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A Look at the Innovative Competency Profile of University Professors in Peru

[1] Elizabeth Lizbel Jurado-Enriquez[*], [2] Kelly Fara Vargas-Prado, [3] Pedro Prado-Lozano, [4] Gabriela Olivia Ramos-Córdova, [5] Ursula Rosalia Aniceto-Norabuena, [6] Liliana Cristina Mantarí-Calle

[1 *] Professor at the Universidad Tecnológica del Perú,
[2] Professor at the Universidad Autónoma de Ica, Perú,
[3] Professor at the Instituto de Educación Superior Pedagógico Público "Juan XXIII" de Ica,
[4] Professor at the Instituto de Educación Superior Pedagógico Público "Juan XXIII" de Ica,
[5] Professor at the Universidad Nacional Santiago Antúnez de Mayolo, Ancash, Perú,
[6] Teacher at EBR I.E. Micaela Galindo Rojas de Cáceres de Ica, Perú.

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ABSTRACT:

I´d like to focus on university teachers who have a great responsibility to their community and society; their role goes beyond the mere transmission of knowledge. Higher education is constantly changing, and one factor influencing its quality and effectiveness is the profile of a competent teacher, an agent of innovation, with the ability to adapt to the new demands of society. Let´s me add that innovative competence is a constant challenge since it is required to identify the characteristics, learning rhythms, and needs of their students to apply active methodologies to improve educational quality; therefore, this study aims to explore and identify the level of the innovative competence profile of teachers by analyzing the key skills they must acquire to take on the challenges of higher education; Let´s move on to the methodology was based on a quantitative approach, of a descriptive and substantive type, with a non-experimental design; the population consisted of higher education teachers in Peru, of which a sample of 60 teachers was used; for data collection, a questionnaire was applied to evaluate the Innovative Competence Profile of the Teacher taken from Fernandez and Rodriguez (2023). It was concluded that the innovative competence profile of the higher education teacher was moderately adequate at 21.7%, adequate at 50.0%, and very adequate at 28.3%.

1. Introduction

Employee In the academic field of higher education, a specific set of skills and abilities is required on the part of university professors to ensure effective teaching and comprehensive training of students.

The competency profile of the university teacher refers to the competencies, knowledge, and qualities that an educator must possess in order to successfully perform his or her role in higher education. These competencies include not only the transmission of knowledge, but also the ability to foster critical thinking, adaptation to the changing needs of students, and contribution to the academic community and research. Throughout this description, we will explore in detail the essential competencies that define a competent and effective university faculty member.

Since the arrival of the SARS COVID-19 virus, higher education has undergone significant changes in educational innovation and this is reflected in how knowledge is transmitted and acquired [1]. World education, over time, has faced different challenges that allow its adaptation in search of strategies and methodologies that facilitate its progress, as well as the offer of educational improvements. Currently, the education system is facing transcendental changes, especially with the overwhelming advance of technology [2].

Internationally, the difficulties that have arisen between faculty and students in this new virtuality arise in the midst of academic uncertainty and the need for higher education institutions to offer the necessary resources to overcome the adversity that this generates [3]. In Costa Rica, the emergence of new paradigms in higher education is not new. Adapting to the renewal of

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existing methodologies is a challenge for all educational institutions and in times of confinement it became more acute; since knowledge had to reach each of their students through virtuality and thus transform classical education into distance education [1].

A study worked with articles considering search criteria such as inclusion, event of interest, and keywords, applied in search engines such as Scopus, ERIC, and Redalyc, both in Spanish and English. Forty-seven articles were chosen, which identified expressions of experiences with ICT detailing a special environment, but did not determine the high levels of development of digital competence in teaching, and without any didactic intervention in the educational practice of teachers [11].

Another study reviewed articles related to educational innovation, pedagogical strategies, and technological resources in teaching practice in higher education. The relevant findings focus on the definitions that emerged from the key terms used in the search for scientific production [12].

Nine skill areas were identified, broken down into skill components, and quantified in terms of their most frequent appearance in the works analyzed. The skills most frequently mentioned in these papers include practical ability in managing the teaching process, empathy, training in pedagogy, personal attitude, personal appearance, communication, leadership, and development, as well as mastery of the subject matter being taught [13].

On the other hand, the results indicate that, regardless of the country, almost 68% of the mentions of factors that students consider key to their learning are related to the profile of the teacher. The following teaching competencies stand out: clear and confident communication, enthusiastic attitude, and empathy with students. Likewise, the teaching practices that university students considered most relevant are: linking theory and practice, dynamic and interactive classes, and the use of real experiences [14].

University professors face a demanding work context as a result of the educational reforms implemented in the functioning of university management. However, in their pedagogical practice, they have to incorporate mechanisms that allow participation, pluralism, and democratization of educational spaces. In addition, they must constantly prepare themselves for the use of new learning, planning, mediation, and evaluation methodologies. Consequently, trained, aware, committed teachers are required, with a positive attitude to accept and understand the differences of students in universities. For this reason, it is necessary to strengthen teacher professionalization programs to promote new competencies related to inclusion and attention to diversity in university teaching institutions [15].

At the national level, in order for innovation experiences to become a reality among Peruvian university teachers, their commitment is essential in the identification of opportunities for improvement, the conception and design of the innovation project proposal, its implementation, and the systematization of results. [4]

Most Peruvian university professors maintain that they are immersed in a society dominated by technology, which makes it necessary for students to acquire skills to face the current challenges that society demands. With the advent of confinement, it was necessary to adapt and contextualize the entire teaching-learning system and process, which was previously carried out face-to-face, to a new virtual modality. This implied adjusting the educational strategies, implementing a new competency-based evaluation system, and creating appropriate educational materials. Under these circumstances, teachers had to develop and apply their own teaching methods and techniques, design new forms of evaluation, become familiar with the use of online resources, and have technological tools for this educational modality. [5]

From the above, the question arises: What is the level of the innovative competency profile of higher education teachers in Peru?

This study is relevant because of the underlying rationale for establishing a competency profile for university teachers in order to provide a solid foundation to support the quality and effectiveness of higher education. This approach is justified by considering that a clear and defined competency profile facilitates the training and professional development of teachers, enabling them to acquire the necessary skills and knowledge to address the changing demands of

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higher education. Moreover, by focusing on student-centered learning, promoting pedagogical innovation, and fostering accountability and quality in teaching, such a profile contributes significantly to the improvement of the educational experience of students and, ultimately, to the academic excellence of the university institution.

Therefore, the justification for a competency profile for university teachers lies in their ability to strengthen higher education, benefiting all parties involved in the educational process.

The objective of this article was to explore and identify the level of the innovative competency profile of higher education teachers in Peru by analyzing the key skills they need to acquire in order to take on the challenges of higher education.

With regard to theoretical support, the innovative competency profile is defined as the set of skills that allow the teacher to design, apply, and evaluate a coherent body of creative, motivating, and different activities, through the introduction of new knowledge, methodologies, resources, and/or evaluation, with the main objective of improving the student's learning process [6].

Teachers should reach a high level of innovative competencies for the performance of their work, ideally with a model adapted to the reality studied [7].

This variable is constituted by a set of capabilities, skills, and attitudes that teachers must develop in order to incorporate digital technologies in their educational activities and in their professional development in general [8].

The innovative competence of a university professor is defined as the ability to conceive and implement original and fresh educational approaches in their teaching, with the aim of improving the learning process of their students and adjusting to the evolutions in higher education. This skill set also encompasses the willingness to investigate new technologies, instructional strategies, assessment methods, and interdisciplinary perspectives, all with the purpose of enriching the educational experience.

Competency is understood as the consequence of the integration of resources such as knowledge, skills, and attitudes, among others, expressed in a task performed at work [9].

The dimensions belonging to this study made it possible to specifically measure the variable, thus presenting the following [6]:

- Innovative disposition/attitude; here the interest and disposition to improve teaching practice, attitude towards change, evaluation of improvements in the teaching-learning processes, and analysis of the work environment to identify needs for improvement are present.

- Development of Innovations; This is made up of the adaptation of innovations to the university culture and context, participation in projects and experiences of teaching innovation, and the evaluation of the results of the innovation experiences.

- Training for Innovation; This is present when the teacher attends training courses on emerging teaching methodologies adapted to the university environment.

- Research for innovation; Here the teacher reviews the most relevant and current impact publications that deal with his/her professional area in order to be updated.

- Design/programming of innovation; The educational process is designed to meet the expectations of social change.

- Innovative Methodology; Here we develop activities that allow students to have real experiences linked to their future work environment, making use of cooperative activities.

- Innovative resources; Here we search for and select current teaching resources that allow me to innovate in the different subjects.

- Innovative evaluation; evaluation tools that involve the participation of the whole community are designed and applied.

- Dissemination of innovation; it is carried out through publications in impact journals to disseminate the results of my teaching innovations, as well as through a set of professional and academic networks.

With regard to the approach that supports the competencies, the socio-formative approach is present, which is defined as a framework of educational

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reflection-action that seeks to generate the essential pedagogical conditions to facilitate the formation of integral, integral and competent people to face the challenges of personal development, life in society, ecological balance, cultural-artistic creation and professional-entrepreneurial performance, based on the articulation of education with social, community, economic, political, religious, sports, environmental and artistic processes in which people live, implementing meaningful training activities [10].

Today there is no single widely accepted theory that defines the competency profile of university teachers. There are several perspectives and models developed by different authors and experts in education that address the competencies and characteristics that a university teacher should have.

Teaching Competencies Model: This approach focuses on identifying the essential competencies that a university teacher must possess to be successful in his or her job, such as planning skills, effective communication, empathy, and mastery of subject matter.

Constructivist Approach: Some experts argue that higher education teachers must possess a deep understanding of constructivist learning theories and be able to apply these theories in their teaching to stimulate active knowledge creation by students.

Learning-Centered Approach: This perspective stresses the importance of teachers focusing on the individual needs of students, adjusting their teaching methods, and fostering a collaborative learning environment.

Autonomous Learning Theory: Some models suggest that university teachers should facilitate the development of autonomy in their students' learning by encouraging them to take an active role in their own education.

Generic Competencies Approach: This approach focuses on the development of cross-cutting skills, such as critical thinking, problem-solving, communication, and ethics, in addition to discipline-specific knowledge.

2. Math

The methodology was quantitative, which implies selecting and analyzing information in the form of numerical data [16]; the type of research was substantive, whose central purpose lies in increasing the understanding of knowledge in a specific domain, which plays an essential role in the progress and development of scientific knowledge; being descriptive level, so that it constitutes a modality of scientific research that is dedicated to the collection, analysis and orderly and systematic presentation of data and details about a specific phenomenon or topic.

Its primary objective lies in providing a precise and detailed description of the characteristics, properties, and variables related to the object of study, without the need to explore cause-and-effect explanations [17].

The population under study consisted of teachers who teach in Higher Education in Peru; it refers to the integral group of persons, elements, or units that constitute the focus of study in a specific research or analysis. The sample consisted of 60 teachers from the Ica, Lima and Ancash regions of Peru, who were selected through non-probabilistic convenience sampling; this is a selection method in which the elements or individuals are not selected randomly and do not have an equal probability of being part of the sample. Instead, subjective or convenience criteria are used to select the sample elements [18].

The survey technique was used for data collection, which is a procedure for obtaining information from a set of individuals or entities through the formulation of standardized and structured questions [19], being the instrument used a Questionnaire to Evaluate the Innovative Competence Profile of the University Teacher [6], it was transcribed into an electronic format using the Google Forms form, this instrument had a total of 67 items structured according to nine dimensions being these the following:

Innovative willingness/attitude (12 items), innovation development dimension (12 items), innovation training dimension (6 items), innovation research dimension (6 items), innovation design/programming dimension (6 items), innovation methodology dimension (13 items), innovation resources dimension (4 items), innovation evaluation dimension (4 items), innovation diffusion dimension (4 items). The reliability values confirm its suitability (KMO index: 0.981 - Barlett sphericity test: 86836.529 - GL: 2211 - Sig.: 0.000). On the other hand, its total variance explained using the 9 factors

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(dimensions) of the construct defined, reached 70.265% [6].

The identity of the participants was safeguarded, being voluntary in such a way that each higher education teacher was free to decide to participate in the present study. The Helsinki Declaration was taken into account, as well as ethical norms established at the national and international levels.

For data processing, we worked with a Microsoft Excel spreadsheet and the IB SPSS Statistics (Statistical Package for the Social Sciences) software platform, with which we were able to perform all the statistical parts.

3. Results

Descriptive statistics

Table 1. Sociodemographic data of higher education teachers

		f	%	p-valor
Sex	Female	41	68.3%	> 0.05
	Male	19	31.7%	
Marital status	Single	25	41.7%	> 0.05
	Married	28	46.7%	
	Cohabitant	5	8.3%	
	Separated/divorced	1	1.7%	
	Widowed	1	1.7%	
Employment status	Full-time	36	60.0%	> 0.05
	Part-time	24	40.0%	
Work at more than one university	Yes	26	43.3%	> 0.05
	No	34	56.7%	
He is currently studying	Second specialty	1	1.7%	> 0.05
	Master's degree	8	13.3%	
	Doctorate	14	23.3%	
	I am not studying	37	61.7%	
Grade of studies	Ph.D.	1	1.7%	> 0.05
	Doctorate	19	31.7%	
	Master's degree	36	60.0%	
	Second specialty	1	1.7%	
	Professional degree	2	3.3%	
	Other	1	1.7%	
Publication of articles	Yes	24	40.7%	> 0.05
	No	35	59.3%	

Note: Results data.

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Table 1 shows the sociodemographic data, where 68.3 % are female and 31.7% are male; with respect to marital status, 41.7% are single, 46.7% are married, 8.3% are cohabiting, 1.7% are separated/divorced and an equal percentage are widowed. Regarding employment status, 60.0% have a full-time contract and 40.0% are working part-time; on the other hand, 43.3% of the teachers indicate that they work in more than one university; as to whether they are currently studying, 1.7% indicate that they are studying their second specialty, 13.3% a master's degree, 23.3% a doctorate, and 61.7% say they are not studying at all; regarding their degree, 1.7% have a Ph, 31.7% have a doctorate, 60.0% have a master's degree, 1.7% have a second specialty, 3.3% have a professional degree and 1,7% say other. As to whether they have published articles, 40.7% said yes and 59.3% said no.

Finally, a p-value > 0.05 was observed, which affirms that there are no significant differences in the sociodemographic data evaluated.

Table 2. Innovative competency profile

	Frequency	Percent
Moderately adequate	13	21.7%
Adequate	30	50.0%
Very adequate	17	28.3%
Total	60	100.0%

Note: Results data.

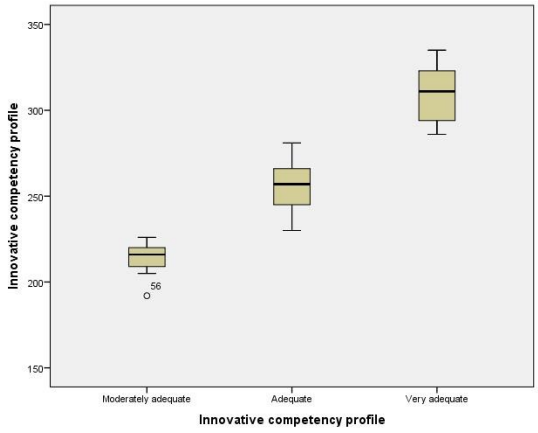

Figure 1. Innovative competency profile

Table 2 shows the level of the innovative competency profile of higher education teachers in Peru, where 21.7% are at the moderately adequate level, 50.0% at the adequate level, and 28.3% at the very adequate level.

Table 3. Dimensions of the Innovative Competency Profile

	Very inadequate		Inadequate		Moderately adequate		Adequate		Very adequate	
	f	%	f	%	f	%	f	%	f	%
Willingness/ innovative attitude	1	2%	0	0%	0	0%	22	37%	37	61%
Development of innovations	0	0%	0	0%	16	27%	27	45%	17	28%
Training for innovation	0	0%	0	0%	9	15%	18	30%	33	55%
Research for innovation	0	0%	2	3%	13	22%	25	42%	20	33%
Design/ innovation programming	0	0%	0	0%	5	8%	27	45%	28	47%
Innovative methodology	0	0%	3	5%	19	32%	26	43%	12	20%
Innovative resources	1	2%	5	8%	20	33%	15	25%	19	32%
Innovative evaluatio	2	3%	5	8%	14	23%	17	28%	22	37%

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	Very inadequate		Inadequate		Moderately adequate		Adequate		Very adequate	
	f	%	f	%	f	%	f	%	f	%
n										
Diffusion of innovation	11	18 %	15	25 %	17	28 %	7	12 %	10	17 %

Note: Results data.

Table 3 shows that 61% of higher education teachers are in the very adequate category; in the innovation development dimension, 45% are in the adequate category; in the innovation training dimension, 55% are in the very adequate category; in the innovation research dimension, 42% are in the adequate category; in the innovation design/programming dimension, 45% are in the adequate category and 47% are in the very adequate category; In the innovative methodology dimension, 43% are within the adequate level; for the innovative resources dimension, the highest percentages are within the moderately adequate, adequate and very adequate levels with 33%, 25%, and 32% respectively; with respect to the innovative evaluation dimension, the highest percentages are also within the moderately adequate, adequate and very adequate levels with 23%, 28%, and 35% respectively. Finally, in the innovation diffusion dimension, 25% were at the inadequate level and 28% were moderately adequate.

4. Discussion

Nowadays, a virtual learning environment is essential in the training of students. Virtual environments have had a positive impact on the development of students' competencies. However, it is necessary to strengthen the interaction with students and the feedback process of the contents. Virtual learning environments play an innovative role in the teaching process. The use of these environments enables the emergence of strategies that make it possible to establish a new teaching paradigm. The teacher who participates in this type of modality must have and develop a series of pedagogical, guidance, and technical functions, which in turn require a series of competencies [20].

According to the results, 78.3% (50.0% and 28.3%) of Higher Education teachers who participated in this study presented an adequate and very adequate level, respectively; similar results have been found in other research where they show that, although the digital proficiency of university teachers is generally at an intermediate level, there are differences between the different competency areas [21]; findings consistent with those of Bilbao-Aiastui et al. [22], where the majority of faculty perceive themselves at the intermediate-advanced level in the areas of information and information literacy and communication and collaboration.

Higher education is based on approaches that focus on research and the creation of innovative knowledge. Today's teachers must adapt to the use of virtual platforms and develop Digital Competencies, which combine knowledge, skill and responsibility in the use of digital environments. In a study conducted in universities in Lima (Peru), it was found that the sessions examined focused on introducing new teaching and learning methodologies through virtual environments that encourage collaborative work. These methodologies are applied in professional work and facilitate interaction among students, as well as the management of information using communication and information technologies [23], it should be taken into account that, although the teacher may have an adequate competency profile, many times he/she does not have the appropriate technological equipment, which does not allow him/her to be able to use all the tools he/she handles during the teaching process [23], [24], [25].

The use of digital competencies contributes to university teaching, because with their use, teachers improve their work, and provide knowledge and information to students who will work in various areas of expertise [26]. It is important for teachers to explore and learn about new methodologies, maintaining a favorable stance towards the use of ICT [27].

5. Conclusions

According to the results obtained, it can be pointed out that there is an adequate innovative competency profile on the part of teachers who are dedicated to teaching higher education students, this may be the result of these last years in which education had to be taught virtually, so that teachers had to be trained to use virtual

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platforms and to incorporate digital technologies in the development of their class sessions.

Regardless of the sex of the higher education teacher, marital status, employment status, number of universities where he/she works, whether he/she is currently studying, what degree he/she has, or whether he/she has publications, there are no differences in the development of his/her innovative competency profile that he/she can develop.

On the other hand, it is observed that for the dimensions of innovative willingness/attitude, Training for innovation, Innovation design/programming, and Innovative evaluation the highest percentages are within the very adequate level; for the dimensions: Development of innovations, Research for innovation, Innovative methodology is located within the adequate level; for the dimension: Innovative resources which are located within the moderately adequate level; however for the dimension Dissemination of innovation the highest percentage of teachers are located within the inadequate level.

It has been evidenced that in the dimension Diffusion of innovation, Higher Education teachers still do not manage to develop it adequately and this is corroborated by the percentages obtained; so, there are shortcomings in terms of conducting research work which leads to not being able to present it in different events, as well as not being able to manage professional and academic networks where aspects related to innovation are published.

References:

1. O. Arriaga and P. Lara. "Innovation in higher education and its challenges from COVID-19". Education Magazine, vol. 47, N°1, pp. 1-15, 2023. https://www.redalyc.org/journal/440/44072432042/44072432042.pdf
2. L. Vásquez, I. Herrera, R. Cobeña and A. Peralta. "Management of the innovation process of teaching practices in educational institutions." RECIMUNDO, vol. 7, N°1, pp. 468-477, 2023. https://recimundo.com/index.php/es/article/view/1971
3. G. González-Calvo, R. Barba-Martín, D. Bores-García and V. Gallego-Lema. "Learning to be a teacher without being in the classroom: COVID-19 as a threat to the professional development of future teachers." International and Multidisciplinary Journal of Social Sciences, vol. 9, N°2, pp. 152-177, 2020. https://doi.org/10.17583/rimcis.2020.5783.
4. Pontifical Catholic University of Peru. Notebooks of innovation in university teaching 2018. 1st Ed. Dirección Académica del Profesorado, 2018. http://files.pucp.edu.pe/profesor/2018/06/27153033/Cuadernos-de-Innovacion-en-la-Docencia-Universitaria-2018.pdf. http://files.pucp.edu.pe/profesor/2018/06/27153033/Cuadernos-de-Innovacion-en-la-Docencia-Universitaria-2018.pdf
5. I. Aquino. " The role of the university teacher during e-learning teaching in times of pandemic, Covid-19" Horizon of Science, vol. 13, N°. 24, pp. 6-8, 2022. https://revistas.uncp.edu.pe/index.php/horizontedelaciencia/article/view/1684/1830
6. J. Fernández-Cruz and L. Rodríguez-Legendre. "Design and Validation of an Instrument to Assess the Innovative Competence Profile of the University Teacher." REICE. Ibero-American Journal on Quality, Effectiveness & Change in Education / REICE. Revista Iberoamericana Sobre Calidad, Eficacia y Cambio En Educación, vol. 21, N°1, pp. 21-46, 2023. https://doi.org/10.15366/reice2023.21.1.002
7. N. Reina and G. Sosa. "Teachers' digital competencies and improvement strategies." International Scientific Journal, vol. 6, N°1, pp. 09-22, 2023. https://doi.org/10.46734/revcientifica.v6i1.59
8. J. Lázaro-Cantabrana, M. Usart and M. Gisbert-Cervera. "Assessing teacher digital competence: The construction of an instrument for measuring the knowledge of pre-service teachers." Journal of New Approaches in Educational Research, vol.8, N°1, pp.73-78, 2019. https://doi.org/10.7821/naer.2019.1.370

9. A. Paz-Marcano, A. Castro-Alfaro and J. Palacios-Rozo. "Competencies of the social entrepreneur allied to the communities of the Venezuelan oil business environment." Saber, Ciencia y Libertad, vol. 14, N°2, pp. 163-177, 2019. http://doi.org/10.18041/2382-3240/saber.2019v14n2.5883
10. S. Tobón. Comprehensive training and competencies Complex thinking, curriculum, didactics, and evaluation. 4th Ed. Colombia: ECOE, 2013. https://www.researchgate.net/profile/Sergio_Tobon4/publication/319310793_Formacion_integral_y_competencias_Pensamiento_complejo_curriculo_didactica_y_evaluacion/links/59a2edd9a6fdcc1a315f565d/Formacion-integral-y-competencias-Pensamiento-complejo-curriculo-didactica-y-evaluacion.pdf
11. García, M., Morales, M. and Gisbert, M. " The Development of Digital Teaching Competence in Higher Education". A systematic review of the literature. RiiTE Revista Interuniversitaria de Investigación en Tecnología Educativa, 173-199, 2022. https://revistas.um.es/riite/article/view/543011/331391
12. Olvera, M. and Fernández, K. "Educational innovation in teaching practice in higher education: a systematic review of the literature." Innovación Educativa, vol. 21, N°85, 2021. https://link.gale.com/apps/doc/A688976851/IFME?u=univcv&sid=googleScholar&xid=7a4d7891
13. C. Pasquaré, and F. Menichelli. "Construction of the expected profile in South American university teachers from a pre-pandemic literature review." Accounting and Management Writings, vol. 4, N°38, 2023. https://revistas.uns.edu.ar/eca/article/view/2743/2332
14. G. Valerio and M. Rodriguez. "Profile of the university professor from the student's perspective." Innovación educativa (Mexico, DF), vol. 17, N°74, pp. 109-124, 2017. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-26732017000200109&lng=es&tlng=es.
15. E. Paz. " Competencies of University Faculty for Attention to Diversity in Higher Education." Latin American Journal of Inclusive Education, vol. 12, N°2, pp. 115-131, 2018. https://dx.doi.org/10.4067/S0718-73782018000200115
16. C. Bernal. Research methodology. Mexico: Pearson-Prentice Hall. 2010.
17. R. Hernández-Sampieri and C. Mendoza. Research methodology. Quantitative, qualitative and mixed routes. Mexico: Editorial Mc Graw Hill, 2018.
18. T. Otzen, and C. Manterola. Sampling Techniques on a Study Population. International Journal of Morphology, vol. 35, no. 1, pp. 227-232, 2017. https://dx.doi.org/10.4067/S0717-95022017000100037
19. S. Hernández and D. Duana, (2020). "Data collection techniques and instruments". Boletín Científico de las Ciencias Económico Administrativas del ICEA, vol.9, N°17, pp. 51-53, 2020. https://repository.uaeh.edu.mx/revistas/index.php/icea/issue/archive
20. E. Cedeño and J. Murillo. "Virtual learning environments and their innovative role in the teaching process." ReHuSo, vol.4, N°1, 2019. http://scielo.senescyt.gob.ec/scielo.php?pid=S2550-65872019000100138&script=sci_arttext. http://scielo.senescyt.gob.ec/scielo.php?pid=S2550-65872019000100138&script=sci_arttext
21. E. Pérez-López and R. "Digital competence of university faculty during the transition to emergency remote teaching." Journal of Distance Education. vol.72, N°23, 2023. DOI: http://dx.doi.org/10.6018/red.540121
22. E. Bilbao-Aiastui, A. Arruti and R. Carballedo. "A systematic literature review about the level of digital competencies defined by DigCompEdu in higher education". Aula Abierta, vol.50, N°4, pp. 841-850, 2021. https://doi.org/10.17811/rifie.50.4.2021.841-850

23. C. Laurente-Cardenas, R. Rengifo-Lozano, N. Asmat-Vega and L. Neyra-Huamani. Development of digital competencies in university teachers through virtual environments: experiences of university teachers in Lima. Eleuthera Magazine, vol.22, N°2, pp. 71-87, 2020. https://revistasojs.ucaldas.edu.co/index.php/eleuthera/article/view/2563/2371
24. D. Melo, J. Silva, L. Indacochea and J. Núñez. "Technologies in Higher Education: Public Policies and Social Appropriation in its implementation". Investigación en Docencia Universitaria, vol.11, N°1, 2017. doi: 10.19083/ridu.11.498.
25. R. Rodríguez and M. Gómez. "Digital competencies in the teaching-learning of English in baccalaureate." Campos Virtuales, vol.6, N°2, pp. 51-59, 2017. https://dialnet.unirioja.es/descarga/articulo/6170320.
26. M. Salazar. "Competencias digitales en la Docencia Universitaria." Revista Latinoamericana Ogmios, vol.2, n°3, 2021. DOI: https://doi.org/10.53595/rlo.v1.i2.026
27. J. Balladares. "Pedagogical design of digital education for teacher training". Revista Latinoamericana de Tecnología Educativa, vol.17, N°1, 2018. http://dx.medra.org/10.17398/1695-288X.17.1.41