Revista Española de Educación Médica

Proposal of a profile of professional competencies for university teachers in the field of Health Sciences.

Propuesta de un perfil de competencias profesionales para el docente universitario en el campo de las Ciencias de la Salud

Cindy Giselle Díaz-Contino [1], Fernanda Gómez García [2], Joshua Culcay Delgado [3] and Adriana García Cuello [4]

1 San Gregorio de Portoviejo University; cgdiaz@sangregorio.edu.ec, https://orcid.org/0000-0001-6949-406X
2 San Gregorio University of Portoviejo; figomez@sangregorio.edu.ec, https://orcid.org/0009-0009-6728-4072
3 San Gregorio University of Portoviejo; jculcay@sangregorio.edu.ec, https://orcid.org/0000-0002-8433-060X
4 San Gregorio University of Portoviejo; adgarcia@sangregorio.edu.ec, https://orcid.org/0000-0002-7044-1894

Received: 1/15/24; Accepted: 3/25/24; Posted: 3/28/24

Summary: The contemporary context of teaching in the field of health requires an update and expansion of teachers' skills, in order to adapt to the new challenges that are emerging. The objective of this study is to propose a competency-based profile for university teachers in the field of Health Sciences. An exhaustive bibliographic review was carried out of information sources that directly addressed teaching competencies, health pedagogy, and current challenges in higher education in Health Sciences. From this, a proposal for a teaching profile was developed based on five basic and three specific competencies. It was determined that the comprehensive training of teachers in the area guarantees that students are equipped to face professional challenges, which also impacts the improvement of health care in the community.

Keywords: professional skills; University teacher; Health Sciences.

Resumen: El contexto contemporáneo de la enseñanza en el ámbito de la salud requiere una actualización y ampliación de las competencias de los docentes, con el fin de adecuarse a los nuevos retos que están surgiendo. El objetivo del presente estudio es proponer un perfil basado en competencias para el docente universitario en el campo de las Ciencias de la Salud. Se realizó una revisión bibliográfica exhaustiva de fuentes de información que abordaban directamente las competencias docentes, la pedagogía en salud, y los retos actuales en la educación superior en Ciencias de la Salud. A partir de ello se elaboró una propuesta de perfil docente basado en cinco competencias básicas y tres específicas. Se determinó que la formación integral de docentes en el área garantiza que los estudiantes en estén equipados para afrontar los retos profesionales, lo cual además impacta en el mejoramiento de la atención sanitaria en la comunidad.

Palabras clave: competencias profesionales; docente universitario; Ciencias de la Salud.

1. Introduction

In the dynamic and increasingly demanding field of Health Sciences, the figure of the university professor plays a crucial role. Historically, the training of professionals in this area has focused on the transmission of technical and theoretical knowledge. However, the current landscape of health education demands a review and expansion of teaching competencies to adapt to emerging challenges. Challenges include, but are not limited to, the incorporation of new technologies, interdisciplinary approaches in healthcare, and a growing emphasis on soft skills such as effective communication and empathy (1-2). Furthermore, the evolution of educational paradigms towards more participatory and student-centered models requires a transformation in teaching

methodologies. This implies not only expert mastery of the subject matter taught, but also advanced pedagogical skills and adaptability to various contexts and learning styles. The preparation of university teachers in Health Sciences must, therefore, cover a broader range of competencies to respond effectively to these needs.

The competencies of university teachers in this area is a topic that has been debated for decades, and there is no consensus on the minimum qualifications and experience required (3). However, Health Sciences teachers have the responsibility of preparing future professionals for their working lives in a constantly changing field, for which they need high-quality knowledge, self-directed learning and problem-solving skills, and the ability to transfer these skills to patient care (4).

The objective of this study is to propose a competency-based profile for university teachers in the field of Health Sciences. Professional competence is understood as the set of skills, knowledge and attitudes that enable the individual to perform the tasks of their profession effectively in the context of their work (5). With this profile, we seek to establish the basic and specific competencies that educators must possess and develop to teach effectively in a constantly evolving and increasingly interdisciplinary academic environment.

Conceptual review of competencies

The semiotic conception of competence applies both to academic activities and to other forms of human action. When trying to describe them, the meanings vary and present different nuances (6). Various authors in the field of education and professional development advocate a holistic approach to understanding the complexity of the notion of competence (7-8). The main attributes are "knowledge", "skills" and "attitudes" (including values), which interact and support each other in multiple ways (7). According to Cano (9), this definition incorporates competencies of a very different nature, but encompasses talents and intelligences that have not traditionally been taken into account in regulated educational systems. Rather than viewing knowledge, skills, and attitudes as separate entities, this approach views them as intrinsically interconnected. It is emphasized that true mastery of a competence implies the ability to apply theoretical knowledge in practical situations, adapting to changing contexts and challenges. Cuba (10) describes knowledge as a cognitive competence based on understanding. Cognitive competence also includes informal tacit knowledge acquired from experience. Skills are considered a functional competence or behavioral objective: knowing how to perform a given task in a given occupational area. Attitudes, which involve underlying values, are the personal qualities that guide and sustain job performance.

According to Monzón et al. (11), the conceptualization of competence in the professional and educational field integrates both generic and specific aspects. This duality recognizes that, while certain competencies are highly specialized and unique to a particular field or role, there are core competencies that are based on a set of more general knowledge, attitudes and skills that are applicable in a wide range of contexts. However, the interconnection between the basic and specific aspects of the competition is essential. While specific competencies include competencies that are exclusive to a profession or discipline, for example, in Health Sciences, for Oramas et al (12), specific competencies also involve affective and ethical dimensions, which includes the development of empathy. , integrity, moral judgment and self-awareness, understanding that these qualities are fundamental to professional practice, especially in these areas.

Generic competencies provide a foundation on which specific competencies are built. A doctor needs not only a deep knowledge of medicine (specific) but also the ability to make critical judgments (generic) in clinical situations. Similarly, a university teacher in Health Sciences must have specialized skills in their field, but they also need generic skills in pedagogy, communication and adaptability to be effective in their role.

It is then emphasized that the competencies of teachers in Health Sciences are multifaceted and dynamic, requiring a balance between basic and specific aspects. The focus on comprehensive

competency ensures not only educational excellence, but also the training of health professionals who are well equipped to meet current and future challenges in the field.

Challenges of medical education in the 21st century and the teaching profile.

Teaching is an essential skill for all doctors (13) and knowledge is produced and replaced at such a rapid rate that, in 5-year projection studies, half of the knowledge taught will be obsolete (14). The challenges of medical education today and the profile of the teacher required to face them are varied and complex, reflecting the rapid changes in medicine and society. A teacher, in general terms, is an educational professional whose primary responsibility is to facilitate student learning (15-16). This role involves not only the transmission of knowledge, but also the guidance and encouragement for students to develop critical, creative and independent thinking skills.

In the context of Health Sciences, the teacher has a specific and specialized role (17). These professionals, in addition to teaching the basic and advanced principles of medicine, nursing, pharmacology, and other related disciplines, must incorporate in their teaching practical and clinical aspects essential for the training of competent health professionals. This includes demonstration and supervision of medical procedures, teaching skills in diagnosis and treatment, and guidance on ethics and communication in the context of patient care (1-2). Health Sciences teachers often combine their educational role with clinical practice and research. They are at the forefront of advances in their field and must be constantly updated to transmit relevant and recent knowledge to their students (3). Additionally, they have a responsibility to instill in future healthcare professionals a holistic, patient-centered approach that balances medical science with compassion and humanitarian care.

The current transformations in education have designed an educational model based on competencies, both personal and professional, that favor the direct participation of the student in the process, and that allow the integration between basic sciences and them with clinical sciences. This leads to an increase in the early development of clinical and communicative competencies with the patient and their families, and establishes a balance between preventive and curative experiences, as well as between community and hospital experiences (18-19). Likewise, the current challenge for academic fields is to consolidate this competency approach in higher education, which is based not only on the social and disciplinary-research contexts from complex thinking (20), but also for teaching to be oriented towards training of people with scientific and professional skills, taking into account the articulation of knowledge with being and doing (21)

2. Methods

The present study adopted a qualitative methodological approach, focused on the systematization of ideas from key texts in the areas of Health Sciences and Educational Sciences. This methodology allowed for the deep and reflective exploration of the competencies necessary for university teachers in this area, based on existing theory and evidence.

An exhaustive bibliographic review was carried out in the Google Scholar and PubMed databases using as a search strategy the key words in Spanish: “professional competencies” AND “university teacher” AND “Health Sciences”; and the key words in English: “professional skills”; “university professor”; “Health Sciences”. Academic articles, books, and expert reports published in the last 10 years were selected, ensuring the relevance and timeliness of the information. Sources were used that directly addressed specific teaching competencies for the field of Health Sciences, health pedagogy, and current challenges in higher education related to these areas.

Once the information was collected, key ideas were systematized, using techniques such as thematic and discourse analysis. This allowed us to develop an enriched theoretical proposal on what constitutes essential teaching competencies in Health Sciences and Education, and how these can be developed and applied in the university context. To ensure the validity and reliability of the results, the preliminary findings were contrasted with two experts on the subject, who held a Phd degree. in

Health Sciences Education, through discussion panels. From this information it was possible to obtain critical feedback and additional perspectives that enriched the analysis.

3. Results and discussion

To enhance the educational process, it is essential to integrate an approach of constant and progressive change. This means that teachers achieve academic excellence through the acquisition of new skills, which will optimize their daily work in the classroom. It is essential that teachers teach students to "learn to learn", fostering in them the ability to reflect and issue constructive criticism on various aspects of their lives. This approach not only improves education, but prepares students to successfully meet future challenges. The social dimension of the University makes it a mechanism that fosters social unity and drives the modification of the productive model, as well as economic and technological advance (22). For this reason, emphasis is placed on presenting the University as an institution that generates ideas, projects and opportunities. The work of a teacher is not an isolated event or solitary experience, rather it is the product of permanent contact with an objective, real truth of multidisciplinary work perfected by experiences acquired in various contexts (23-24). With competency-based education, learning is strengthened and knowledge is completed and one would be prepared to do. Teachers play an essential role, and active feedback between students and teachers is necessary.

Currently, teaching goes beyond giving a class to university students, so it is essential that the teacher is in continuous training, to enhance various skills that optimize the teaching-learning process (1). Teaching in the health field is an accelerated career, and is focused on obtaining and developing competencies. This is paradoxical, since as described (25), skills were an imperative demand of the industry at the end of the 19th century and beginning of the 20th century. This process inevitably requires knowing the academic environment to determine the existing needs at the university level, at the economic level, infrastructure, pedagogy, didactics and above all the shortcomings that may exist at the level of teaching competencies (26).

Harden & Crosby (27) synthesized the needs to create competencies for the health sciences teacher in two large groups, generic and specific, in order to obtain a comprehensive result, where the teacher is more than the image of a source of knowledge, a niche of knowledge, which manages, facilitates and generates educational resources. The authors proposed 12 roles that the teacher should develop to obtain the degree of “Good Teacher”, and these in turn were grouped into 6 areas:

- Facilitator: The teacher acts as a tutor who accompanies and facilitates the students' learning, guiding them through the educational process.
- Role Model: The teacher is an example for students, not only in teaching and learning, but also in their role as a health professional, demonstrating good practices and ethical behaviors.
- Information Provider: The faculty member shares essential knowledge, whether through readings or clinical practice, providing students with the information they need to learn and grow in their field.
- Resource Developer: Involves the creation of educational materials, such as study guides and other resources, to improve the learning process.
- Planner: The roles of curriculum planning and course organization are crucial. The teacher must be able to design and structure the course effectively to facilitate learning.
- Assessor and evaluator: The teacher must evaluate both the students and the curriculum, providing advice and adjusting the educational program as necessary to ensure learning effectiveness.

Table 1 presents the necessary competencies obtained from our study.

Table 1. Teacher competencies in the area of Health Sciences.

Basic teaching skills	
Cognitive	-Identify and develop abstract concepts and categories. -Build scientific knowledge and theories. -Analyze and synthesize the analogies of knowledge. -Propose multiple creative, imaginative, innovative and inventive solutions to the needs and gaps in knowledge.
Communicative	-Provide teaching-learning strategies that favor self-regulation, in an area that understands the global meaning of the discourse. -Produce written documents and present arguments in a justified, coherent manner and with valid reasons. -Listen to the interlocutor and dialogue with him. - Discuss with students the criteria with which they will be evaluated.
Psychosocial	-Develop skills to establish appropriate relationships with students. - Perform teamwork. -Ability to share information and make decisions. -Maintain initiative and leadership.
Informational and digital	-Search and evaluation of information. -Evaluate the quality, veracity, relevance of the information. -Use Information and Communication Technologies to communicate and collaborate. - Create and edit digital content, such as documents, presentations, images and videos, using appropriate digital tools.
Pedagogical	-Plan, implement and evaluate effective teaching and learning processes. - Design and structure the course effectively. -Transmit information in a clear and understandable way. -Understand and attend to the emotional and educational needs of students. -Manage time, resources and student behavior in the classroom. -Guide and facilitate student learning during their educational process. - Create educational materials, such as study guides and other resources. - Evaluate students and curriculum, adjusting the program to ensure learning effectiveness.
Specific teaching competencies	
Clinics and practices	-Develop skills in specific techniques and procedures of health sciences. - Teach and model the use of scientific evidence in clinical decision making. -Teach safe practices and risk management in health care. -Understand how health systems work and their impact on clinical practice and patient care.
Axiological	-Proceed in an ethical, reflective and humanistic manner with the students. -Reflect with students on the problems, situations and examples that allow us to reach ethical and humanistic proposals in the corresponding discipline. -Maintain honest and responsible behavior.
Research	-Design various models that allow a better understanding of reality. -Know and use research methods from different sciences. -Identify, describe and classify knowledge and knowledge. -Support theories and concepts with arguments and examples taken from the reality studied. -Analyze and interpret the intentionality of the different forms of expression of knowledge. -Discuss criteria to select reliable and trustworthy health information. -Precise and substantiate their concepts in light of scientific theories. -Process the information and reach clear and relevant conclusions, aimed at student participation.

These competencies, properly developed, allow the teacher to carry out planning, implementation and evaluation actions of teaching-learning models, through didactic and methodological resources that are reflected in the efficient and effective learning of the students. For teaching competencies to be consolidated as an effective mechanism of educational quality, the will and disposition of the teachers themselves towards the adoption and implementation of innovative pedagogical practices and strategies, aimed at improving teaching, is essential. The main purpose is to promote among students the integration of theoretical knowledge (know), practical skills (know how) and the effective application of both in real situations (do). This will facilitate their development as competent professionals in the field of Health Sciences (4-5).

For Vera (29), the teaching competency process requires a critical and systematic evaluation that uses review instruments attached to the methodological processes that show real indicators of teaching quality. The identified competencies include cognitive, communicative, psychosocial, informational, pedagogical, clinical and axiological aspects, as well as investigative and ethical dimensions. These competencies come together to form a comprehensive profile of the university professor in Health Sciences, emphasizing the complexity and diversity of roles played in the training of health professionals. Effectively implementing these competencies will contribute to the academic and professional performance of students, preparing them to face the constant challenges of the field.

4. Conclusions

• Teaching practice should be seen as an interactive and dynamic activity, integrating knowledge and experiences from different disciplines. Furthermore, it highlights the need for continuous training for teachers, especially in rapidly evolving fields such as Health Sciences, which is essential to maintain relevance and effectiveness in teaching. This implies not only updating knowledge, but also developing new theoretical and practical skills.
• Teachers in the area of Health Sciences must develop a comprehensive profile that combines basic competencies such as: cognitive, communicative, psychosocial, informational and pedagogical; as well as specific competencies: clinical and practical; axiological and research. This comprehensive approach to teacher education ensures that its students are well prepared to meet the challenges of the professional field, as well as to contribute significantly to the evolution and improvement of healthcare in society.

Financing: There has been no financing.
Declaration of conflict of interest: The authors declare that they have no conflict of interest.
Author contributions : Cindy Giselle Díaz Contino: Conceptualization of the article, acquisition of information data, review and final editing. Fernanda Gómez García: Original writing, editing and final revision. Joshua Culcay Delgado: Analysis and processing of information and final review. Adriana García Cuello: Analysis and processing of information and final review.

References

1. López MM, Gutiérrez NP. Role of health sciences teachers and the development of their skills. Iatreia. 2010; 23(4),432-440. https://www.redalyc.org/pdf/1805/180515586013.pdf
2. Riskiyana R, Qomariyah N, Hidayah RN, Claramita M. Towards improving soft skills of medical education in the 21st century: a literature review. International Journal of Evaluation and Research in Education 2022; 11(4),2174-2181. https://ijereiaescore.org/article/view/22951/13487.html
3. Mikkonen K, Ojala T, Sjögren T, Piirainen A, Koskinen C, Koskinen M, Kääriäinen M. Competence areas of health science teachers–A systematic review of quantitative studies. Nurse Education Today. 2018; 70,77-86. https://doi.org/10.1016/j.nedt.2018.08.017
4. González CG, Molina AH, Peña EB, Herrera YR, Larramendi RF. The third level teacher in the health sciences. Ecuadorian context. Medical Education 2018; 19(1), 34-38. https://doi.org/10.1016/j.edumed.2016.08.006
5. Pinilla AE. Conceptual approach to professional competencies in health sciences. Public Health Magazine. 2012; 14(5): 852-64. https://www.redalyc.org/pdf/422/42229127012.pdf

6. Jury F. The focus on competencies: A critical perspective for education. Complutense Magazine of Education. 2009; 20 (2), 343-354. https://core.ac.uk/download/pdf/38820699.pdf
7. Ángel-Macías MA, Ruiz-Díaz P, Rojas-Soto E. Proposal of professional competencies for teachers of health programs in higher education. Magazine of the Faculty of Medicine. 2017; 65(4),595-600. http://doi.org/10.15446/revfacmed.v65n4.58620
8. Pinilla AE, Cárdenas FA. Evaluation and Construction of a profile of professional competencies in internal medicine. Acta Med Colomb. 2014; 39(2): 165-73. https://www.actamedicacolombiana.com/ojs/index.php/actamed/article/view/249/806
9. Cano, E. Evaluation by competencies in higher education. Teachers Magazine of curriculum and teacher training. 2008; 2(3), 1-16. https://www.ugr.es/~recfpro/rev123COL1.pdf
10. Cuba A. Construct competence: historical-epistemological synthesis. Education. 2016; 25(48), 7-27. http://dx.doi.org/10.18800/educacion.201601.001 .
11. Monzón PB, Dos Santos AB, Matos Z. Competition between meaning and concept. Educational contexts: Education Magazine. 2007; (10),7-28. https://dialnet.unirioja.es/descarga/articulo/2656723.pdf
12. Oramas R, Jordán T, Valcarcel N. Proposed model of the university professor in the Medicine career. Higher Medical Education. 2012; 26(4), 618-634. http://scielo.sld.cu/scielo.php?pid=S0864-21412012000400014&script=sci_arttext
13. Niaz HF, Mistry JR. Twelve tips for being an effective clinical skills peer teacher. Medical Teacher 2021; 43(9), 1019-1024. https://doi.org/10.1080/0142159X.2020.1841130
14. Martínez F. The profile of the university professor at the dawn of the 21st century. University of Murcia, Spain: First teacher improvement meeting. 2010. https://www.geocities.ws/justoferva/pr.html
15. Hordijk R, Hendrickx K, Lanting K, MacFarlane A, Muntinga M, Suurmond J. Defining a framework for medical teachers' competencies to teach ethnic and cultural diversity: Results of a European Delphi study. Medical Teacher. 2019[cited 2024 Jan 05]; 41(1), 68-74. https://doi.org/10.1080/0142159X.2018.1439160
16. Pinilla-Roa AE. The university teacher as an autonomous professional. A view from the health sciences. Magazine of the Faculty of Medicine. 2015; 63(1), 155-163. https://www.redalyc.org/pdf/5763/576363523020.pdf
17. Amado J, Rodríguez N, Oscanoa T. Evaluation of the curricular plan of a postgraduate program in Health Sciences. Medical Horizon. 2019; 19(2), 70-76. http://www.scielo.org.pe/scielo.php?pid=S1727-558X2019000200009&script=sci_arttext
18. General Medical Council. The doctor as teacher. BMJ. 1999; 399 (7221). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1117103/
19. Medina Santander CE, Santeliz Casavilca JV. Teaching participation strategies in a new competency-based curricular design proposal. Educere. 2008; 12(43), 789-795. https://ve.scielo.org/pdf/edu/v12n43/art15.pdf
20. Tobón ST. Skills, quality and higher education. Bogotá: Editorial Magisterio. 2006 https://n9.cl/sf7r0q
21. Gardner H. Disciplined mind: What all students should understand. 2021. Simon & Schuster. https://n9.cl/isg34
22. Contreras IP. Social function of the university, integration of substantive functions, with the community, work team and disciplines. Social Commitment Magazine. 2019; (1), 29-40. https://doi.org/10.5377/recoso.v1i1.13224
23. Guraya SY, Chen S. The impact and effectiveness of faculty development program in fostering the faculty's knowledge, skills, and professional competence: A systematic review and meta-analysis. Saudi Journal of Biological Sciences. 2019; 26(4), 688-697. https://doi.org/10.1016/j.sjbs.2017.10.024
24. Schwartzman G, Eder ML, Roni C. Teacher training in and for the university: devices and practices in Health Sciences. University Teaching Magazine. 2014; 12. http://sedici.unlp.edu.ar/handle/10915/120864
25. González V, González RM (2008). Generic skills and training. Ibero-American Journal of Education. 2008; 47, 185-209. https://doi.org/10.35362/rie470710
26. Eder ML, Roni C, Schwartzman G. Devices and practices of university teacher training in health sciences. Mar del Plata: VIII National Conference and I International Congress on Teacher Training: Narration, Research and Reflection on practices. 2015. https://www.aacademica.org/carolina.roni/3.pdf
27. Harden RM, Crosby J. The good teacher is more than a lecturer: the twelve roles of the teacher. AMEE. 2000 [cited 2024 Jan 05]; 22(4), 334-347. https://doi.org/10.1080/014215900409429

28. Dent JA, Harden RD, Hunt D. A practical guide for medical teachers. 6th. ed. Elsevier. 2021.
29. Vera Carrasco O (2016). The new university teaching model in medicine. Hospital Clinic Notebooks. 2016; 57(1), 59-64. http://www.scielo.org.bo/scielo.php?pid=S1652-67762016000100009&script=sci_arttext