




## Information skills and research competences in university students

*Competencias informacionales y competencias investigativas en estudiantes universitarios*

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### ORIGINAL ARTICLE

#### KEYWORDS

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**ABSTRACT.** This research has as a target to determine the degree of correlation between information skills and research competences in students of the IX and X cycle of the Professional School of Education of the National University Santiago Antúnez de Mayolo of the Ancash region (Peru). The approach was descriptive-correlational quantitative with census sampling, the same one that was confirmed by 88 students of both sexes. The instruments used were the research questionnaire made of Rubio (2015) and the information skills questionnaire of Cabrejos and Montenegro (2017). The results revealed, using the Spearman's Rho non-parametric test, a moderate positive correlation of 0.3, with which it was established that there is a direct correlation between informational skills and research competences.

### PALABRAS CLAVE

Competencia,  
habilidad,  
información,  
investigación

**RESUMEN.** Esta investigación tuvo como objetivo determinar la relación que existe entre las competencias informacionales y las competencias investigativas en estudiantes del IX y X ciclo de la Escuela Profesional de Educación de la Universidad Nacional Santiago Antúnez de Mayolo de la Región Ancash (Perú). El enfoque fue cuantitativo de nivel descriptivo-correlacional con muestreo censal la misma que estuvo conformado por 88 estudiantes de ambos sexos. Los instrumentos que se utilizaron fueron: el Cuestionario sobre competencias investigativas de Rubio (2015) y el Cuestionario sobre competencias informacionales de Cabrejos y Montenegro (2017). Los resultados revelaron mediante la prueba no paramétrica Rho de Spearman correlación positiva moderada de 0,3 con lo cual se llegó a establecer que existe una correlación directa entre las competencias informacionales y las competencias investigativas.

## 1. INTRODUCTION

The current societies present an obvious characteristic with respect to the past centuries societies, and they develop within a context in which information and knowledge are aspects to consider for

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their development. Within this panorama, universities must assume an important mission in the training of professionals and the production of knowledge through scientific research. However, globalization has significantly influenced the ways of training professionals in charge of higher education institutions; it went from teacher-centered training to student-centered training, from a model by objectives to a model by competencies. According to this, in the educational model by competencies, education is based mainly on the graduation profile of each educational institution, and the same that must be congruent with the work environment in which the graduates of a certain career can be inserted (Obaya et al., 2011). Thus, the student must build knowledge with what he is investigating through which students must learn to learn, solve problems and adapt to changes in their environment, being the teacher, the learning guide (Ochoa et al., 2016; Sanromán & Morales, 2016). So when we talk about competence training, the skill, the aptitude and the knowledge constitute the fundamental pillars to perform a task properly and thus achieve the desired result (Fernández et al., 2008).

Although the term of competence is polysemic, it should be understood as the demonstrated individual capacity to execute; for example, possession of the knowledge, skills, and personal characteristics that are needed to satisfy the special demands or requirements of a particular situation (Obaya et al., 2011). It also refers to different levels of knowledge (knowing-knowing, knowing-doing, knowing- being, knowing-being, knowing-living together), being its axis the performances, knowing-doing, in this doing, knowledge, skills, attitudes, values are articulated and it has to be congruent with the context and with the complexity of the problem being addressed so that it be a responsible and effective way of acting (J. Morales & Varela, 2015). In short, the term competences refers to an integration of knowledge, attitudes and abilities that allow to perform successfully in a set of functions (Muñoz-Osuna et al., 2016).

In this sense, universities must ensure that their students develop the necessary skills to effectively take advantage of informational resources, not only for their professional training, but to promote lifelong learning throughout their lives, which will allow them to stay socially included (Pirela & Cortés, 2014). Thus, the importance of the correct development of competences will be beneficial not only for students, but also for the universities where they carry out their studies and for the teachers who help to achieve these competencies (Ruiz & Moya, 2020).

At this juncture, universities have detected the need to train people in key competencies that facilitate their adaptation to the rapid changes in the knowledge society and allow learning and self-development throughout life (Garrido et al., 2019), taking advantage of information and knowledge as inputs to train competent professionals, who should be agents of change and development of their peoples through scientific research.

In this sense, university students currently have a greater possibility of accessing enormous amounts of information compared to their peers from the last century, all this as a result of the development of information and knowledge technologies (ICTs), so it is common that in recent years the large number of information sources available on the internet have been mentioned, as well as the level of specialization of the information itself (Moncada-Hernández, 2014). On the other hand, the demand for information has never been so high, and this increase makes it necessary to guarantee the supply of reliable information of the highest quality (Wilson-Corral et



al., 2013), however, it is increasingly difficult to find relevant information (Fernández-Altuna et al., 2016). Likewise, this explosion of information has created a constant need for updating and improvement (Jiménez, 2009), so for the proper use of information in our days it is necessary to be immersed in a learning process; that is, to learn to learn to use different tools that the knowledge society offers us (Valdez, 2013).

This possibility of obtaining information in an easy way and, often free, has not been accompanied by user training in information retrieval techniques, which causes the loss of relevant (Juan, 2005). Therefore, it is important to know how to access, analyze, evaluate and use information properly, for this, skills related to the search, evaluation, treatment and communication of information are necessary (Sánchez, 2015). Therefore, the development of informational competences occupies a prominent place in higher education institutions due to the relevance of these competences for the information society (Marciales et al., 2015). In short, these conditions link the educational system as an instance responsible for generating strategies to characterize the practices of use of information, as well as favoring the development of competencies in the face of its treatment and appropriation (Barbosa et al, 2018 cited by Hormiga et al., 2014).

On the other hand, scientific research is directly associated with economic and regional development, reflecting a strong impact on society and knowledge (Behar, 2008). We found that countries that have global competitiveness strategies oriented towards science-technology-innovation have sustainable competitiveness and long-term growth. For this reason, countries must design economic strategies and policies aimed at scientific and technological innovation to achieve sustainable global competitiveness and long-term growth (Şener & Saridoğan, 2011).

Likewise, Gutiérrez et al. (2019) argue that the integration of training and research is a vital need for the graduation of professionals prepared to respond to the increasingly growing social demands, not only because of the positive influence of learning based on scientific research, but also because of the transformative potentialities that They are achieved in a process in which research and training constitute an indissoluble union, so scientific research must constitute the fundamental part of the progress of countries, especially those of medium and low income (Franzen et al., 2017).

On the other hand, the International Institute for Higher Education in Latin America and the Caribbean (IESALC) of UNESCO (2008, As it was cited in Zegarra, 2020) argues that the biggest challenge for higher education institutions is the training of suitable people, willing to lifelong learning and who are committed to the society of which they are part. Likewise, it recommends that students participate actively in the creation and implementation of knowledge, as well as in modifying the meaning of a given information, so that today's universities have a determining role not only for the formation of professionals but for the development of society as a whole.

According to the National Superintendence of Higher University Education (Superintendencia Nacional de Educación Superior Universitaria - SUNEDU), our country (Peru) has 92 universities licensed in the national territory and, however, the contribution in favor of investigation and development of the people is not considerable.



According to the 2019 Scimago ranking, Peru ranks 44th in world scientific production in the Education category with 326 publications versus 22,440 of the United States of America, which have the first place and compared to Brazil; the fifth in Latin America; with 2,148 publications, being education, the thematic area that contributes the least to scientific investigation.

In that sense, Perdomo et al. (2020) argue that:

In Peru, progress continues in terms of scientific production, although it is still necessary to increase the range of genre production (thesis, original articles, study of cases and others) and their quality. In the undergraduate university context, students must carry out research work during their career, but the thesis referred to in the Law draws particular attention, which constitutes a final product that demonstrates the development of the students' research. (p. 1)

In this sense, scientific research originates from well thought-out ideas or topics, including written materials and information available on the internet, among others (Hernández & Mendoza, 2018); then, the researcher must become familiar with and enter the field of knowledge in which the idea is located (Labovitz & Hagedorn, 1981 as it was cited in Hernández & Mendoza, 2018).

After having conceived the research idea, the problem statement must be carried out, which is the heart or center of the research and for this it is necessary to delve into the subject by reviewing specialized sources (books, scientific articles, web pages with academic content duly supported, thesis and other accredited sources). Next, the theoretical framework is elaborated, it implies analyzing and exposing in an organized way the theories, previous investigations and the antecedents to contextualize and guide the investigation (Hernández & Mendoza, 2018, p. 40)

Consequently, an adequate search for information would be related to the success of the scientific research process and vice versa. Therefore, it is necessary to acquire skills and know the correct techniques in the search for information that save time and improve the quality of the recovered data (Campos-Asensio, 2018)

In this sense, to carry out scientific research, investigative competences are required, which are the set of knowledge, attitudes, abilities and skills necessary to carry out the development of a research work (Jaik, 2013). Likewise, they are related to the professional training process where the skills to observe, ask questions, record field notes, experiment, interpret and write about their work are strengthened (Rivero, 2017). This implies the integration of several components such as cognitive, metacognitive, motivation and personal qualities that allow efficient performance in research capacity (Estrada, 2014). In summary, investigative competences include a list of skills that a researcher must possess such as critical thinking, problematization, oral and written communication, analysis, abstraction and synthesis (Cuevas et al., 2011; Di Virgilio et al., 2007; Gómez, 2010; López, 2006).

In this context, investigative competence should be one of the most prioritized by universities to generate a distinctive trait in their graduates, because it constitutes a successful response to the social demands, of companies and of the characteristics of the knowledge and knowledge society. in which their future graduates will work (Rojas, 2019). Only the development



of investigative competencies can guarantee that professionals are able to respond to the dynamics of constant change and dizzying advances that characterize today's society (García-Gutiérrez & Aznar-Díaz, 2018).

Finally, "Promoting the development of competencies that make the development of new knowledge sustainable is a condition that is targeted at the intersection between academic and" facilitating spaces "for research" (Astorne, 2016). Therefore, the objective should be aimed at seeking information skills for the performance of a research activity (Marzal et al., 2015).

The students of the IX and X semesters of the professional education career of the National University Santiago Antúnez de Mayolo from department of Ancash (Peru) are not strangers to this reality, according to the observations made, one of the greatest difficulties they have is the investigating or having developed investigative competence, the perception they have is to associate it with the degree completion work (degree thesis or bachelor's degree thesis), but not as a daily task that allows you to observe reality, identify the problems that concern their professional field and that by means of a methodological process centered on the logic of the investigation they come to propose solutions. Likewise, university students generally turn to the internet as the first source of information without doing the differentiation, critical analysis, evaluation and validation of it. Most of the time they do not use websites that share scientific information.

For this reason, this article collects the results on whether informational competences are related to investigative competences within the framework of a discussion necessary to improve the scientific research process in Peruvian universities.

## 2. METHOD AND MATERIALS

The research corresponds to a quantitative approach of descriptive level since it implies in the characterization of a fact, phenomenon, individual or group, in order to establish its structure or behavior (Arias, 2012; Hernández et al., 2014) and of correlational scope since its purpose is to know the relationship or degree of association that exists between two or more concepts, variables, categories or phenomena in a particular context (Hernández & Mendoza, 2018).

Correlational cross-sectional design because it establishes relationships between two or more categories, concepts or variables at a given time (Hernández & Mendoza, 2018).

The study population was 88 students from the IX and X semester of the professional education career and the sample was of a non-probabilistic census type, given that the population was small and we decided to evaluate all students.

The survey was applied as a technique and two measuring instruments were used. To evaluate informational competences, the questionnaire on informational competences created by Rubio in 2015 was used, which was validated by the same author; however, a pilot test was carried out with a sample of 40 students with similar characteristics as the study population with the intention of evaluating the reliability of the instrument, with which Cronbach's Alpha was determined. with which Cronbach's Alpha was determined, providing a value of 0.954. The instrument consisted of 42 items presenting 4 response options, which were from (1) Never, (2)



Ever, (3) Almost always and (4) Always, having a maximum score of 168 and a minimum of 42 points, cataloging the result by levels of proficiency of insufficient, regular and sufficient competence. Its execution lasted 20 minutes with the prior informed consent of each student.

For the investigative competences variable, the questionnaire on investigative competences created by Cabrejos and Montenegro was used, which were validated by the same authors; However, a pilot test was carried out with a sample of 40 students with similar characteristics to the study population with the intention of evaluating the reliability of the instrument, with which Cronbach's Alpha was determined, providing a value of 0.946. The instrument consisted of 27 items presenting 5 response options, which were from (1) Never, (2) Sometimes not, (3) Sometimes yes, sometimes no, (4) Sometimes yes and (5) Always, having a maximum score of 135 and a minimum of 27 points, classifying the result by levels of mastery of good, fair and poor competence. Its execution lasted 20 minutes after informed consent to each student.

The data collected were processed using the SPSS version 23 statistical package and the Microsoft Office Excel 2013 spreadsheet. For the analysis of the correlation of the variables under study, the Spearman Rho statistical test was used.

### 3. RESULTS OF THE INVESTIGATION

Table 1. Relationship between informational competences and investigative competences

		Informational Competences	Investigative Competences
Informational Competences	Correl. Coef.	1,000	,304**
	Sig. (bilateral)	.	,004
	N	88	88
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	Sig. (bilateral)	,004	.
	N	88	88

\*\*The correlation is significant at the 0.01 level (bilateral).

Statistically the nonparametric Spearman's Rho test (Hernández, 2014) specify a moderate positive correlation of 0.304 and a level of significance  $p = 0.00$  at a confidence level of 1%, this implies rejecting the null hypothesis and accepting the research hypothesis, which shows that there is a direct relationship between the proposed variables.

Table 2. Informational competences level

		Frecuency	Percentage
Valid data	Middle Mastery	59	67,05
	Sufficient Mastery	29	32,95
	Total	88	100,00

Note: Own elaboration

Table 2 shows the level of informational competencies of the students in the IX and X semesters of the Professional School of Education of the National University Santiago Antúnez de Mayolo, we observed that of 88 students surveyed; 59 students (67.05%) present a middle mastery of informational competences, 29 students (32.95%) present a sufficient mastery of informational competences, finally no student presents an insufficient mastery of informational competences.

Table 3. Investigative competences level

		Frecuency	Percentage
Valid data	Deficient	10	11,4
	Middle	68	77,3
	Good	10	11,4
	Total	88	100,0

Note: Own elaboration

Table 3 presents the level of investigative competences of the students in the IX and X semesters of the Professional School of Education of the National University Santiago Antúnez de Mayolo, it is observed that of 88 students; 10 students (11.4%) have a poor mastery of investigative competences, 68 students (77.3%) have a middle mastery, while 10 students (11.4%) have a good mastery of investigative competences.

#### 4. DISCUSSION

According to the results obtained in the investigation, there is a degree of moderate positive correlation between informational competences and investigative competences with a Rho value = 0.304 and a significance level of  $p = 0.00$  and reliability of 1%. These findings are similar (Bonilla, 2017), in whose study concludes that students by developing their information competences acquire the capacities to solve an academic problem, since they will be able to access the resources that provide them with information; Likewise, students perform in a better way when developing informational competences and that have activated their complex processes of identification, criticism and evaluation of information. On the other hand, Morales (2016) in his research, he considers that in order to achieve adequate research training in university students, the formation of a research culture is important, for which skills must be integrated in the context of professional training; Similarly, Cabrejos & Montenegro (2017) consider that to achieve investigative competencies it is important to stay constantly informed and updated on scientific foundations, for this it is important to have a domain in the fields of information search and processing, it should be considered that an important requirement in the construction of knowledge Scientific is the exploration and selection of pertinent information in addition to a correct management of information sources. Therefore, it should be noted that it has been observed that students in a context where there is an overabundance of information, do not have the strategies or capacities to be critical of it, do not have knowledge of academic pages, databases and information or repositories of investigations. Thus, as the student develops each of the informational competences, he will have best chance of constructing a research project or a report of investigation with solid scientific foundations.

About this, Rubio (2015) concludes in his research that students at the time of carrying out research work carry out internet searches without analyzing aspects such as updating information or web pages, authorship or veracity of sources. Likewise, Percastre (2017) concludes in his research that when investigating it is important to identify scientific sources and identify the meaning of the information depending on the topic to be investigated; therefore, information retrieval is a skill that implies making proper use of search engines and the analysis and evaluation of information.

For Luna and Silva (2018), developing investigative competences implies developing cognitive and attitudinal competencies, while for Morales (2016), developing investigative competences imply a logical research training, as well as the progressive transformation in the dynamics of this training process. Considering the previous proposals, it is necessary to consider that if an adequate search and pertinent analysis of the information is not carried out during the inquiry process, then the necessary theoretical foundation cannot be provided for the research underway, since the epistemological foundation It is understood as that investigative competence that students / professionals have to carry out the explanation, argumentation or proposition of the scientific knowledge of their career or field of professional development in order to enrich said knowledge. In this way, informational competencies are valuable in fulfilling the foundational function of science (Cabrejos & Montenegro, 2017).

Likewise, the student by communicating or sharing their research results - making use of virtual or physical means - is contributing to a lesser or greater extent to scientific dissemination, the latter being understood as that competence through which the student exposes the results of their investigations leading to their socialization to the scientific community (Cabrejos & Montenegro, 2017, p. 37). Divulcation is important since it allows giving greater validity to this scientific knowledge and the strengthening of the scientific corpus in a certain academic or professional field.

According to Rubio (2015), the informational competences of the students show that the management of information is very basic, this would lead to university students not having deep knowledge in aspects such as methodological processes, research design, types and levels of research, problem posing, this would affect or be related to their performance in those courses that they take in research matters, or those that affect the development of research works with which their academic performance in the conduct of their own research projects would be diminished, for which It is vitally important to have the assurance that university students have an adequate development in informational competences so that they can conduct themselves in a pertinent way at the time of carrying out a study, adhering to the respective scientific methodology and processes.

## 5. CONCLUSIONS

Students present a level of informational competencies of middle mastery, followed by sufficient mastery. Likewise, they present a middle level of competence, followed by good and deficient in terms of investigative competences. Consequently, it is concluded that there is a moderate positive correlation between informational competences and investigative competences. Therefore, a good level of informational competencies leads to a good level of investigative competencies.

Concerning to informational competencies and investigative competences, students present a middle mastery level.





**BIBLIOGRAPHIC REFERENCES**

- Arias, F. (2012). *El proyecto de investigación científica. Introducción a la metodología científica*. (E. C.A. (ed.); 6ta ed.).
- Astorne, R. (2016). Vista de La competencia informacional (CI) como factor clave para la formación en investigación académica. *En Blanco y Negro*, 7(2), 55–69.
- Behar, D. (2008). Metodología de la Investigación. In *Editorial Shalom*.
- Bonilla, J. (2017). *Caracterización de la competencia informativa en estudiantes universitarios. (Tesis de Doctorado)* [Instituto Tecnológico y de Estudios Superiores de Occidente]. <http://hdl.handle.net/11117/4493>
- Cabrejos, A., & Montenegro, J. (2017). Nivel de competencias investigativas de los docentes de la Escuela Profesional de Enfermería de la Universidad Señor de Sipán Chiclayo 2016 (Tesis de Licenciatura) [Universidad Señor de Sipán]. In *Repositorio Institucional - USS*. <http://repositorio.uss.edu.pe/handle/uss/3050>
- Campos-Asensio, C. (2018). Búsqueda de información en enfermería. Fuentes y recursos Search for information in nursing. Sources and resources. *Enfermería Intensiva*, 29(3), 138–142. <https://doi.org/10.1016/j.enfi.2018.04.003>
- Cuevas, L., Guillén, D., & Rocha, V. (2011). Las competencias en investigación como puentes cognitivos para un aprendizaje significativo. *Razón y Palabra*, 2(77), 55–62. [http://old.razonypalabra.org.mx/varia/77\\_4a\\_parte/56\\_CuevasGuillenRocha\\_V77.pdf](http://old.razonypalabra.org.mx/varia/77_4a_parte/56_CuevasGuillenRocha_V77.pdf)
- Di Virgilio, M., Fraga, C., Najmias, C., Navarro, A., Perea, C., & Plotno, G. (2007). No Title. *Revista Argentina de Sociología*, 5(9), 90–110. <https://www.redalyc.org/articulo.oa?id=26950906>
- Estrada, O. (2014). Sistematización teórica sobre la competencia investigativa. *Revista Electrónica Educare*, 18(2), 177–194. <https://doi.org/10.15359/ree.18-2.9>
- Fernández-Altuna, M. de los Á., Martínez del Prado, A., Gutiérrez Rayón, D., Arriarán Rodríguez, E., Toriz Castillo, H. A., Betancourt Cravioto, M., & Lifshitz Guinzberg, A. (2016). Encontrar sin perderse: ¿se ha frustrado al buscar la información médica que necesita? *Investigación En Educación Médica*, 5(18), 75–87. <https://doi.org/10.1016/j.riem.2015.10.001>
- Fernández, M. de las M., Zayas, R., & Gonzáles, P. (2008). Normas de competencias informacionales para el Sistema Nacional de Información en Salud. *Acimed*, 17(4), 1–14. [https://www.researchgate.net/publication/28237128\\_Normas\\_de\\_competencias\\_informacionales\\_para\\_el\\_Sistema\\_Nacional\\_de\\_Informacion\\_en\\_Salud](https://www.researchgate.net/publication/28237128_Normas_de_competencias_informacionales_para_el_Sistema_Nacional_de_Informacion_en_Salud)
- Franzen, S., Chandler, C., & Lang, T. (2017). Health research capacity development in low and middle income countries: reality or rhetoric? A systematic meta-narrative review of the qualitative literature. *BMJ Open*, 7(1), e012332. <https://doi.org/10.1136/bmjopen-2016-012332>
- García-Gutiérrez, Z., & Aznar-Díaz, I. (2018). The Development of Research Competencies, an Alternative to Train Childhood Educators as Teacher-Researchers. *Revista Electrónica*



*Educare*, 23(1), 297–318. <https://doi.org/10.15359/ree.23-1.15>

- Garrido, M., Santiago, G., Márquez, M., Poggio, L., & Gómez, S. (2019). The impact of digital resources in the learning and the development of the competence Analysis and Synthesis. *Educacion Medica*, 20(2), 74–78. <https://doi.org/10.1016/j.edumed.2018.02.011>
- Gómez, V. (2010). Sobre la formación de competencias en el sociólogo. *Revista Colombiana de Sociología*, 33(1), 69–86. <http://www.revistas.unal.edu.co/index.php/recs/article/viewFile/15654/16433>
- Gutiérrez, I., Peralta, H., & Fuentes, H. (2019). Integración de la investigación y la enseñanza en las universidades médicas. *Educacion Medica*, 20(1), 49–54. <https://doi.org/10.1016/j.edumed.2018.07.007>
- Hernández, R., Fernández, C., Méndez, S., & Baptista, P. (2014). *Metodología de la investigación* (McGRAW-HILL (ed.)).
- Hernández, R., & Mendoza, C. (2018). *Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta*. (McGRAW-HILL (ed.)).
- Hormiga-Sánchez, M., Barbosa-Chacón, J., Castañeda-Peña, H., & Marciales, G. (2014). Ciencia, Docencia y Tecnología. *Ciencia, Docencia y Tecnología*, XXV(48), 13–47. <http://www.redalyc.org/articulo.oa?id=14531006002>
- Jaik, A. (2013). *Competencias investigativas: Una mirada a la Educación Superior* (1st ed.). Instituto Politécnico Nacional CIIDIR Unidad Durango. <https://redie.mx/librosyrevistas/libros/competenciasinvestigativas.pdf>
- Jiménez, J. (2009). New Collaborative Forms of Doing Research. In *The ISA Handbook in Contemporary Sociology: Conflict, Competition, Cooperation* (pp. 91–106). SAGE Publications Ltd. <https://doi.org/10.4135/9781446214626.n7>
- Juan, V. (2005). Información bibliográfica. *Gaceta Sanitaria*, 19(6), 492–493. [https://doi.org/10.1016/s0213-9111\(05\)71406-0](https://doi.org/10.1016/s0213-9111(05)71406-0)
- López, L. (2006). *Formación de competencias profesionales en egresados de sociología de la UAM (Tesis de Maestría)* [Autónoma de México]. [http://conocimientoabierto.flacso.edu.mx/medios/tesis/lopez\\_1.pdf](http://conocimientoabierto.flacso.edu.mx/medios/tesis/lopez_1.pdf)
- Marciales, G., Barbosa, J., & Castañeda, H. (2015). Desarrollo de competencias informacionales en contextos universitarios: Enfoques, modelos y estrategias de intervención. *Investigacion Bibliotecologica*, 29(65), 39–72. <https://doi.org/10.1016/j.ibbai.2016.02.014>
- Marzal, M., Calzada, J., & Ruvalcaba, E. (2015). Objetos de aprendizaje como recursos educativos en programas de alfabetización en información para una educación superior de posgrado competencial. *Investigacion Bibliotecologica*, 29(66), 139–168. <https://doi.org/10.1016/j.ibbai.2016.02.029>
- Moncada-Hernández, S. (2014). Cómo realizar una búsqueda de información eficiente. Foco en estudiantes, profesores e investigadores en el área educativa. *Investigación En Educación Médica*, 3(10), 106–115. [https://doi.org/10.1016/s2007-5057\(14\)72734-6](https://doi.org/10.1016/s2007-5057(14)72734-6)
- Morales, J., & Varela, M. (2015). El debate en torno al concepto de competencias. *Investigación*



*En Educación Médica*, 4(13), 36–41. [https://doi.org/10.1016/s2007-5057\(15\)72167-8](https://doi.org/10.1016/s2007-5057(15)72167-8)

- Morales, L. (2016). La formación de competencias investigativas en estudiantes de ingeniería en el Perú (Tesis de Doctorado) [Universidad Señor de Sipán]. In *Repositorio Institucional - USS*. <http://repositorio.uss.edu.pe/handle/uss/2402>
- Muñoz-Osuna, F., Medina-Rivilla, A., & Guillén-Lúgigo, M. (2016). Jerarquización de competencias genéricas basadas en las percepciones de docentes universitarios. *Educacion Quimica*, 27(2), 126–132. <https://doi.org/10.1016/j.eq.2015.11.002>
- Obaya, A., Vargas, Y., & Delgadillo, G. (2011). Relevant aspects of concepts and methods of the competence outcomes for higher education. *Educacion Quimica*, 22(1), 63–68. [https://doi.org/10.1016/s0187-893x\(18\)30116-2](https://doi.org/10.1016/s0187-893x(18)30116-2)
- Ochoa, C., Villaizán, C., Gonzáles, J., Hijano, F., & Málga, S. (2016). Continuum, the continuing education platform based on a competency matrix. *Anales de Pediatría*, 84(4), 238.e1-238.e8. <https://doi.org/10.1016/j.anpedi.2015.12.002>
- Percastre, B. (2017). *Habilidades Informativas en los docentes del Colegio de Estudios Científicos y Tecnológicos del Estado de México, Plantel Toluca. (Tesis de Licenciatura)* [Autónoma del estado de México]. <https://core.ac.uk/download/pdf/154795136.pdf>
- Perdomo, B., Portales, M., Horna, I., Barrutia, I., Villon, S., & Martinez, E. (2020). Quality of thesis of undergraduate students from Peruvian universities Contenido. *Espacios*, 41(2), 5–10. <https://www.revistaespacios.com/a20v41n02/a20v41n02p05.pdf>
- Pirela, J., & Cortés, J. (2014). El desarrollo de competencias informacionales en estudiantes universitarios. Experiencia y perspectivas en dos universidades latinoamericanas. *Investigacion Bibliotecologica*, 28(64), 145–172. [https://doi.org/10.1016/s0187-358x\(14\)70913-x](https://doi.org/10.1016/s0187-358x(14)70913-x)
- Rivero, C. (2017). *Competencias investigativas para la elaboración de tesis* (A. C. Red Durango de Investigadores Educativos (ed.); Primera, pp. 206–216).
- Rojas, N. (2019). Enseñanza de la competencia investigativa: percepciones y evidencias de los estudiantes universitarios Teaching of research competence: perceptions and evidence of university students Contenido. *Espacios*, 40(41), 26–42.
- Rosas, G., Luna, L., & Silva, J. (2018). *Competencias investigativas en internos de Medicina del Hospital Nacional Guillermo Almenara, 2018 (Tesis de Maestría)* [Universidad Tecnológica del Perú]. <http://repositorio.utp.edu.pe/handle/UTP/1772>
- Rubio, V. (2015). *Las competencias informacionales en educación secundaria obligatoria (Tesis Doctoral)* [Universitat Autònoma de Barcelona]. <http://hdl.handle.net/10803/367215>
- Ruiz, J., & Moya, S. (2020). Evaluación de las competencias y de los resultados de aprendizaje en destrezas y habilidades en los estudiantes de Grado de Podología de la Universidad de Barcelona. *Educacion Medica*, 21(2), 127–136. <https://doi.org/10.1016/j.edumed.2018.08.007>
- Sánchez, M. (2015). Diagnóstico de las competencias informacionales en Ciencias de la Información desde la percepción del estudiante de la Universidad de la Habana. *Investigación*



*Bibliotecológica: Archivonomía, Bibliotecología e Información*, 29(67), 201–218.  
<https://doi.org/10.1016/j.ibbai.2016.02.042>

Sanromán, R., & Morales, L. (2016). La educación por competencias en el campo del derecho. *Boletín Mexicano de Derecho Comparado*, 49(146), 179–203.  
<https://doi.org/10.22201/ij.24484873e.2016.146.10510>

Şener, S., & Saridoğan, E. (2011). The effects of science-technology-innovation on competitiveness and economic growth. *Procedia - Social and Behavioral Sciences*, 24(2011), 815–828. <https://doi.org/10.1016/j.sbspro.2011.09.127>

Valdez, J. (2013). Reseña del libro. *Investigación Bibliotecológica: Archivonomía, Bibliotecología e Información*, 27(61), 209–216. [https://doi.org/10.1016/s0187-358x\(13\)72560-7](https://doi.org/10.1016/s0187-358x(13)72560-7)

Wilson-Corral, V., Rodríguez-López, M., Guzmán, J., & Nieves, M. (2013). Intelligent use of search tools science, applied to the seismicity in mines: Case study. *Perfiles Educativos*, 35(141), 115–130. [https://doi.org/10.1016/s0185-2698\(13\)71838-5](https://doi.org/10.1016/s0185-2698(13)71838-5)

Zegarra, R. (2020). La relación entre la alfabetización informacional y la comprensión lectora inferencial en estudiantes (Tesis de Maestría) [Universidad Peruana Cayetano Heredia]. In *Universidad Peruana Cayetano Heredia*. <http://repositorio.upch.edu.pe/handle/upch/7766>

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