Educación Médica

ORIGINAL

Competency model for academic excellence in nursing educators

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Abstract
Introduction: There is currently no common criterion with regard to the teaching skills that the educators on the nursing degree should have. As a result, the training of these professionals is generally minimal and very heterogeneous. The purpose of the study was to determine the importance of the teaching competencies that nurse educators should have, by developing a competency model that can be used to design future training sessions for these professionals.
Material and Methods: A map of competencies was designed for educators on the nursing degree following a review of the literature. An online self-administered questionnaire was created in order to determine the importance given by teachers to each of the proposed competencies, by using the Likert scale. The data was collected in an electronic database and statistically analysed.
Results: A total of 327 nurse educators from different Spanish universities participated in the study. In general, all competencies were rated as important, with scores of 4,3 and above out of 5. Those with the highest scores were disciplinary competence (4,68), interpersonal communication competence (4,66) and planning competence (4,61). An intraclass correlation coefficient of 0,968 was obtained, which showed an excellent level of agreement among participants.

Conclusion: It is considered that the proposed model of teaching competencies for nurse educators is appropriate and meets the needs of these professionals in terms of pedagogy and teaching methodology. Therefore, it should be considered as a tool for the development of future training plans.

Modelo de competencias docentes para la excelencia académica en profesores de Enfermería

Resumen

Introducción: En la actualidad no existe un criterio común en relación con las competencias docentes que deben presentar los profesores del Grado en Enfermería, provocando que la formación de estos profesionales sea generalmente escasa y muy heterogénea. El objetivo de este estudio es determinar la importancia de las competencias docentes que deben presentar los profesores de enfermería, elaborando un modelo competencial que sirva para diseñar futuras acciones formativas para estos profesionales.

Material y método: Tras una profunda revisión bibliográfica se diseñó un mapa de competencias para profesores del Grado en Enfermería, sobre el cual se creó un cuestionario online autoadministrado para determinar la importancia que los profesores brindaban a cada una de las competencias propuestas a través de una escala de Likert. La información fue recogida en una base de datos electrónica y analizada estadísticamente.

Resultados: Un total de 327 profesores del Grado de Enfermería de diferentes universidades españolas participaron en el estudio. Todas las competencias fueron catalogadas como importantes, con puntuaciones por encima de 4,3 sobre 5. Las que obtuvieron una mejor puntuación fueron la competencia disciplinar (4,68) la competencia de comunicación interpersonal (4,66) y la competencia de planificación (4,61). Se obtuvo un índice de correlación intraclase de 0,968, manifestando un grado de acuerdo excelente entre los participantes.

Conclusiones: El modelo de competencias docentes para profesores de enfermería propuesto es adecuado y responde a las necesidades que estos profesionales tienen en materia de pedagogía y metodología docente, siendo considerado para la elaboración de futuros planes de formación.

Introduction

Health care is a dynamic field that must be constantly updated according to the development of scientific knowledge, technological advancement and the changing social needs.

These quick changes in the healthcare sector have caused the clinical aspects of nursing to become increasingly complex, requiring from these professionals a very high level of knowledge as educators and as clinical practitioners, as well as the development of communication skills, teamwork and critical thinking[1].

For this reason, nurse educators must be able to provide their students with the required theoretical-practical knowledge, and also promote the skills that allow them to perform their role as caregivers in a highly complex working environment, in which, the management of stress conditions and relationships with patients, family members, and other professionals are part of the development of their daily professional activity.

Therefore, nurse educators must have not only a high level of clinical experience, but also pedagogical competence, knowledge in teaching strategies and assessment methods that allow them to have the required teaching competencies, which will qualify them to perform this task effectively[2–4].

Here, we encounter one of the main problems related to the teaching of nursing. There are many countries where teacher education for university educators is neither regulated nor systematized. This fact dates back to the university's origin, where having the knowledge of the subject was considered a sufficient condition for teaching, without requiring educators at this academic level, to have a specific training on pedagogy and education[5,6]. This fact is significant since some studies have found a direct relationship between the teacher's adequate teaching competencies and better student academic results[7].

Pedagogical competences allow educators to transmit knowledge, skills and attitudes to their students, in a positive learning environment of freedom, critical thinking and empathy[8,9]. There is currently no consensus regarding the required competencies for nursing educators[10–12]. and in many cases, depending on the country, the only requirement to becoming a university professor is to have a master's or a doctorate degree.

Despite this, there are already a number of studies available that have sought to determine what these competencies are, as the case of the review conducted by Zlatanovic et al., in which these competencies were included in five groups[13]:

- Nursing competencies: including nursing knowledge and nursing practice. In this sense, the literature is clear in determining that nurse educators must have a high level of knowledge and experience in the area, in order to perform the teaching role in an appropriate manner[14].
- Academic competencies: relates to the academic record of these educators. According to the literature review, nurse educators must have a complex combination of academic knowledge and practise, which includes the achievement of a doctoral degree and the involvement in research projects[15].
- Pedagogical competencies: competencies that qualify the educator to accomplish the teaching-learning processes in a proper manner. Accordingly, published studies point out that nursing educators must be able to link theoretical to practical knowledge, forging connections between life, practice, and the classroom, as well as engaging students in the teaching process[16,17].
- Technology use and management skills: competencies related to the use of digital technology in teaching-learning processes are included, as well as those that address management, planning, organization, coordination and leadership in the teaching environment[14].
- Attitudes: in this model, attitudes are understood as a combination of individual nurse educator's attitudes, emotional tendencies and character traits that might affect teaching and interpersonal relationships with students[10].

The literature on the necessary nurse educator's competencies is relatively small at present[8,13].

Therefore, the clarification and delimitation of a framework of teaching competences for the nursing teacher becomes a necessary condition to guide their training process based on pedagogical knowledge. It is clear that currently, many nursing educators transitioning from the healthcare environment/clinical practice teach their discipline under the cognitive mechanisms of self-training, intuition, trial and error, reproducing their experiences, or imitation[18–20], and this aspect needs to be reverted, due to the major significance of providing these professionals with the necessary tools to perform their important educational work with the highest quality. This will not only be to the benefit of their students but also to society in general.

The study aims to determine the importance of the teaching competencies that nursing teachers should have in order to carry out their academic work with maximum quality and efficiency based on their self-perception.

Material and methods

Study design

A cross-sectional descriptive study was conducted by disseminating a self-administered questionnaire on the

Table 1 Educators' academic discipline.

Academic discipline	Frequency	Percentage
Nursing	242	74%
Medicine	27	8.3%
Biology	15	4.6%
Biochemistry	4	1.2%
Biotechnology	1	0.3%
Exact sciences	1	0.3%
Mathematics	1	0.3%
Statistics	2	0.6%
Pharmacology	14	4.3%
Psychology	9	2.8%
Podiatry	2	0.6%
Veterinary science	1	0.3%
Dentistry	1	0.3%
Physiotherapy	1	0.3%
Education	1	0.3%
Records management	1	0.3%
Sociology	2	0.6%
Philosophy	2	0.6%

importance of teaching competencies that nursing teachers should have.

Population

The study population included all educators on the nursing degree, either nurses or educators from other subject fields, who taught in Spanish universities; a total of 3,571 educators from universities throughout Spain[21].

Inclusion criteria

- Educators on the nursing degree working in public, private and semi-private universities.
- Educators, who at the time of the study were active workers.
- Full-time educators or educators who combined classroom teaching and work in a healthcare facility.

Exclusion criteria

- Adjunct clinical professors, since they were nurses linked to the university who monitored students in hospitals, but their teaching activity was very limited.

Sample

Considering the study population of 3,571, the minimum sample necessary for the results to be significant was determined. Accepting an alpha risk of 0,02 and beta risk of 0,2 in a two-tailed test, 298 subjects were required to achieve their representativeness. Similarly, in order to obtain better representativeness, the participation of educators from universities throughout Spain was considered necessary.

In order to obtain the sample, a non-probabilistic sample was conducted. This model was selected due to the high

Table 2 Academic tittle/rank.

Academic title/rank	Frequency	Percentage
Professor	6	1.8%
Associate Professor	89	27.2%
Lecturer/Associate Professor	51	15.7%
Assistant Professor	29	8.9%
Lecturer	34	10.4%
Adjunct Professor	97	29.7%
Visiting Professor	4	1.2%
Interim Substitute Professor	13	3.9%
Predoctoral Fellow	2	0.6%
Postdoctoral Research Associate	2	0.6%

number of universities, their geographical distribution and the difficulty in gaining access to certain profiles, which are aspects that could undermine the appropriate design of other methodologies[22].

Socio-demographic variables: academic discipline, academic level, and type of university.

Instrument

A questionnaire, based on the map of competencies developed after a literature review[10,11,13,14,23–25], was created in order to achieve the results.

The teaching competences proposed in the questionnaire were classified as follows: systemic competencies, educational competencies, interpersonal competencies and disciplinary competencies. A series of defining principles were included for each competence, which explain the necessary skills to adequately implement them.

The coding of all the competencies was carried out in order to determine the degree of importance that teachers gave to each one of them. To do this, a Likert scale was used with the following rating system: 1 "not at all important" 2 "slightly important" 3 "important" 4 "fairly important" and 5 "very important".

Prior to the dissemination of the questionnaires, a formal pilot test was conducted that included the participation of 10 educators from different universities. It was aimed at determining the correct formulation and understanding of the questions, as well as their adaptation to the study population. The changes and suggestion proposed by this group were implemented.

A computer tool was designed through the Google Forms® platform to disseminate the questionnaires. In order to distribute them, emails were sent to the dean's office of different universities in Spain, requesting their dissemination among the educators.

Table 3 Type of university.

Type of university	Frequency	Percentage
Public university	192	58,7%
Private university	98	30%
State-subsidised university	37	11,3%

Dissemination of questionnaires

For distribution, the educators of the different Spanish university centres were contacted directly by getting access to the email addresses from the faculties' websites; they were sent an email presenting the study, which also included the link to the online questionnaire version.

Data coding and analysis

A Saphiro Wilk test for normality was carried out. The arithmetic mean and standard deviation were used as measures of central tendency and dispersion for quantitative variables. For categorical variables, absolute and relative percentage frequencies were used.

The measure of association between two categorical variables was performed using the Pearson $\chi 2$ test. Group comparison for quantitative variables was performed using the W Wilcoxon signed rank-test in the case of pairs of variables that did not meet the assumption of normality. For the analysis of several independent groups of quantitative variables that did not require the assumption of normality, the non-parametric Kurskal Wallis test was used. In the case that for a quantitative variable, the exposure variable had several ordered categories, the non-parametric Jonckheere-Terpstra test on trend was performed via Kendall's Tau-b ordinal correlation coefficient, in order to use the value of the magnitude of the correlation coefficient to indicate the strength of the association between variables.

Ethical considerations

The processing of information was carried out in line with the provisions of the Organic Law 3/2018 of 5th December, on Protection of Personal Data and Guarantee of Digital Rights. Participation was anonymous, voluntary and unpaid, and the ethical-legal precepts that protect the participants were explained in an information note included in the description of the questionnaire. The confidentiality of the participants in the study was preserved at all times, avoiding that any data could be associated with a particular individual. The Research Ethics Committee of the Pontifical University of Salamanca approved the study.

Results

Participants

The study included 327 questionnaires. Of the total number of participants, 221 (67,6%) were women, while 106 (31,5%) were men. The average age was 47,75 years (SD± 10,35), with a minimum of 25 years and a maximum of 75.

In relation to the academic level, 228 (69,72%) participants had a Doctoral Degree, 73 (22,32%) had a master's degree and 26 (7,95) had a Degree, Bachelor's Degree or a three-year Certificate (Diploma).

Educators' academic discipline is shown in Table 1.

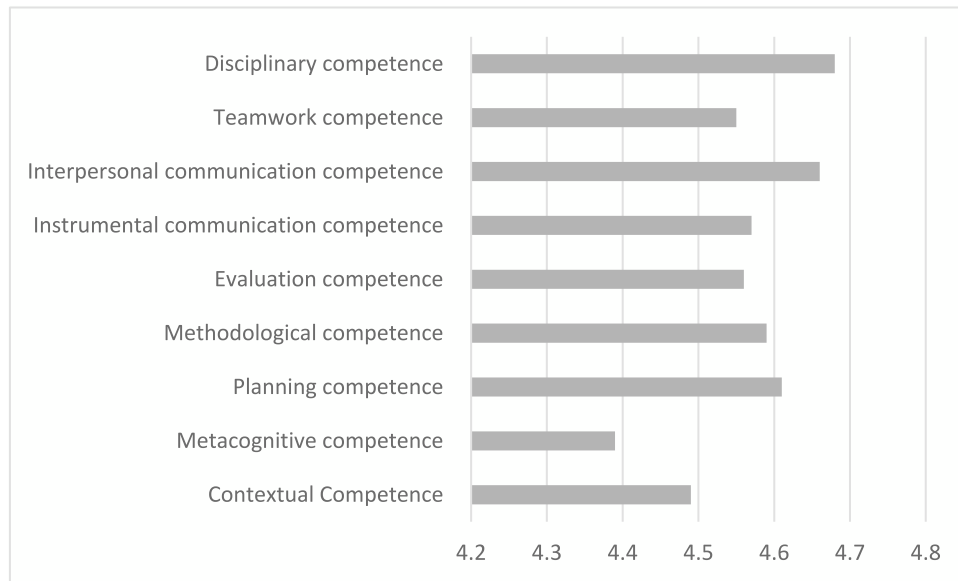Information regarding the academic tittle/rank is shown in Table 2.

Fig. 1   Importance of teaching competencies:

Information relating to the type of university is shown in Table 3.

Of the 327 participants who completed the study, 252 (77,06%) were not required to have any training in pedagogy or teaching to get a university teaching position, while 75 (22,94%) of them were indeed required to have some.

Finally, educators were asked if they had received teaching methodology training as part of the continuous training programme for educators in their universities. In this regard, 200 (61,16%) participants confirmed having received this type of training, while 127 (38,84%) participants answered in the negative to this question.

Teaching competencies

The following data shows the importance of teaching competencies:

Teaching Competencies:

The following data shows the definition and importance of teaching competencies:

- Systemic competencies: imply the skills and abilities related to autonomous learning, the development of creativity and the ability to adapt to new or changing situations.

  o Contextual Competence (4,49/5; SD ±0,59): the ability to incorporate the essential principles of the learning processes into educational practice, which while justifying the teaching model itself, allows teaching to be placed in the epistemological and sociocultural context of the subject being taught.
  o Metacognitive competence (4,39/5; SD ± 0,69): the ability to monitor, self-evaluate and reflect on one's own pedagogical praxis, by determining potential areas of weakness and establishing measures for improvement.

- Educational competencies: skills and knowledge related to the design and implementation of formative and evaluative strategies based on the educational needs of students, taking into account the different social, cultural and personal realities in the classroom.

  o Planning competence (4,61/5; SD ± 0,52): the ability to design and develop an academic programme, as well as teaching activities and other formative resources, tailored to the circumstances of the institution, the profession and society. To this end, the most relevant disciplinary contents that facilitate student learning are selected.
  o Methodological competence (4,59/5; SD ± 0,59): the ability to support and enhance learning and the development of personal and professional competencies in students through the implementation of appropriate methodological strategies, in coordination with pedagogical and ethical models suitable to each educational context and situation.
  o Evaluation competence (4,56/5; SD ± 0,57): the ability to develop a variety of strategies to monitor and evaluate the acquisition of knowledge and competencies by students, using different tools in line with the educational planning and learning goals.
  o Instrumental communication competence (4,57/5; SD ± 0,58) the ability to develop two-way communication processes properly and effectively. This implies the reception, interpretation, production and transmission of messages through different channels and means, in the context of the teaching-learning environment.

- Interpersonal competencies: individual abilities related to the expression of one's own feelings, critical and self-critical skills, and the social skills related to the ability to function as a team member, as well as the expression of a social commitment to cooperate.

  o Interpersonal communication competence (4,66/5; SD ± 0,54): the ability to establish communication processes that promote students' critical thinking, motivation and confidence, by acknowledging their

Table 4 Scores obtained in all defining principles of each competence.

Competence	Principles that define this competence	Importance
Contextual competence	Analyse the teaching-learning context in order to identify needs for improvement and apply innovative strategies and/or resources in the subject taught.	4,5 (SD ± 0,7)
	Maintain a permanent ability to adapt to new institutional, academic and social contexts.	4,6 (SD ± 0,6)
	Work to meet the requirements for the different tasks and challenges that arise in the teaching profession.	4,5 (SD ± 0,1)
	Demonstrate in all actions an ethical commitment, transparency and confidentiality.	4,8 (SD ± 0,5)
	Develop a reflective and critical thinking of the educational reality.	4,8 (SD ± 0,5)
	Actively participate in teaching improvement and innovation projects and experiences.	4,4 (SD ± 0,8)
Metacognitive competence	Reflect and research on one's own teaching practice and performance, in order to seek new strategies that allow their modification and continuous improvement.	4,6 (SD ± 0,6)
	Implement techniques and instruments for the self-assessment of the role of the teacher.	4,4 (SD ± 0,7)
	Determine one's own training needs to improve teaching.	4,6 (SD ± 0,6)
	Know and participate in external evaluation processes of the teaching activity, following a continuous improvement model.	4,3 (SD ± 0,8)
Planning competence	Analyse and detect students' previous knowledge and their learning expectations.	4,3 (SD ± 0,7)
	Select and define objectives, competencies and contents of the subject according to the importance they have in the degree, as well as in the personal and professional profile of future graduates.	4,6 (SD ± 0,5)
	Plan theoretical and practical activities for content development, the acquisition of competencies and the achievement of objectives.	4,7 (SD ± 0,5)
Methodological competence	Implement methodological strategies that foster the join responsibility of students in their own learning.	4,6 (SD ± 0,6)
Competence	Principles that define this competence	Importance
Methodological competence	Use active and participatory methodologies in the classroom.	4,7 (SD ± 0,6)
	Foster peer interaction and student cooperation as a teaching/learning strategy.	4,5 (SD ± 0,6)
	Manage the appropriate spaces, resource and time for the proper development of the teaching activity.	4,6 (SD ± 0,3)
	Select and incorporate the use of information technologies in teaching and learning processes.	4,7 (SD ± 0,3)
	Design methodological strategies taking into account the diversity of students and their context.	4,4 (SD ± 0,7)
Evaluation competence	Design and implement different evaluation processes (continuous and final) according to the learning goals and the student's acquisition of the required competencies in the subject.	4,6 (SD ± 0,6)
	Support academic tutoring for students, in order to optimize the development of their academic tasks and the scores in their tests.	4,4 (SD ± 0,7)
	Provide continuous feedback to improve student self-directed learning.	4,6 (SD ± 0,6)
Instrumental communication competence	Organize the discourse according to the characteristics of the context, the message and the target audience.	4,6 (SD ± 0,7)
	Express oneself orally in an appropriate and clear manner, using the scientific-technical language of the subject in the context of the classroom, tutoring or evaluation test.	4,7 (SD ± 0,0)
	Guarantee a correct written communication by using the standards and the vehicular language adequately, as well as the scientific-technical language of the subject.	4,7 (SD ± 0,5)
	Facilitate the understanding of discourse contents by using definitions, reformulations, examples and repetitions.	4,6 (SD ± 0,6)
	Manage the use of voice, intonation, emphasis and respiration for good phonation.	4,5 (SD ± 0,7)
	Use non-verbal language properly.	4,5 (SD ± 0,7)
	Identify instrumental communication barriers in the educational context, and suggest improvement strategies that allow for a good instrumental communication with students.	4,5 (SD ± 0,6)

Table 4 (*continued*)

Competence	Principles that define this competence	Importance
Interpersonal communication competence	Provide areas where students can freely express their opinions about the subject, the teaching or their own learning, gather this information and provide an appropriate response.	4,5 (SD ± 0,6)
Competence	Principles that define this competence	Importance
Interpersonal communication competence	Express thoughts, opinions and emotions assertively, in a way that facilitates the understanding of what is to be conveyed and show respect for others.	4,6 (SD ± 0,6)
	Listen actively to understand each other's point of view.	4,7 (SD ± 0,5)
	Negotiate with other people knowing how to transmit confidence and security.	4,5 (SD ± 0,6)
	Show tolerance towards other points of view and actions, as long as they do not endanger the integrity of persons and societies.	4,7 (SD ± 0,5)
	Create an environment of empathy during interpersonal communication.	4,7 (SD ± 0,0)
	Identify the speaker individual needs during the process of interpersonal communication.	4,6 (SD ± 0,6)
	Respect cultural diversity and its implications during the process of interpersonal communication.	4,7 (SD ± 0,1)
	Identify interpersonal communication barriers in the educational context, and suggest improvement strategies.	4,6 (SD ± 0,6)
Teamwork competence	Lead, manage and/or coordinate teaching teams vertically and horizontally.	4,3 (SD ± 0,7)
	Delegate and/or distribute tasks according to competence criteria within the team.	4,3 (SD ± 0,7)
	Assume the responsibility taken and accomplish the tasks assigned efficiently, in order to achieve the objectives set by the team.	4,6 (SD ± 0,6)
	Follow up on the tasks and activities developed within the team, and suggest the necessary changes to achieve the objectives.	4,5 (SD ± 0,6)
	Foster self-assessment processes within the team, as a step for the introduction of new paths and improvements.	4,4 (SD ± 0,7)
	Have the ability to work in teams with experts, teacher in the same or different subject fields, and in both, national and international contexts.	4,5 (SD ± 0,7)
	Have the ability to face and resolve conflicts and problems that may arise in the team.	4,6 (SD ± 0,6)
Disciplinary competence	Maintain a permanent updating of nursing disciplinary knowledge.	4,8 (SD ± 0,0)
Competence	Principles that define this competence	Importance
Disciplinary competence	Master research methodology in care and evidence based nursing.	4,7 (SD ± 0,6)
	Have a high level of clinical reasoning skills.	4,6 (SD ± 0,6)
	Implement nursing methodology and taxonomy in care management.	4,2 (SD ± 0,9)
	Have an in-depth knowledge of the elements of clinical quality and safety management.	4,4 (SD ± 0,7)
	Have skills and knowledge in Advanced Clinical Simulation methodology.	4,4 (SD ± 0,8)

cultural diversity and individual needs. Thus, an environment of empathy and ethical commitment with students and peers is developed.

o Teamwork competence (4,55/5; SD ± 0,61): the ability to collaborate and participate as a member of a group, taking responsibility and being committed to the tasks and functions assigned, in order to achieve common objectives by following the agreed procedures and taking into account the available resources.

- Disciplinary competence (4,68/5; SD ± 0,48): the ability to perform the activities inherent to the nursing profession with the maximum efficiency, quality and security, demonstrating a high level of knowledge and skills related to the subject field. This last competence was only assessed in nursing educators.

The importance given by professors to each of the competences can be seen in Fig. 1.

A series of defining principles were included for each competence, which explain the necessary skills to adequately implement them. All of them are included in the questionnaire model and the scores obtained in all defining principles of each one can be seen in Table 4.

Finally, participants were asked to organize competencies hierarchically by establishing a score from 1 (most important competence) to 9 (least important competence), with methodological competence being the most important, followed by the disciplinary.

The hierarchical organization of the teaching competences according to the priorities of the participants can be seen in Fig. 2.

Discussion

A university educator must be qualified for the theoretical, deep and critical analysis of the educational phenomena
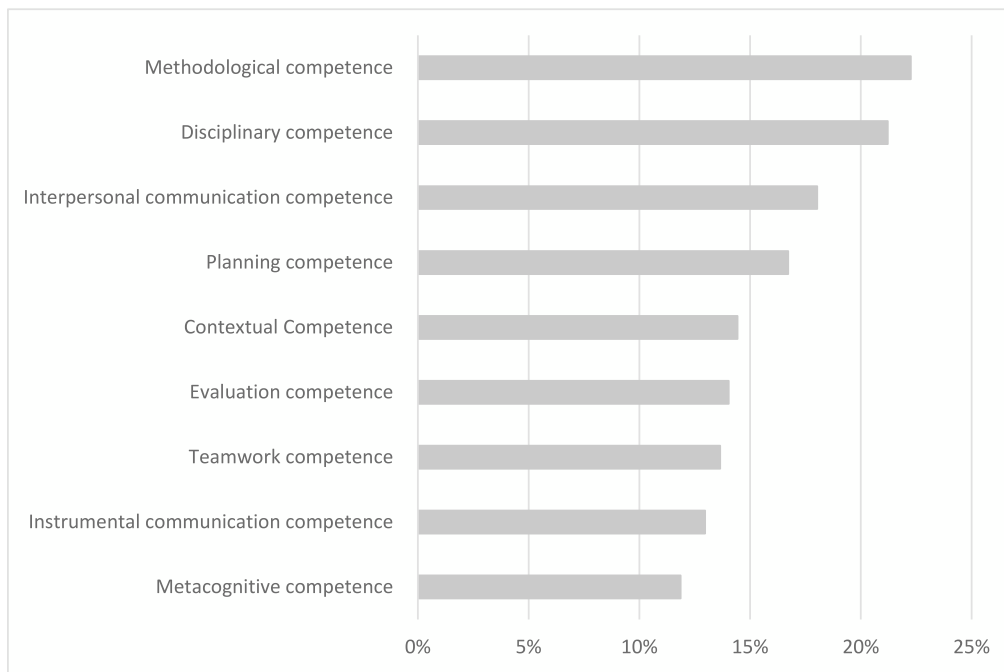
Fig. 2   Hierarchical organization of teaching competencies

related to his/her subject. This fact will allow him/her to design the context, policies and teaching processes, creating optimal conditions not only for the academic development of the students, but also for their moral and personal growth[26–28]. In order to perform his/her work, it is necessary to develop appropriate teaching competencies, especially when, as indicated above, university educators usually get a teaching position without previous pedagogical or educational training. Sometimes, these educators come from other professional areas, mainly from the healthcare activity, and this fact certainly must cause or imply some limitations in the teaching activity they perform[29,30].

In the context of nursing science, not much research has been addressed to the professional knowledge of nursing in educators' work[8,13]. Furthermore, there has been much less research on non-nurse faculty teaching this discipline, whose involvement in the training of future nurses is essential.

As a consequence, this model of teaching competence for nurse educators has been introduced. With respect to the results of the model, it is worth mentioning the broad consensus achieved among all the participating educators, in addition to the major importance they generally gave to all the proposed competencies. Both aspects lead to consider the wide validity and acceptance of this competence map by the participating nurse educators.

The scores obtained showed that disciplinary competence stands out for nurse educators. This competence is essential and was also included in all models consulted, since it allows transmitting students the theoretical-practical knowledge of the subject, as well as clinical skills[2,11,13]. On the other hand, the assessment obtained in communication competence and methodological competence is noteworthy. These findings are consistent with the reality of the teaching practice, with research being conducted on the effects

teachers' effective communication has on their students. When students feel accepted by their teachers or integrated into the classroom, they are more motivated, confident, and inclined to participate in class. They also feel better mentally, which can even improve their academic performance[31,32] In addition, it is essential for teachers to have a high level of knowledge in teaching methodology, which allows them to deploy the teaching-learning process with the highest quality, thus providing their students with all the knowledge and skills necessary to acquire their maximum potential both professionally and personally[33].

Finally, it is also noteworthy that contextual competence is not explicitly considered in those models already published, given that many of these educators get a university teaching position from the healthcare environment and therefore they need to acquire knowledge about the university environment and its processes[16]. The same applies to metacognitive competence, which was not found in the models cited above, although it is essential for educators to have the ability to self-evaluate their activity in order to introduce improvement strategies as well.

The design of the competence map is meant to be the basis for the development of training plans that provide nurse educators with knowledge in pedagogy and quality teaching methodology, enough to standardise the teacher education that these professionals receive.

Nurse educators participating in the study generally considered the teaching competencies included in the model as very important. Furthermore, an intra-class correlation index very close to 1 was obtained, which shows a high degree of agreement among all the participants. For all those reasons, it is considered that the proposed model of teaching competencies for nurse educators is appropriate and meets the needs of these

professionals in terms of pedagogy and teaching methodology. Therefore, it should be considered as a tool for the development of future training plans.

Limitations of the study

It is worth highlighting the limitation derived from the methodology used to access the sample which, despite having obtained a sufficient number of participants, does not allow us to speak reliably of statistical significance for the study population. Likewise, when interpreting the results, it should be taken into account that the instrument used is self-developed and has not been validated.

Conflicto de intereses

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.edumed.2023.100794.

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