research competencies, which served as a guiding framework for the collection of information. The research was descriptive, non-experimental, with a field and cross-sectional design. A questionnaire-type instrument was applied to a convenience sample of teachers. The information was analyzed through descriptive statistics, obtaining the following results: in relation to the competencies of know-how, the teachers have high and good levels in the search for information and show skills in the methodological mastery of the research process, but there is difficulty with the execution of qualitative methodological designs. In the competencies of knowing how to transfer, a mastery of oral and written communication of results is observed. The results of the competencies of knowing how to be indicate that teachers value the ethical principles of scientific research and assume the commitment to carry out and publish original unpublished research and intellectual products in a timely manner. The competencies of knowing how to live together have not been developed by teachers, specifically in Researcher Training. They do not participate as referees in scientific journals, they do not advise on graduate work, and the percentage of those who participate as jury members is low. Nor have they developed competencies related to teamwork. As conclusions, teachers in private universities in Panama should develop competencies related to teamwork.

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Keywords: Competences, Investigative Competences, Higher Teaching, Private Universities, Panama.

INTRODUCTION

The relationship of teaching with research, according to Oropeza et al (2014), has been verified throughout the history and development of education. Today, the quality of educational institutions is evaluated, nationally and internationally, on the basis of various criteria; one of the most important is related to the research activity of teachers, the execution of projects, research products, among other indicators. For teachers, research has become a way of teaching, even more, it is the central axis of academic work, since it generates a link with the advancement of scientific knowledge and the culture of humanity, so teaching and research are closely related.

According to Nevache (2019),

> The promotion of research should begin within the universities where it should be part of the commitment of the study centers and the obligations of the faculty, which should be evaluated based on their publications, teaching quality and capacity for innovation. The low production in scientific research in Panama has caused several problems in private universities, since it is in this factor -that of research- where the most difficulties have arisen at the time of being evaluated in the accreditation processes. Apparently, there are not enough incentives for teachers to do research, but more than that, they do not have sufficient competencies in the area of research, which generates a rejection of these activities and a low productivity in terms of publications of quality scientific articles and other activities associated with research, such as attendance to congresses, advising graduate and postgraduate theses, etc. (p.2).

According to the Global Competitiveness Index, cited in Nevache (2019), Panama is rated with a minimum grade in the quality of its research institutions. The number of researchers (0.28 per 1,000 workers) is much lower than the Latin American average, which is almost four times higher. Even when compared to countries of similar size such as Costa Rica or Uruguay, our number of researchers is about a quarter of theirs. Moreover, a significant number of these researchers are not Panamanian, which confirms the need for massive training highlighted above.

Accreditation and evaluation processes are relatively recent in Panama; public universities have been improving their quality for more than 10 years, as have private universities. The latter, for the last five years, have been undergoing university accreditation processes, facing the factor

of scientific research as one of the fundamental problems to overcome in order to achieve optimal levels in the quality of the service they provide. International institutions, such as UNESCO (2008), have endorsed the need to promote better teacher training based on competencies, improvement and preservation of the quality of teaching and services, among others.

In recent years, teachers, with the implementation of processes related to research in higher education -such as the development of projects, obtaining information through electronic searches, discussion of problems, and others-, have somehow internalized the value of research for their own professional training. However, this progress still suffers from many shortcomings and difficulties, especially because practicing university teachers, whose professional training base is not pedagogical -unless they are graduates in careers related to educational sciences-, do not have, in most cases, an intentional projection towards their research training, do not know the methods and, in general, lack the methodological expertise to act, as researchers, in and from their own teaching practice.

Based on this context, the objective of this research is to analyze the research competencies of the teachers of the Private Universities of Panama during the year 2019. In order to achieve this objective, a quantitative, descriptive, non-experimental research with a field and cross-sectional design was carried out. To obtain the data, a questionnaire-type instrument was developed and applied to a sample selected by convenience from the population that was the object of this study, the teachers of the private universities of Panama. The information obtained was presented through descriptive statistics, which made it possible to respond to the research objective.

COMPETENCE AND RESEARCH COMPETENCIES

According to Angarita (2000), the concept of competence *"deals with specialized knowledge or knowledge of a specific nature; it is knowledge implicit in practice or of a non-declarative nature; it derives only partially from a learning process, even when it requires social and cultural experience"* (p. 29).

On the other hand, Pérez (2012) states that competence, besides being a know-how, is a know-how by doing, supported by multiple experiences and knowledge that are acquired in the course of life; it is the flexible and intelligent use of the knowledge we have, which makes us competent to face these specific tasks. Competence cannot be understood as an intellectual or mental capacity; it requires action in a context and being at an attitudinal and behavioral level.

Analyzing the two definitions above, competence can be defined as the ability to integrate what one does with what one knows and is; to be competent is to know how to do and to know how to act from what one is as a human being, with conviction of what one does and assuming, in an ethical and committed manner, the implications of one's actions in accordance with a given context.

Competencies can be considered as the result of three factors, as explained by Le Boterf (1998): knowing how to proceed, which implies knowing how to combine and mobilize relevant resources (knowledge, know-how, networks); wanting to proceed, which refers to the motivation and personal involvement of the individual; and being able to proceed, which refers to the existence of a context, a work organization, and social conditions that provide the possibility and legitimacy for the individual to take responsibility and risk.

Several authors have referred to research competencies in teacher education, namely: Homero (2004), Pla (2002, 2004), Riezu and Romero (2008), Vargas (2010) and Jaik and Barraza (2011, 2013), cited by Oropeza et al (2014); however, in all of them an epistemological gap is explicit, since they do not establish, in the proposed conceptual apparatus, how to approach them, as well as the context of training for practicing higher education teachers. On the other hand, the theoretical conceptions of these authors point towards the training of research skills and competence from initial training, in other situations and with a systematic and medium or long term character, which do not respond to the urgent needs of teachers currently working in higher education.

Research competence has been approached and defined by several authors: Castellanos (2003) defines it as that which allows the education professional to build scientific knowledge about the pedagogical process in general and the teaching-learning process in particular, with the purpose of solving problems in the context of the school educational community. This definition emphasizes the construction of scientific knowledge in the pedagogical process and the solution of educational problems; that is, it focuses on the area of teaching.

Another definition of research competence is proposed by Pla (2004), who conceptualizes it as the psychological configuration of the teacher's personality and the construct that designates his or her suitability to improve the process of educating students through research activity.

This definition assumes research competence as part of the teacher's personality in the psychological area. However, neither of the two concepts proposed above integrates other areas of the development of competence in teachers, so Oropeza et al (2014) proposes a new concept of research competence taking into account the conditions where practicing teachers are trained and developed, and defines it as the mastery of higher education based on specific purposes, content (understood as knowledge, skills and values), the method of participatory research project and the use of means and resources that facilitate the actions to perform, effectively, the research activity in their professional performance.

Jaik (2017) also defines research competence as the set of knowledge, attitudes, skills and abilities necessary to carry out the elaboration of a research work. This competence is relevant, if one considers the importance of generating and understanding the processes of scientific research, from the formulation of the project to the publication of the results in specialized journals.

Adapting the aforementioned concepts, this research will use the concept of research competence as the teacher's mastery of skills, knowledge and values related to knowing how to do research, knowing how to be a researcher and knowing how to transfer the knowledge obtained from research.

That is to say, the investigative competence is related to the following basic knowledge that integrate it: knowing how to do, as the implementation of skills based on knowledge; knowing how to transfer, as the possibility of transcending the immediate context, to act and adapt to new situations or transform them; and knowing how to be and live together, as the most complex part due to its implications of an attitudinal and even valuational nature.

RESEARCH COMPETENCIES RELATED TO KNOW-HOW

Know-how is assumed as the implementation of skills based on knowledge. Pérez (2012) states that the research competences of know-how are related to a set of capacities and skills, among which the following stand out: the capacity to apply epistemological theories in research; the ability to apply the scientific method; the capacity to apply the quantitative and qualitative method; the ability to use the lines of research with a propositional attitude; the ability to select the type of research, methods and techniques; the ability to delimit the research topic; the ability to formulate the research problem; the skill in the elaboration of the state of the art in research; the ability to formulate the research objectives; the ability to formulate the research justification; the

ability to formulate and test research hypotheses; the capacity to elaborate reference frameworks; the ability to carry out bibliographic searches and updating; the ability to elaborate the theoretical framework that supports the research; the ability to operationalize variables; the ability to apply the methodological design in the research; the capacity to apply data collection techniques and instruments; the capacity to identify the unit of analysis.

It also adds the ability to apply statistical tools; the ability to draw conclusions and recommendations; the ability to apply knowledge; the ability to organize and plan research; the ability to summarize and synthesize; the ability to create mental images and concept maps; the ability to analyze a research report; the ability to read and write clearly and effectively; the ability to write a monograph, an essay, a scientific paper; and, finally, the ability to analyze, compare and synthesize.

RESEARCH COMPETENCIES RELATED TO TRANSFER KNOWLEDGE

Knowing how to transfer is conceived as the possibility of transcending the immediate context to act and adapt to new situations or transform them, in addition to transmitting knowledge for the benefit of society.

According to Pérez (2012), these competencies include the following: skills for the elaboration and writing of texts; ability to write a summary, progress report or final report; ability to speak in a clear, argued and convincing manner; ability to handle the computer and digital resources; ability to search for and analyze information; ability to solve problems and find practical solutions; ability to make sound, well-reasoned and socially responsible decisions; ability to mobilize and obtain resources; management of information and communication technologies.

In addition to the above, the following stand out: ability to design and develop projects jointly; ability to coordinate and participate in meetings of researchers; ability to work in groups; ability to deal with changing and complex contexts; ability to select publications; ability to apply knowledge with scientific rigor; ability to omit writing errors: ability to hierarchize, integrate and remember data; ability to give meaning to information with semantic or syntactic resources; ability to ask questions and use reference material; application of information assimilation and retention strategies; ability to manage their own learning; skill in critical, creative and innovative thinking; ability to observe, record and elaborate field notes; ability to transfer knowledge through presentations, papers and scientific articles.

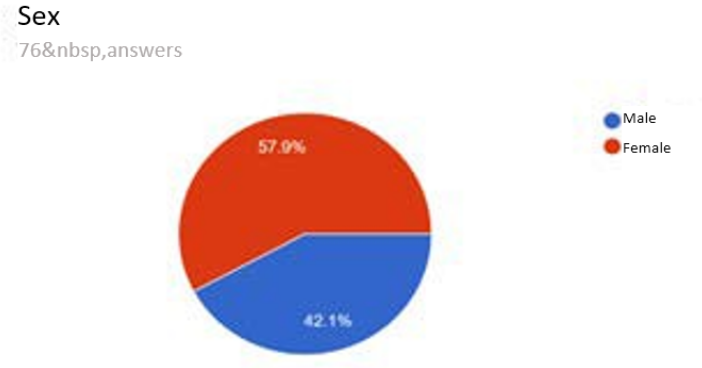
INVESTIGATIVE COMPETENCES RELATED TO KNOWING HOW TO BE AND LIVING TOGETHER

Knowing how to be is considered the most complex part, due to its attitudinal implications. The competencies of knowing how to be would be the following, citing Perez (2012): ability to develop research; positive disposition, taste and interest in research; ability to perceive research as a life project; ability to express ideas, feelings and emotions; ability to criticize and self-criticize; interpersonal ability of cooperation and solidarity; ability to communicate assertively; ability to request reformulations and clarifications; ability to respect ethical-moral norms; ability to work in interdisciplinary teams; ability to respect diversity and multiculturalism; ability to exercise leadership; ability to work in a responsible and committed manner; ability to strengthen autonomy and self-confidence; ability to contribute their talent and develop their potential; ability to adapt to change; ability to generate relationships of trust and mutual respect; ability to work with quality, effort and commitment; to be aware of the ethical dimension of their actions; emotional maturity to understand themselves and others; sensitivity and critical and creative thinking; ability to establish priorities, schedule time, have resources at their disposal.

In addition to the above, there is the ability to coexist, understood as the talent to interrelate with others in a timely and cooperative manner. Thus, we have the following: ability to avoid interpersonal conflicts; to cooperate and motivate others; ability to negotiate and conciliate; ability to be tolerant and learn to coexist; ability to communicate assertively, to work as a team and resolve conflicts, to put oneself in the other's place, to understand their emotions, positions and feelings (Pérez, 2012).

RESEARCH RESULTS

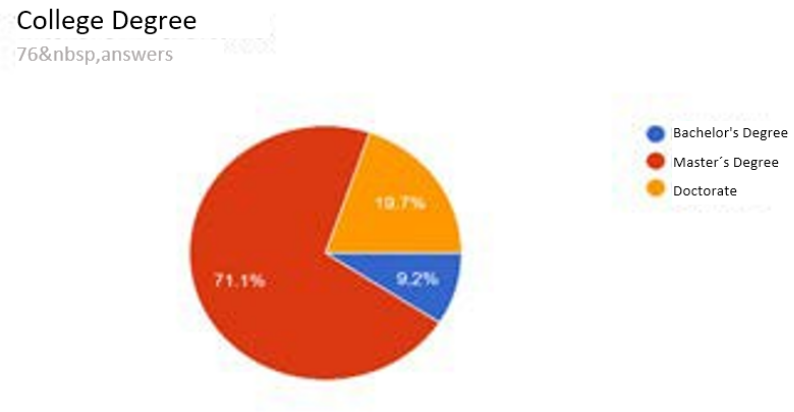
General Data: Graph No. 1



Source: Rincon and Mujica (2019)

Out of 76 teachers who responded, 57.9% were female and 42.1% were male.

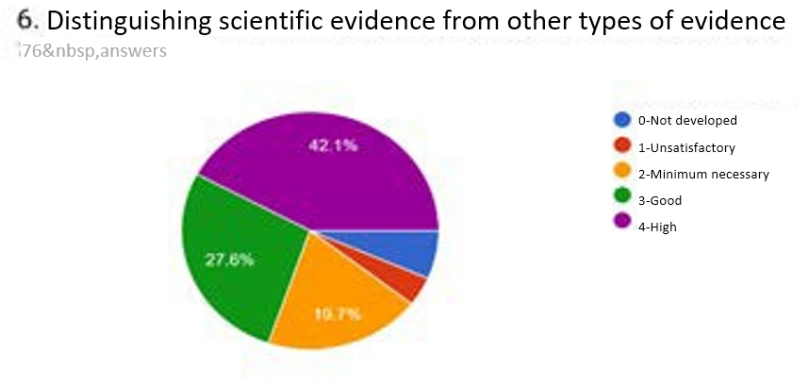
Graph No. 2



Source: Rincón y Mujica (2019)

Out of 76 teachers who responded, 9.2% have a Bachelor's degree, 71.1% have a Master's degree and 19.7% have a Doctorate.

A. In relation to the First Dimension: Research Competences related to know-how:
Sub-Dimension. Search for information:
Graph No. 3

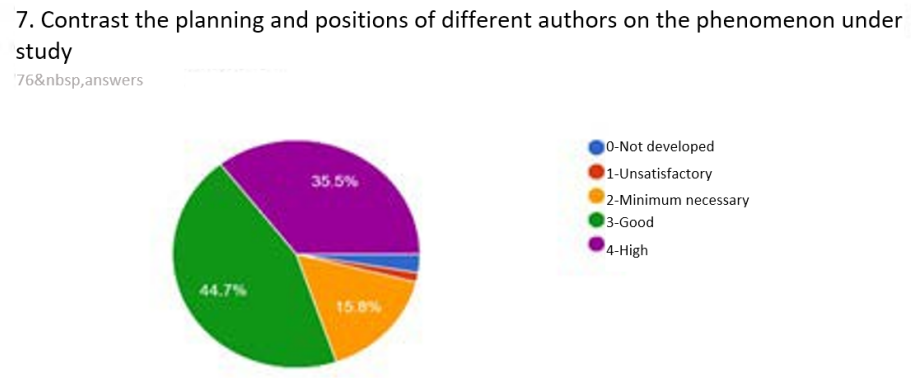


Source: Rincón y Mujica (2019)

It can be seen in Graph No. 3 that 42.1% of teachers claim to have highly developed the ability to distinguish scientific evidence from other types of evidence, 27.6% are in the good range

and 19.7% the minimum necessary.

Graph No. 4



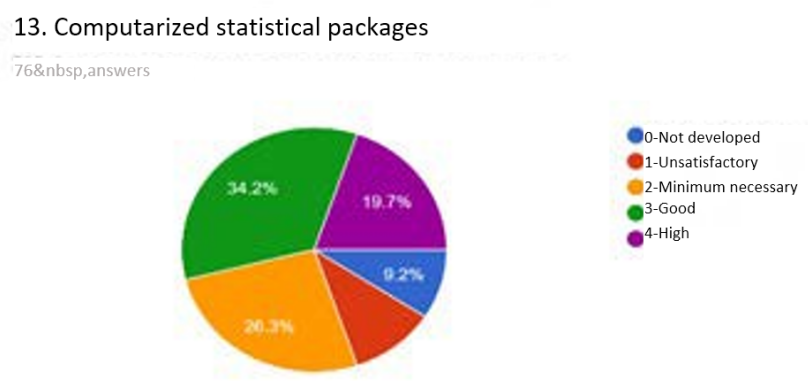
Source: Rincón y Mujica (2019)

Graph No. 4 shows that 44.7% of the teachers affirm that they have a well-developed ability to contrast approaches and positions of different authors about the phenomenon under study, 35.5% affirm that they have it highly developed and 15.8%, only the minimum necessary.

From these results, it is observed that the teachers surveyed have well developed competencies related to the search for information.

Sub-dimension. Technological Domain:

Graph No. 5

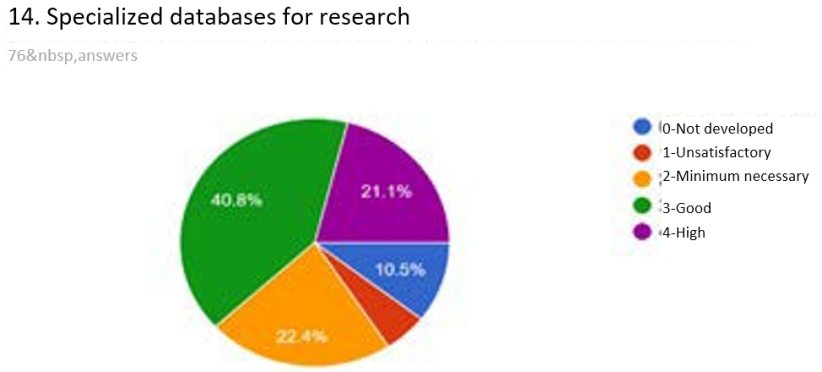


Source: Rincón y Mujica (2019)

In relation to the management of computerized statistical packages, the reading of Graph No. 5 shows that only 19.7% of the teachers affirm that the development of competencies in the

management of computerized statistical packages is high, 34.2% affirm that this development is good, while 46.1% of the teachers are included in the categories minimum necessary 26.3%, unsatisfactory 10.6% and 9.2% not developed.

Graph No. 6



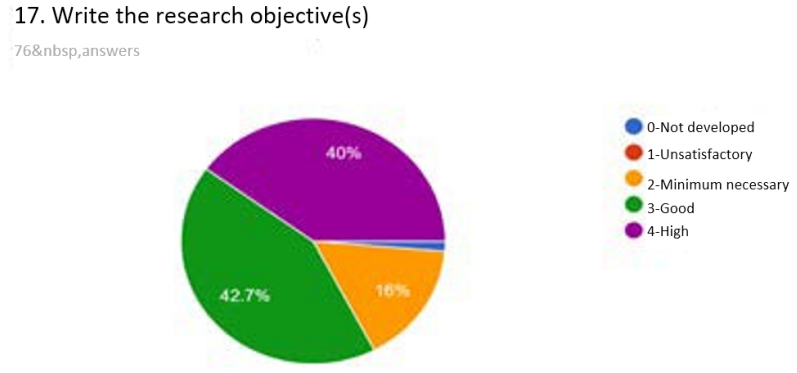
Source: Rincón y Mujica (2019)

In relation to specialized databases for research, as shown in Graph No. 6, 21.1% of the teachers state that the development of this competency is high, while for 40.8% it is good and the remaining 38.1% are distributed in the categories minimum necessary with 22.4%, unsatisfactory 5.2% and not developed with 10.5%.

These results allow inferring that, in relation to the technological mastery competency, even the teachers at private universities in Panama have not developed it optimally.

Sub-dimension: Methodological Domain:

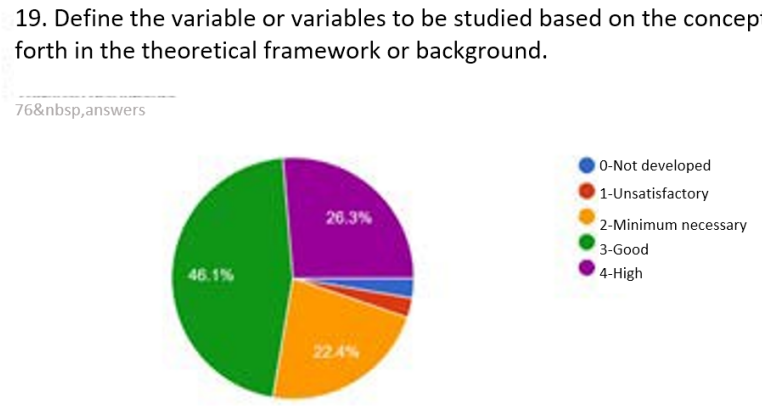
Graph No. 7



Source: Rincón y Mujica (2019)

Graph No. 7 shows that teachers have developed competence in the writing of objectives between high and good with 82.7% for these two categories; only 16% answered that they have the minimum necessary.

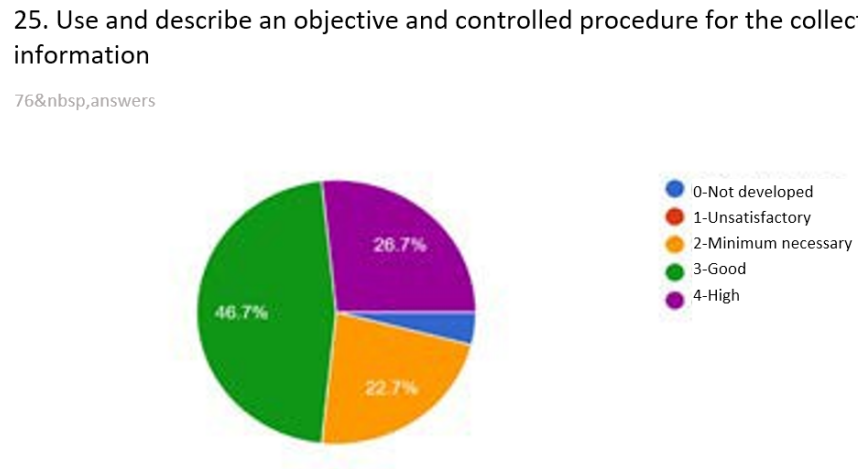
Graph No. 8



Source: Rincón y Mujica (2019)

Graph No. 8 shows how 72.4% of the teachers can define the variable or variables to be studied in a high range, 26.3%, and good, 46.1%; only 22.4% claim to have the minimum necessary for the development of this competence, while 5.2% of the answers are in the unsatisfactory and undeveloped ranges.

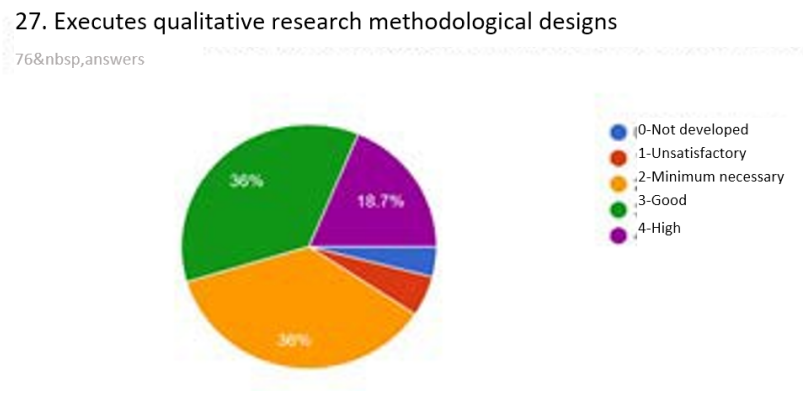
Graph No. 9



Source: Rincón y Mujica (2019)

The responses obtained in Graph No. 9 indicate that 73.4 of the teachers are located in the categories of high, with 26.7%, and good, with 46.7%; that is, they can use and describe a controlled procedure for information collection, while only 22.7% are located in the minimum necessary and 3.9% as unsatisfactory and undeveloped.

Graph No. 10



Source: Rincón y Mujica (2019)

In relation to the use of qualitative methodological designs by teachers, the responses in Graph No. 10 were mostly in the categories high, 18.7%, and good, with 36%, for a total of 54.7% who use these designs; on the other hand, 36% of teachers only handle the minimum necessary, and 9.3% are located as unsatisfactory and undeveloped, for a total of 45.3% of teachers who do not use qualitative research designs.

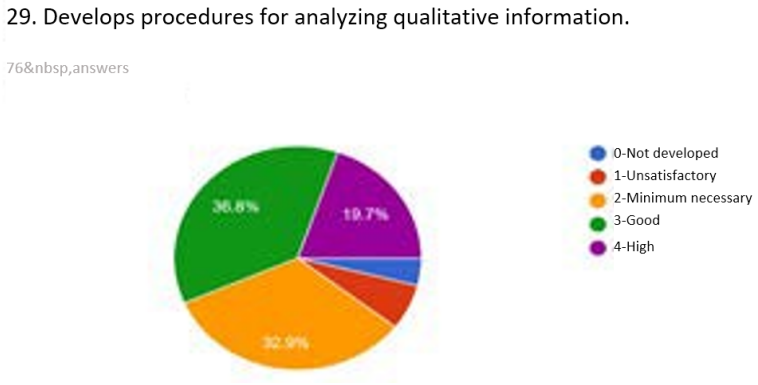
Graph No. 11

Source: Rincón y Mujica (2019)

In relation to Graph No. 11, which shows the results on the adequate implementation of

qualitative research techniques by teachers, the responses were in the good category, with 37.3%, and in the high category, with 20%, for a total of 57.3% in these two categories, while 34.7% were in the minimum necessary and 8% in the unsatisfactory and undeveloped categories.

Graph No. 12



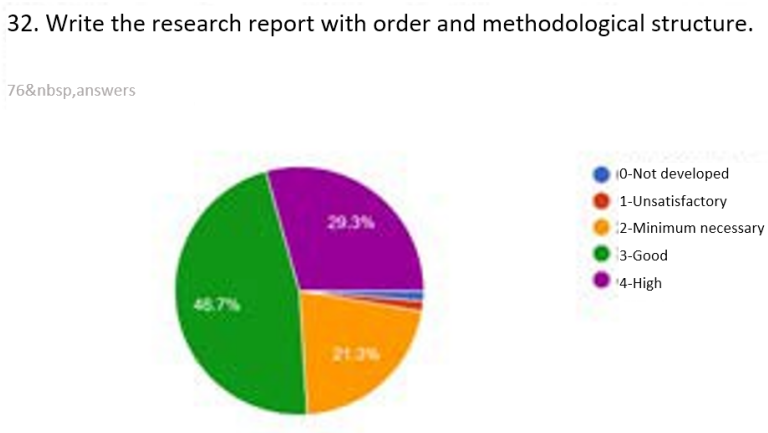
Source: Rincón y Mujica (2019)

This graph shows how the teacher is located in the good category, with 36.8%, and high, with 19.7%; thus, 56.5% affirm that they develop the procedures of analysis of qualitative information and 32.9% are located in the minimum necessary, and 10.6% are not developed and unsatisfactory, which indicates that 43.5% of the teachers do not develop these procedures.

B. In relation to the Second Dimension: Research Competences related to transfer knowledge:

Sub-Dimension: Mastery of communication of results (Oral and Written):

Graph No. 13



Source: Rincón y Mujica (2019)

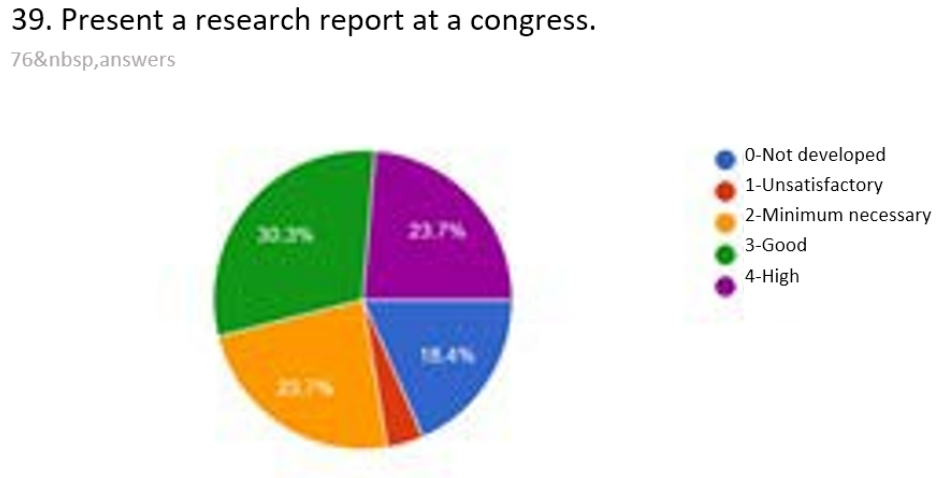
In Graph No. 13, which shows the opinion of the teachers with respect to their competencies to carry out the research report with order and methodological structure, shows that the good category obtained 46.7%, while 29.3% of the teachers were in the high category, which represents 76% of the responses; 21.3% of the teachers were in the minimum necessary category, and only 2.7% were in the unsatisfactory and undeveloped categories.

Graph No. 14

Source: Rincón y Mujica (2019)

Graph No. 14 shows that 40.3% of the teachers claim to have a category of good in the development of writing a research article for publication, while in the high category there is 22.1%, which represents 62.4% of teachers in these two categories; 23.4% claim to have the minimum necessary, 11.7% undeveloped and only 2.5% unsatisfactory.

Graph No. 15



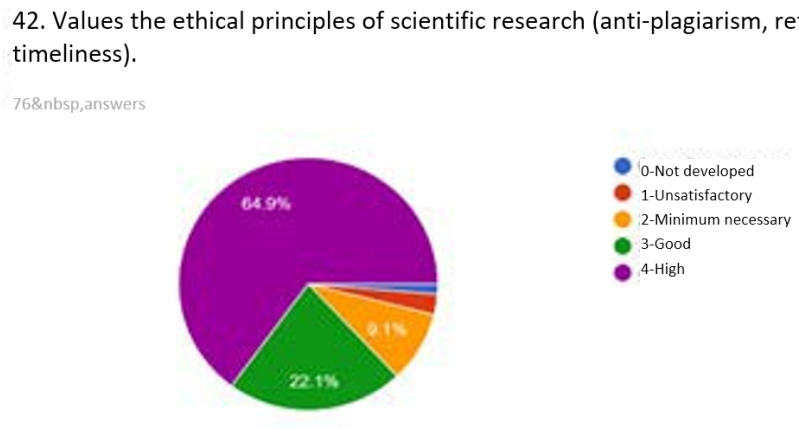
Source: Rincón y Mujica (2019)

Graph No. 15 indicates that 30.3% of the teachers have good level competencies to present a research report at a congress and 23.7% have high level competencies, for a total of 54% in these two categories, while 23.7% have the minimum necessary, 18.4% are not developed and 3.9% are unsatisfactory, for a total of 46% in these last three categories.

C. In relation to the third Dimension: Investigative Competences related to the knowledge of being.

Sub-Dimension: Mastery of ethical values

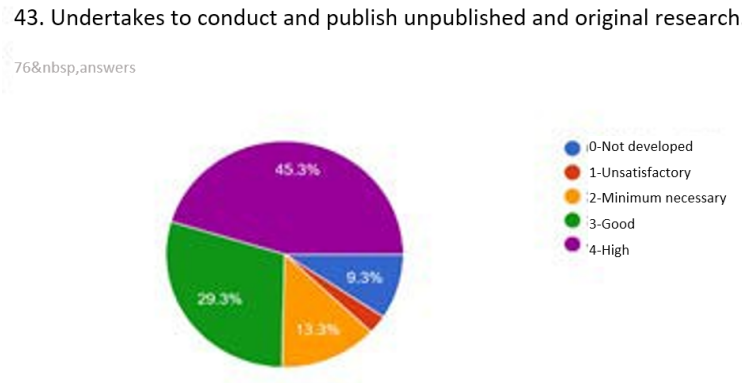
Graph No. 16



Source: Rincón y Mujica (2019)

Graph No. 16 shows that 64.9% of the teachers are in the high category and 22.1% in the good category; that is, 87% value the ethical principles of scientific research, 9.1% are in the minimum necessary category and only 3.9% are in the unsatisfactory and undeveloped categories.

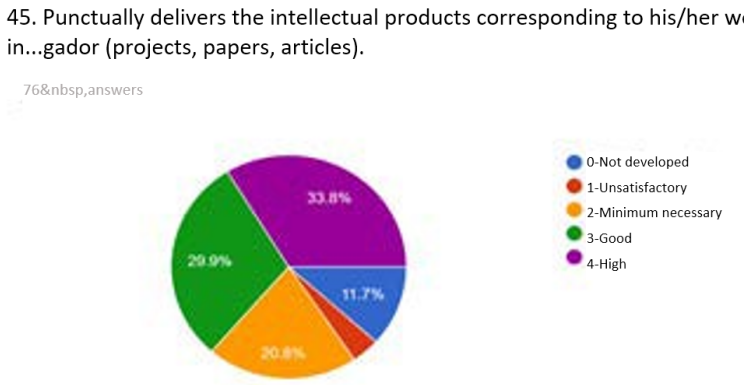
Graph No. 17



Source: Rincón y Mujica (2019)

Graph No. 17 shows that 45.3% of the teachers are in the high category for the item of assuming the commitment to carry out and publish unpublished and original research, while 29.3% are in the good category; that is, 74.6% of the teachers are between these two categories, while 13.3% are in the minimum necessary, 9.3% in undeveloped and 2.8% unsatisfactory.

Graph No. 18



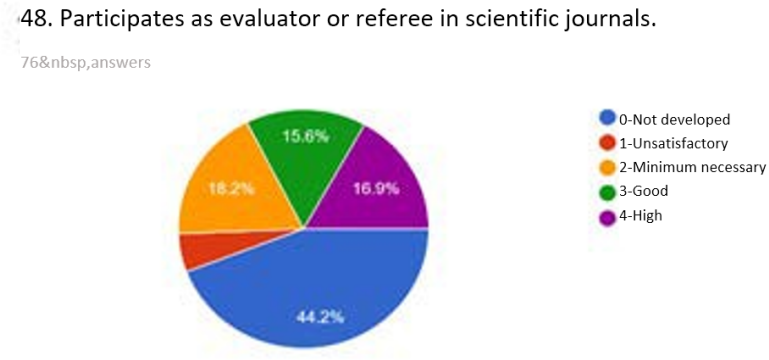
Source: Rincón y Mujica (2019)

Graph No. 18 shows that 33.8% of the teachers consider that their competence is high in the delivery of projects, papers and articles, corresponding to their work as researchers, while 29.9% answered that it is good, for a total of 63.7%. On the other hand, 20.8% only have the minimum necessary, 11.7% have not developed this competence and only 3.8% are unsatisfactory.

D. In relation to the fourth Dimension: Research Competences related to knowing how to live together:

Sub-Dimension: Formation of Researchers:

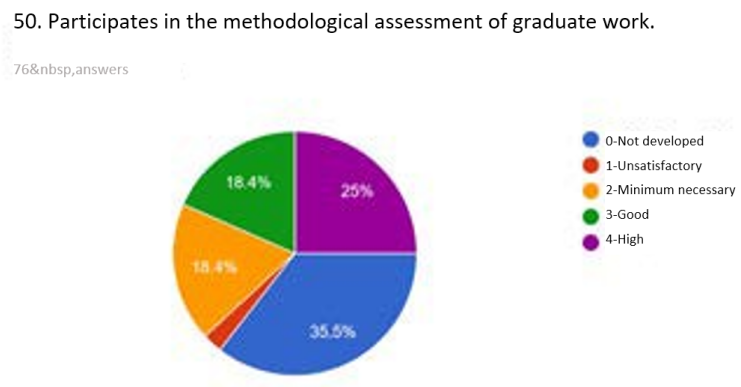
Graph No. 19



Source: Rincón y Mujica (2019)

In Graph No. 19, which shows the development of the competency in which the teacher participates as evaluator or referee in scientific journals, 44.2% state that they have not developed this competency, while 18.2% have the minimum necessary and 5.1% are unsatisfactory; that is, 67.5% of the teachers do not participate in activities of this kind. 16.9% have highly developed this competency and 15.6% well developed, for a total of 32.5% between the two.

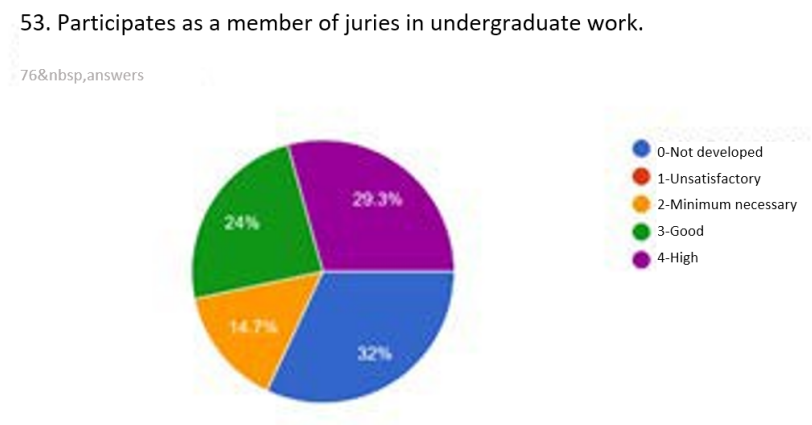
Graph No. 20



Source: Rincón y Mujica (2019)

In Graph No. 20, which shows the development of the teacher's competence as a methodological advisor for graduate work, shows that 35.5% have not developed this competence, while 18.4% have the minimum necessary and 2.7% are unsatisfactory; that is, 56.6% of these teachers do not participate as a methodological advisor for graduate work; only 25% have developed it highly and 18.4% well, for a total of 43.4%.

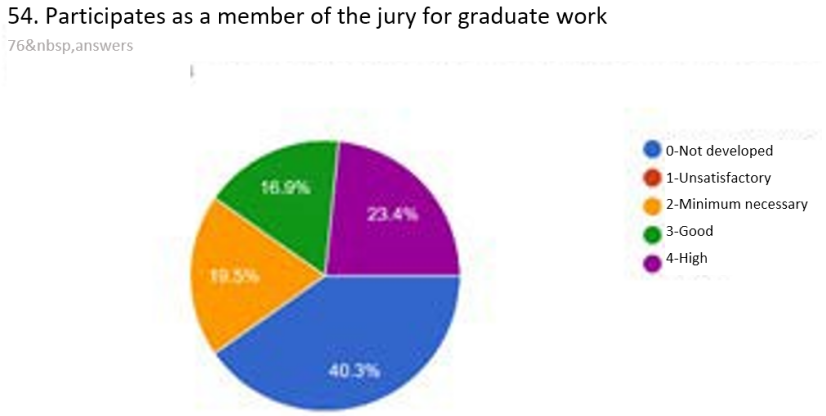
Graph No. 21



Source: Rincón y Mujica (2019)

In Graph No. 21, 32% of the teachers have not developed the competence related to their participation as a member of the jury of undergraduate work, while 14.7% only the minimum necessary, which adds up to 46.7% in total; 29.3% have developed it in a high manner and 24% in a good manner, for a total of 53.3%.

Graph No. 22

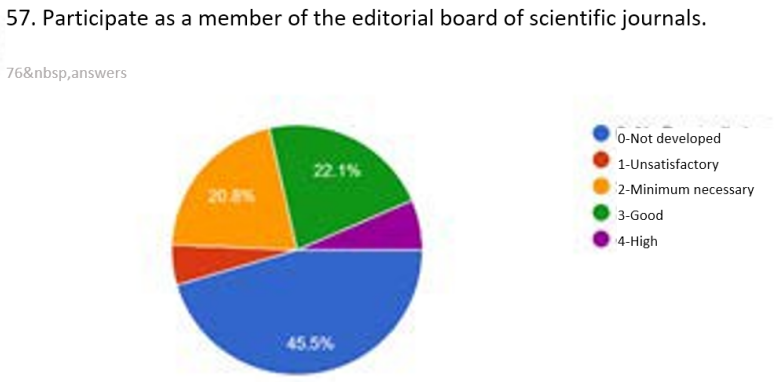


Source: Rincón y Mujica (2019)

Graph No. 22 shows that 40.3% of the teachers have not developed the competence to be a member of graduate work juries and 19.5% only the minimum necessary, which indicates that 59.8% of the total number of teachers do not do it. Only 23.4% have developed it to a high level and 16.9% to a good level, which represents 40.3%.

Sub-dimension: Ability to work in a team:

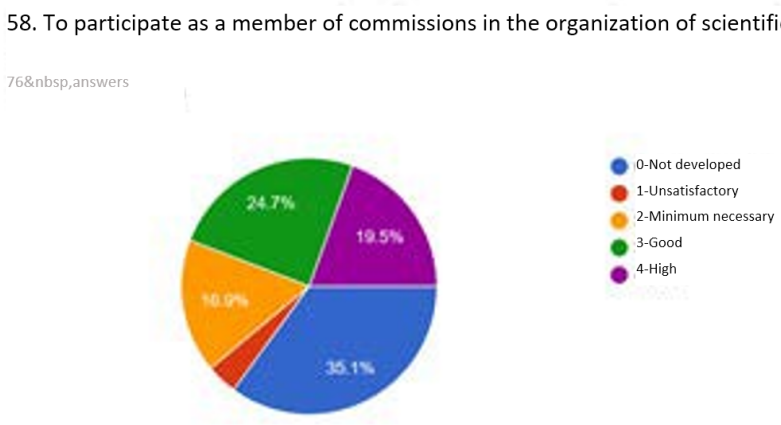
Graph No. 23



Source: Rincón y Mujica (2019)

Graph No. 23 shows that 45.5% of the teachers have not developed the competence related to participation as a member of editorial boards in scientific journals, 20.8% the minimum necessary and 5.8% unsatisfactory, which indicates that 72.1% of the teachers do not participate; only 22.1% are in the good category and 5.8% in the high category.

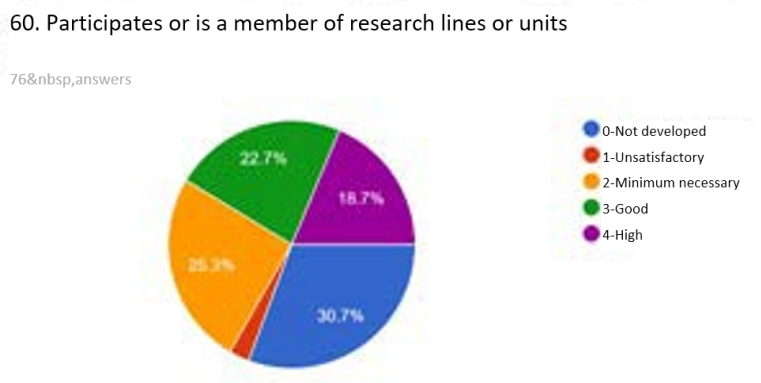
Graph No. 24



Source: Rincón y Mujica (2019)

Graph No. 24 shows that 35.1% of the teachers have not developed the competence related to participation as a member of commissions in the organization of scientific events, 16.9% the minimum necessary and 1.1% unsatisfactory, for a total of 53.1%, while 24.7% were in the good category and 19.5% in the high category.

Graph No. 25



Source: Rincón y Mujica (2019)

Graph No. 25 shows that 30.7% of the teachers are in the category of not developed of the

item member of research lines or units, 25.3% minimum necessary and 2.6% unsatisfactory, which shows that 58.6% of the total number of teachers surveyed have not developed these activities, and only 22.7% are in the category of good and 18.7% in the category of high.

CONCLUSIONS

With respect to the Research Competencies related to know-how, the teachers of the private universities of Panama handle at high and good levels the competencies related to the search for information, distinguish scientific evidence from other types of evidence, contrast approaches and positions of different authors about the phenomenon under study.

Regarding technological mastery, they handle computerized statistical packages and also show skills in relation to the methodological mastery of the research process, since a high level of development of competences such as writing the research objectives, defining the variable or variables to be studied, using and describing an objective and controlled procedure to collect information is observed.

However, there is a little more difficulty in the development of competencies related to the execution of methodological designs of qualitative research, implementing qualitative research techniques, developing procedures for the analysis of qualitative information, but in spite of that it is still a good and high development.

In the research competences related to transfer knowledge, a mastery of oral and written communication of results is observed, since the teacher can write a research report with order and methodological structure, as well as write an article of a research report for publication and present a research report at a congress.

The results of the research competencies related to knowing how to be, indicate that teachers value the ethical principles of scientific research and assume the commitment to carry out and publish unpublished and original research, as well as to comply punctually with the delivery of the intellectual products corresponding to their exercise as researchers.

For the research competencies related to knowing how to live together, in the Researcher Training, the teachers have not developed these competencies, they do not participate as evaluator

or referee in scientific journals, likewise they do not perform the methodological advising of undergraduate and graduate works, and the percentage of teachers who have developed skills to participate as jury member in undergraduate and graduate works is also very low.

They have not developed competences related to teamwork, a high percentage do not participate as members of the editorial board in scientific journals and do not participate as members of commissions in the organization of scientific events, nor as members of research lines or research units.

BIBLIOGRAPHIC REFERENCES

- Aular, J; Marcano, N. y Moronta, M. (2009) Competencias investigativas del docente de educación básica. Laurus, vol. 15, núm. 30, pp. 138-165.
- Balbo, J.; Pacheco, M. y Rangel, Z. (2015), Medición de las Competencias Investigativas en los Docentes Adscritos al Departamento de Ciencias Sociales de la Universidad Nacional Experimental del Táchira, Revista de investigación en administración e ingeniería. Vol.3, Núm. 2.
- Buendía, X.; Zambrano, L. e Insuasty, E. (2016). El desarrollo de competencias investigativas de los docentes en formación en el contexto de la práctica pedagógica. FOLIOS N° 47.
- Correa, J. (2009) Medición de las competencias investigativas en docentes de fisiología: una aproximación empírica. Revista. Facultad de Medicina; Vol. 57 No. 3, pp. 205-217.
- Cortés, J.; Cardoso, E.; Morán, R. y Flores, R. (2016). Las Competencias De Innovación E Investigación En Educación Superior: Estudio Valorativo En Los Egresados De Los Posgrados En Administración. Revista Vinculatégica. Año 2 Número 1.
- Jaik, A. y Ortega, E. (2017) Validación De La Escala Para Evaluar Competencias Metodológicas De Investigación. Ponencia. Congreso nacional de Investigación Educativa. San Luis Potosí.
- Luque, D,; Quintero, C. y Villalobos, F. (2012). Desarrollo de competencias investigativas básicas mediante el aprendizaje basado en proyectos como estrategia de enseñanza. Actualidad Pedagógica. N.º 60. julio-diciembre, pp. 29-49.
- Marrero, O. y Pérez, M. (2014) Competencias Investigativas en la Educación Superior. RES NON VERBA, Vol. 7, N°2.
- Nevache, C. (2019). Visión para la ciencia, la tecnología y la innovación 2019-2024. S/ Edit. S/Edic.https://www.senacyt.gob.pa/wp-content/uploads/2018/12/quinquenio-para-la-ciencia-senacyt.pdf
- Oropeza, M.; Mena, A. y Soto, G. (2014) La formación y desarrollo de la competencia investigativa en docentes en ejercicio de la Benemérita Universidad Autónoma de Puebla. Dike Año 8 N°15. Abril-septiembre. pp. 43-59.
- Pérez, M. (2012) Fortalecimiento de las competencias investigativas en el contexto de la educación superior en Colombia. Revista de investigaciones UNAD. Volumen 11. Número 1. enero – junio.
- Ruiz, J. (2010). Importancia de la investigación. Revista Científica, vol. XX, núm. 2, marzo-abril, pp. 125-126.

- SENACYT (2015). Política Nacional de Ciencia, Tecnología e Innovación de Panamá y del Plan Nacional 2015-2019. Panamá. Editora Novo Art, S.A. https://www.senacyt.gob.pa/wp-content/uploads/2019/10/PENCYT-2015-2019.pdf
- Vera, José (2012). Competencias científicas de docentes de Educación Superior Tecnológica en México, Universidades, núm. 52, enero-marzo, pp. 4-17.