The teacher in Early Childhood Education facing inclusive education: competencies and needs

El maestro en Educación Infantil ante la educación inclusiva: competencias y necesidades

面对全纳教育的幼儿教育教师：能力与需求

Педагоги дошкольного образования и инклюзивное образование: компетенции и потребности

Nuria Rebollo-Quintela
University of A Coruña
nuria.rebollo@udc.es
https://orcid.org/0000-0001-9026-0794

Luisa Losada-Puente
University of A Coruña
luisa.losada@udc.es
https://orcid.org/0000-0003-2300-9537

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Abstract

Initial Teacher Education (ITE) must be studied in line with the changing and diverse reality of schools. The qualification of future early childhood teachers will depend on their mastery of theoretical and practical knowledge and the importance they attach to having this knowledge available in their professional practice. The present study analyses the degree of mastery and relevance that students give to the competences in attention to diversity acquired during their university education and the perceived training needs.

Under a mixed methods research approach and a sequential explanatory design, the Professional Profiles Questionnaire of the Degree in Early Childhood Education was designed and applied to 141 students of the University of A Coruña, in the 3rd and 4th year

A positive appraisal of the ITE in attention to diversity was observed, although the degree of mastery was lower than the relevance given in all the dimensions studied. The presence of ongoing training needs was noted, especially in the areas of diagnostic knowledge and cooperation between professionals; in addition, a more practical orientation of learning was demanded, both directly and indirectly, and in disciplinary theory.

Everything point to the need to introduce improvements in the ITE by incorporating more practical contents, together with the search for greater commitment of students and practicing teachers to continuous training that will allow them to adapt their actions to each new challenge and demand of the changing society.

Keywords: preschool teacher education, university students, teacher qualifications, attention to diversity.

Resumen

La formación inicial del profesorado (FIP) debe estudiarse de acuerdo con la realidad cambiante y diversa de las escuelas. La capacitación de futuros docentes en educación infantil dependerá de su dominio de conocimientos teórico-prácticos y de la importancia que ofrezcan a disponer de dichos saberes en su ejercicio profesional. El presente estudio analiza el grado de dominio y relevancia que el alumnado otorga a las competencias en atención a la diversidad adquiridas durante su formación universitaria y a las necesidades formativas percibidas. Bajo el enfoque de investigación de métodos mixtos y un diseño secuencial explicativo, se diseñó el Cuestionario de Perfiles Profesionales del Grado en Educación Infantil, y se aplicó a 141 estudiantes de la Universidade da Coruña, de 3º y 4º curso. Se observó una valoración positiva de la FIP en atención a la diversidad, aunque el grado de dominio fue inferior a la relevancia concedida en todas las dimensiones estudiadas. Se evidenció la presencia de necesidades de formación permanente, sobre todo, en los ámbitos del conocimiento sobre diagnóstico y de cooperación entre profesionales; además, se reclamó una orientación más práctica del aprendizaje, tanto de forma directa como indirecta, y en la teoría disciplinaria.

Todo apunta a la necesidad de introducir mejoras en la FIP incorporando contenidos más prácticos, junto con la búsqueda de mayor compromiso del alumnado y maestros en ejercicio con la formación continua que les permita adecuar sus actuaciones a cada nuevo reto y exigencia de la sociedad cambiante.

Palabras clave: formación de docentes de preescolar, estudiante universitario, competencias del docente, atención a la diversidad.

概要

我们应该根据不断变化的现实和学校的多样化对初始教师培训 (ITE) 进行研究。未来幼儿教育教师的培训将取决于他们对理论和实践知识的掌握程度, 以及他们在专业实践中对掌握这些知识的重视程度。本研究分析了学生对在大学教育期间获得的对多样性的关注的能力以及对该培训需求掌握程度的感受和相关性。我们应用了混合方法研究方法和解释性序列设计, 制作了幼儿教育学位专业概况问卷, 并将其应用于拉科鲁尼亚大学 3 年级和 4 年级的 141 名学生。研究观察到对 ITE 在关注多样性方面的积极评价, 尽管掌握程度低于所研究的所有维度的相关性。证明对永久性培训需求的存在性, 特别是在诊断人员和专业人员之间合作的知识领域; 此外, 研究直接和间接指出在学科理论中都需要更实用的学习导向。

一切研究结果表明了对 ITE 进行的改进需求, 应该纳入更多实用内容, 同时寻求对学生和执业教师的更大承诺, 并通过持续培训使他们能够调整自己的行动以适应不断变化的社会的每一个新挑战和需求。

关键词：学前教师培训, 大学生, 教师能力, 对多样性的关注。

Аннотация

Начальное педагогическое образование (НПО) должно изучаться в соответствии с требованиями меняющейся и разнообразной реальности школ. Подготовка будущих педагогов дошкольного образования будет зависеть от того, насколько они овладеют теоретическими и практическими знаниями и какое значение они придают наличию этих знаний в своей профессиональной практике. В данном исследовании анализируется степень освоения и значимость компетенций в области внимания к разнообразию, приобретенных студентами во время обучения в университете, а также предполагаемые потребности в обучении. Используя смешанный метод исследования и последовательный разъяснительный метод, был разработан и применен опросник профессиональных профилей по специальности "Воспитание детей младшего возраста", в котором приняли участие 141 студент Университета A Coruña на 3-м и 4-м курсах. Была отмечена положительная оценка НПО в отношении внимания к разнообразию, хотя степень освоения была ниже, чем соответствие, указанное во всех изученных измерениях. Были получены свидетельства необходимости дальнейшего обучения, особенно в области диагностических знаний и сотрудничества между специалистами; кроме того, прозвучал призыв к более практической ориентации обучения, как прямого, так и косвенного, и дисциплинарной теории.

Все указывает на необходимость внесения усовершенствований в НПО путем включения более практического содержания, наряду с поиском большей приверженности студентов и практикующих преподавателей к непрерывному обучению, которое позволит им адаптировать свои действия к каждому новому вызову и требованию меняющегося общества.

Ключевые слова: дошкольное педагогическое образование, студенты университета, компетенции педагога, внимание к разнообразию.

Introduction

Initial teacher education (ITE) at the University is a topic of wide interest in the international scientific community. Some recent studies have sought to investigate how students assess how they are acquiring their competencies at the theoretical-practical

level (Furlong, 2019; Niemi et al., 2016; Pascual-Arias & Molina-Soria, 2020). Others have emphasized the shortcomings of the ITE and the importance of lifelong learning (Arnon & Reichel, 2007; Centro Autonómico de Formación e Innovación [CAFI], 2017; Furlong, 2019). Finally, it is noteworthy the studies that not only focused on the overall competencies related to ITE, but also on those more specific, such as those related to attention to diversity and educational guidance (Cejudo et al., 2016; Domínguez & Vázquez, 2015; Rodríguez-Hernández, 2019).

Special attention should be paid to the competencies to promote inclusive education in the classroom given the need to "get adapted to a new professional profile that responds to the diversity of people and contexts" (Fernández-Jiménez et al., 2019, p.498). Therefore, this study has been carried out to provide evidence to answer a series of questions related to ITE in attention to diversity: what is the students' perception of their mastery of the competencies in attention to diversity acquired throughout their training? How important are these skills for their job performance? To what extent are the assessments of their degree of mastery in line with the degree of relevance they give them? What could be the reason for these results in terms of mastery and relevance? What training needs do they detect in their initial training in relation to attention to diversity?

Initial Teacher Education (ITE) in Early Childhood Education

University education trains future teachers in theoretical (generic and broad knowledge of their discipline) and didactic (methodology and individualized teaching approach) knowledge but, above all, in the improvement of their personal qualities (attention, empathy, leadership skills, aptitude towards profession) (Arnon & Reichel, 2007). The most recent research investigates the weight of theoretical and practical aspects in teacher education (Furlong, 2019; Niemi et al., 2016; Tang et al., 2015), the perception of in-service and pre-service teachers as competent educators (Klug et al., 2015; Hatlevik, 2017), or the reflection on what would be an ideal teacher (Arnon & Reichel, 2007) and a good tutor (García-Bracete et al., 2005), as well as on how the different approaches and the quality of teacher training programs in early childhood education are key aspects in early childhood schooling (Concha et al., 2019). Generally, these studies emphasize the importance attached to ITE, but also the demand for more practical training, which is often only reached when entering the workplace (Pascual-Arias & Molina-Soria, 2020; Rodríguez-Gómez et al., 2017; Tang et al., 2015).

Thus, the conjunction between theoretical knowledge, practical skills and self-confidence are considered interconnected and necessary aspects for effective teaching (Hatlevik, 2017). Facing a changing and diverse reality such as that of schools, the teacher should be capable of putting learning into practice, adapting it to the heterogeneity of the students, to the diversity of interests and motivations, in order to design effective environments that deal with the needs of all students (Klug et al., 2015; Sales et al., 2001). A key element of the ideal teacher is that he/she approaches his/her students as individuals, respects the differences among students, provides them with opportunities and guidance, and tries to encourage their participation (Arnon & Reichel, 2007).

The Spanish University System offers a four-year ITE with a total of 240 ECTS through which it aims to contribute to the student's initial professional exercise ("induction") and continuous professional development. This training responds to a repertoire of teaching standards, policies, and framework documents, as well as professional prac-

tices (Keary et al., 2020); however, as stated in the document prepared by the Autonomous Center for Training and Innovation (CAFI, 2017):

> no initial teacher education program, however good it may be, can equip teachers with all the competencies they will need throughout their careers. The demands of the teaching profession are changing rapidly, requiring new approaches to deliver fully effective teaching and being able to adapt to the evolving needs of learners (p. 9).

It is otherwise expressed by Furlong (2019) in reference to the international context, noting that governments have adopted the view that "higher education cannot be trusted to deliver what is needed but teacher education is too important to be left alone" (p. 576). In the same line is reflected by Concha et al. (2019) with respect to Latin America and the Caribbean by insisting on the importance of improving the quality of teacher education to contribute to improved student outcomes. These ideas have been supported by in-service teachers by stating that University teacher training can be understood as a formality because it is in the exercise of the profession that one really learns to be a teacher (Paredes-Labra & Kachinovsky-Melgar, 2021) and by international researchers such as Hanushek and Rivkin (2006) who give great weight to experience as opposed to teacher training.

In recognition of this, some educational administrations develop continuous training programs that attempt to alleviate the deficits perceived in new teachers' initial education. Knowledge renewal and research are qualities of the ideal teacher, as well as the ability to give guidance and individualized attention to students (Arnon & Reichel, 2007). However, caution is required when analysing and providing a solution to the teacher training problem. Addressing the solution to this shortfall once the teacher is in service may cause an additional problem. The lack of contact with schools during their ITE can lead them to the so-called praxis shock (Klug et al., 2015), that is, to great difficulties among new teachers during their first years due to the existence of a tension between their identity as teachers, their ideals, roles and opinions acquired and developed during their university years, and what happens in everyday realities upon their entry into schools (Arnon & Reichel, 2007). They have not yet formed a complete picture about themselves as teachers, and they may face a reality in the classroom that does not match their expectations, which may have an impact on their motivation and attitude (Klug et al., 2015; Sales et al., 2001).

For Furlong et al. (cited in Furlong, 2019), the solution must go beyond a theory-in-practice model, recognizing four basic levels of teacher education:

a. Direct practice: (it involves) the development of those types of practical understanding, judgement and skill (...) through direct experience in the classroom; (...), in the specific context of classrooms themselves.

b. Indirect practice: (also includes) practical understandings, judgement and skills but do so in a much simplified context, separate from the world of practice itself i.e in the university seminar room.

c. Practical principles: knowledge of evidence (from research, from practices elsewhere); here it is essential that university teachers offer their knowledge based on their practical experiences in the field.

d. Disciplinary theory: (theoretical bases that) can help (future teachers) critically examine and make explicit the values and theoretical assumptions behind those professional practices. (p.581)

It is a matter of providing students with meaningful learning, either through contents of a more theoretical or disciplinary nature (c and d), or through experimentation (a and b). As Martínez et al. (2019) point out, improvements must be made to the teaching-learning process in the university context in order to achieve an "adequate transition to active life for students" (p. 70).

Training in Attention to Diversity

A topic of particular relevance in the ITE of Early Childhood Education teachers is the preparation of university students in inclusive education (Rodríguez-Hernández, 2019) since, as Durán and Giné (2017) point out, when they later become classroom teachers, they will be responsible for providing an educational response to the students.

This concern for initial training in inclusive education has also been highlighted since 2007 by the European Commission, which has set out among the five major competencies to be acquired by teachers:

   a. "identify the specific needs of each individual learner, and respond to them by deploying a wide range of teaching strategies; d) work in multicultural settings (including an understanding of the value of diversity, and respect for difference)" and " work in close collaboration with colleagues, parents and the wider community" (Prats, 2016, p. 22).

Several studies reveal the existence of training gaps to be covered in different contexts of the Spanish territory (Cejudo et al., 2016; Fernández Jiménez et al., 2019; Madrid et al., 2020), or compared to Latin America (Vélez-Calvo et al., 2016) and, specifically, in Galicia (Domínguez & Vázquez, 2015), either in basic or complementary training. However, the results obtained are scarce by focusing the analysis on a single subject of the degree, or not directly alluding to the competencies to be acquired by future teachers.

On the one hand, in the comparative study between several subjects of the degrees of Early Childhood Education, Social Education and Pedagogy, it was found that the training of future Early Childhood Education teachers was significantly lower in competencies related to empathy towards people with disabilities, sensitivity towards their needs and knowledge of their learning difficulties (Fernández-Jiménez et al., 2019). Moreover, Cejudo et al. (2016) identified, both in the students of the Degree in Early Childhood Education and in Primary Education, a high valuation of training in attention to diversity and a moderate training need, although higher in the case of Primary Degree students. Vélez-Calvo et al. (2016) after a comparative analysis of nearly 300 curricula in public and private universities in Spain and Ecuador, stated that the subjects aimed at addressing inclusive education in initial teacher education are insufficient to "consolidate basic knowledge, change attitudes and adopt new teaching methods" (p.88).

On the other hand, Domínguez and Vázquez (2015) focus on the analysis of continuous teacher training, verifying the evolution in the number of attention-to-diversity-related activities offered to in-services teachers through different modalities (courses, conferences, training projects, working groups or seminars). Thus, they highlight the importance that this agent offers to continuous training, whilst revealing possible training shortcomings to address student diversity in the event of a lack of such training. Madrid et al. (2020) also focused on studying the training needs of in-service teachers in inclusive education, pointing out that, for this figure, the improvement in their capacity to respond to student diversity will depend on greater specific training;

greater support, advice and attention from specialized teams for classroom work and to cover functions that the teacher cannot perform (e.g. detection); greater collaboration, commitment and coordination with families; as well as a lower ratio, more human and material resources.

Based on the above, the objective of this research was to study the perceptions of university students about the degree of mastery and relevance they give to their competencies in relation to inclusive education for their future as Early Childhood Education teachers, as well as to detect needs in their initial training. It was carried out in the city of A Coruña (Galicia, Spain), within the framework of a pilot study on the competency profile of the Early Childhood Education teacher that is being conducted at the Universidade da Coruña (UDC). Note that the Autonomous Government is committed to improving teaching competencies for this profile through lifelong learning (CAFI, 2017). Thus, to respond to this general objective, several specific objectives were raised:

a. To analyse the level of mastery and relevance that students give to competencies related to inclusive education.

b. To compare the degree of relationship between the perception of having these competencies (mastery) and the importance given to them (relevance).

c. To explore the students' subjective perception of the needs detected in their initial training regarding attention to diversity.

Methods

An explanatory sequential design (Cresswell & Plano-Clark, 2017) was employed under the mixed methods research approach. The predominant framework was quantitative, and qualitative aspects were incorporated to explain in detail the initially quantitative results (Cresswell & Cresswell, 2018), being integrated in the discussion of results. A questionnaire was designed to identify the level of mastery and relevance of competencies in attention to diversity. A qualitative question was included. It was related to their perception of the needs detected in their initial training regarding attention to diversity and with this, the possibility of improving their competency profile.

Participants

The population consisted of students in the 3rd and 4th years of the Degree in Early Childhood Education at the Universidade da Coruña (UDC). The data collection was carried out in the university classrooms of the Faculty of Education Sciences. All students were invited to participate voluntarily and anonymously. The application of the instrument was carried out with the presence of the researchers in the setting in order to increase the rate of students participation.

A sample of 141 students was obtained, aged 22-25 years (M = 22.5; SD = .29), from 3rd (n = 84; 58.7%) and 4th year (n = 59; 41.3%), being mostly females (n = 131; 90.97%) versus males (n = 13; 9.03%). A 29.5% (n = 39) of the students had previous training in Early Childhood Education (mostly Vocational Training in Early Childhood Education or in Sociocultural Animation). The other 70.5% (n = 93; excluding 12 missing cases) accessed the University through Baccalaureate (n = 82; 62.1%), Vocational Training in non-educational areas (n = 8; 5.6%) or through other university studies (n = 3; 2.1%).

In relation to previous experience in Early Childhood Education, 16 students (11.4%) reported having previously worked as early childhood educators and 124 (88.6%) did not. There were four missing values. In addition, 118 students indicated having completed the curricular one-month curriculum externship, compared to 24 students (16.9%) who had not yet done so; while 56 (36.4%) had completed three-month internships and 86 (60.6%) had not. The relevance of these data lies in the fact that it evidenced that a good part of the participants had previous training, pre-service or work experience, which allowed them to formulate their answers based on their training prior to the degree, as well as in relation to what they considered was expected of them in the labour market.

Instrument

The Questionnaire of Professional Profiles of the Degree in Early Childhood Education (CUPERCOM_GEI) was used. This instrument was designed ad hoc for this research, using the competencies present in the Report of the Degree in Early Childhood Education.

It is a self-administered questionnaire, composed of 17 items, to be evaluated through a 6-point Likert scale (1: not at all, and 6: very much) where the students had to respond to their agreement or disagreement regarding the degree of mastery and relevance of the competencies in attention to diversity in the ITE, as well as a final open question where the students were asked to evaluate how they consider that the profile of competencies of the Degree in Early Childhood Education could be improved in relation to these aspects.

The closed-response items of the questionnaire were grouped according to their meaning in several areas or dimensions to facilitate the analysis. These were: diagnosis of special educational needs; resources and strategies to attend to diversity; students' developmental and learning characteristics; and communication and coordination between educational agents (see the dimensions and their associated items in Table 2).

The reliability of each of the dimensions of the instrument was tested, both for the mastery and for relevance, as well as the overall reliability (see Table 1).

Table 1

CUPERCOM_GEI dimensions: number of items and reliability of its dimensions in the area of mastery and relevance.

	Nº items	Mastery	Relevance
Diagnosis of special educational needs	3	.78	.80
Resources and strategies to attend to diversity	5	.79	.87
Students' developmental and learning characteristics	5	.75	.85
Communication and coordination among educational agents	4	.70	.84
Total	17	.92	.95

As shown in Table 1, the reliability analysis reported good values in each of the dimensions of the questionnaire, both for mastery and, above all, for relevance. The overall reliability was excellent in both cases (α > .90).

Procedure for data collection and analysis

Once all the data had been collected through the questionnaires, we proceeded to the analysis in two steps:

a. Quantitative treatment of the closed-response items was performed with the help of the IBM SPSS version 27 Statistical Package IBM SPSS version 27. The instrument data were dumped into an SPSS matrix and descriptive and inferential analyses were performed. Specifically, central tendency and dispersion analyses were run at the beginning of the study; subsequently, the t-test for related samples was used to verify possible discrepancies between the mastery and relevance of the competencies. Parametric statistics were applied given compliance with homogeneity of variances (Levene: p > .001). A confidence level of 95% (p < .05) was established to determine the presence of statistically significant differences. The effect size was calculated using the GPower program. Considering Cohen's conventional values for d, an effect size was considered small when d = .2, medium when d = .5 and large when d = .8 or higher.

b. The qualitative treatment of the open-ended question was carried out using the MAXQDA v.20 program. The inductive logic was followed, in which the information was reduced (by establishing units of meaning: codes and categories), the data were arranged by means of graphic representations and the conclusions were drawn, following a flow between these three phases of the process (Miles & Huberman, as cited in Sabariego-Puig et al., 2014).

Results

The results obtained from the descriptive analysis (central tendency and dispersion) and inferential analysis (T-test for related samples) of the quantitative data of the instrument, as well as from the inductive analysis related to the open-ended question of the questionnaire, are presented below.

Analysis of the mastery and relevance of competencies in attention to diversity

Table 2 shows the results of the exploration of the individual measures of each item, as well as the dimensions created to integrate them together. Generally, high values were observed in all items and dimensions (above 3 points), both in the areas of mastery and relevance. In the comparative study, the dimension with the highest values was *Resources and strategies to deal with diversity*, with an average score ranging from 3.62 to 4.5 in mastery and between 5.27 and 5.59 in relevance. Similar values were obtained for the students' developmental and learning characteristics, with one tenth below for both mastery and relevance. Moreover, similar values were obtained in-between the dimensions of *Diagnosis of special educational needs* and *Communication*

and coordination between educational agents, and slightly less than half a point below the previous ones.

All the differences between dimensions were statistically significant in the area of mastery ($p < .001$), with a large effect size ($d < .08$), but in the case of relevance, the only statistically significant difference was between *Resources and strategies to address diversity* and *Diagnosis of special educational needs*, in favour of the former ($p = .048$), with a small effect size ($d = .17$).

The results obtained in each dimension, presented in Table 2, show that all of them obtained higher scores in relevance rather than in mastery, as well as a lower dispersion of responses. The dimension *Communication and coordination between educational agents* stood out, where the mean differences reached 1.71 points, in favour of relevance, followed by *Diagnosis of special educational needs needs* with 1.66 points of difference, and the rest of the dimensions, both with mean differences of 1.38 points in favour of relevance. T-test evidenced the presence of statistically significant differences in favour of relevance ($p < .001$) versus the mastery, with a large effect size (greater than the unity in all dimensions).

Table 2

Descriptive statistics and t-test for the dimensions and items of the CUPERCOM_GEI: mastery and relevance analysis.

	Mastery			Relevance			T-test			
	n	*M*	*SD*	*n*	*M*	*SD*	Differences		*t*	*d*
							M	*SD*		
Diagnosis of special educational needs	144	3.63	1.04	144	5.33	.93	-1.71	1.33	-15.42*	1.29
Identify learning difficulties, cognitive dysfunctions and those related to attention.	143	3.59	1.16	142	5.28	1.13	-1.67	1.53	-12.97*	1.09
Identify disorders in sleep, feeding, psychomotor development, attention, and auditory and visual perception.	143	3.83	1.23	144	5.38	1.02	-1.53	1.52	-12.02*	1.01
Detect affective, nutritional and well-being deficiencies that disturb the adequate physical and psychological development of students.	141	3.45	1.35	142	5.38	1.12	-1.92	1.57	-14.51*	1.22

	Mastery			Relevance			T-test			
Resources and strategies to attend to diversity	144	4.02	.91	144	5.40	.82	-1.38	1.09	-15.42*	1.26
Acquire resources to favour the educational integration of students with difficulties.	141	3.62	1.28	141	5.33	1.11	-1.70	1.55	-12.95*	1.09
Attend to the students' needs and transmit security, tranquillity and affection.	143	4.30	1.29	143	5.59	.81	-1.29	1.32	-11.76*	.98
Know and manage the exercise the functions of tutor and guide in relation to family education.	142	3.80	1.14	143	5.27	1.07	-1.47	1.47	-11.92*	1.01
Acquire a practical knowledge of the classroom and its management.	137	3.91	1.21	137	5.39	1.00	-1.47	1.45	-11.90*	1.02
Understand that the daily dynamics in early childhood education is changing depending on each student, group and situation and know how to be flexible in the exercise of the teaching function.	139	4.50	1.19	140	5.44	.95	-.91	1.20	-8.90*	.76
Students' developmental and learning characteristics	144	4.01	0.84	144	5.39	.71	-1.38	.99	-16.81*	1.40
Know the developmental psychology of childhood in the periods 0-3 and 3-6.	144	4.34	1.07	144	5.54	.75	-1.20	1.14	-12.60*	1.05
Know the fundamentals of early care.	141	3.61	1.42	141	5.40	.98	-1.78	1.58	-13.47*	1.13

	Mastery			Relevance			T-test			
Know the pedagogical dimension of interaction with peers and adults and manage to promote participation in group activities, cooperative work, and individual effort.	144	3.85	1.24	144	5.27	.96	-1.42	1.42	-11.96*	.99
Recognize the identity of the stage and its cognitive, psychomotor, communicative, social, and affective characteristics.	143	4.20	1.12	143	5.43	.89	-1.23	1.25	-11.73*	.98
Understand the educational and learning processes in the 0-6 period, in family, social and school contexts.	144	4.02	1.05	143	5.31	.94	-1.29	1.23	-12.56*	1.05
Communication and coordination between educational agents	144	3.64	.96	144	5.35	.88	-1.71	1.17	-17.59*	1.46
Create and maintain communication links with families to effectively influence the educational process.	144	4.11	1.39	144	5.50	.89	-1.38	1.41	-11.77*	.98
Know how to work as a team with other professionals inside and outside the centre in the attention to each student, as well as in the planning of learning sequences and in the organization of work situations in the classroom and play space, identifying the peculiarities of the period 0-3 and 3-6.	143	4.06	1.32	144	5.31	1.09	-1.27	1.40	-10.87*	.91

	Mastery			Relevance			T-test			
Collaborate with specialized professionals to solve these disorders.	144	3.15	1.36	144	5.37	1.05	-2.22	1.67	-15.93*	1.33
Know how to inform other specialized professionals to approach the collaboration of the centre and the teacher in the attention to the special educational needs that are proposed.	140	3.24	1.31	140	5.21	1.24	-1.96	1.68	-13.73*	1.16

Note. Based on positive ranks: relevance > mastery. *p < .001

Hereafter, the information from the items of each dimension was interpreted separately, and the differences between the areas of mastery and relevance were tested using the T-test (see Table 2).

In *Diagnosis of special educational needs*, the item referring to the identification of sleep disorders, feeding, psychomotor development, and auditory and visual perception stood out in terms of mastery. However, its value was comparable, in terms of relevance, with the item related to the screening of deviations in the infant's physical and psychological development. The comparative analysis between mastery and relevance evidenced the presence of statistically significant differences ($p < .001$). It highlighted the magnitude of the effect of the difference between the importance given to the detection of affective, nutritional and well-being deficiencies, as well as learning difficulties, cognitive dysfunctions and other attention deficits.

Mastery of the dimension *Resources and strategies for attention to diversity* was superior in the competence of individualization and flexibility of learning; while, at the level of relevance, it was surpassed by the dimension linked to attention to students' needs and feelings. The promotion of integration was the variable with the lowest weight both in terms of the mastery and relevance, although differences between these areas were significant in all items ($p < .001$). The magnitude of the effect was close to or greater than unity, above all in the item related to the acquisition of resources to promote educational integration ($d = 1.09$).

In the *Students' developmental and learning characteristics*, the competence about the knowledge of the development of children up to 6 years of age stood out, as well as the identification of stages and their differential characteristics, both in terms of mastery and relevance. Again, when comparing mastery and relevance, statistically significant differences were obtained in all items in favour of relevance ($p < .001$). The magnitude of the effect was large, with values around unity, being higher in the case of relevance given to knowledge about the basics of early care ($d = 1.13$).

The creation and maintenance of communicative ties with the family was the most outstanding item of the dimension *Communication and coordination among educational agents*, both in terms of relevance and dominance. Statistically significant differences ($p < .001$) were obtained in all the competencies evaluated in favour of relevance,

above all those related to collaboration between professionals for the solution of disorders (d = 1.33) and for attending to special educational needs (d = 1.16).

Finally, an analysis was performed to check the degree of relationship between the dimensions, both at the level of mastery and relevance (see Table 3).

Table 3

Correlations between the mastery and relevance areas of the dimensions of the CUPERCOM_GEI.

	D1	D2	D3	D4	R1	R2	R3	R4
D1	1							
D2	.769**	1						
D3	.590**	.649**	1					
D4	.740**	.738**	.670**	1				
R1	.235	.224*	.139	.110	1			
R2	.027	.211*	.155	.113	.896**	1		
R3	.027	.188*	.195*	.105	.689**	.745**	1	
R4	.064	.234**	.190*	.199*	.850**	.909**	.774**	1

Note. * p < .05; ** p < .001. Acronyms: D1/R2 - Mastery/Relevance: Diagnosis of special educational needs; D2/R2 - Mastery/Relevance: Resources and strategies to address diversity; D3/R3 - Mastery/Relevance: Students' developmental and learning characteristics; D4/R4 - Mastery/Relevance: Communication and coordination among educational agents.

Table 3 shows the correlations between mastery and relevance. The highest and statistically significant correlations were between the four competencies in each of the categories assessed (i.e., mastery and relevance); however, these correlations were weak, and many of them not statistically significant (p > .05). Indeed, only the mastery of *Resources and strategies* was significantly related to relevance in all four competencies, with values ranging from r = .234 (p = .007; d = .48) to r = .188 (p = .024; d = .43). Likewise, statistically significant correlations were obtained, all of them of weak and with a medium effect size, between the mastery of *Developmental* and *Learning Characteristics* and the relevance given to this same dimension (*r* = .195; *p* = .019; *d* = .44) and to *Communication and Coordination* (*r* = .190; *p* = .023; *d* = .44).

Regarding the mastery, the positive association between the dimension of *Diagnostic* and the rest of the dimensions stood out; that is, with respect to *Resources and strategies* (*r* = .769; *p* <.001; *d* = .88), *Developmental and learning characteristics* (*r* = .590; *p* <.001; *d* = .77) and *Communication and coordination* (*r* = .740; *p* <.001; *d* = .86). Likewise, the mastery of *Resources and Strategies* was positively and significantly associated with the mastery of *Developmental and learning characteristics* (*r* = .649; *p* <.001; *d* = .81) and with the mastery of *Communication and coordination* (*r* = .738; *p* <.001; *d* = .86), which in turn was significantly and strongly associated with the mastery of *Developmental and learning characteristics* (*r* = .670; *p* <.001; *d* = .82).

In terms of relevance, statistically significant correlations were obtained in all dimensions, both moderate (r = .65-.80) and strong (r > .80), and with a large effect size (d > .80). The highest statistically significant correlations were between *Diagnosis* and

the other dimensions; that is, with *Resources and Strategies* (*r* = .896; *p* <.001; *d* = .95), *Developmental and learning characteristics* (*r* = .689; *p* <.001; *d* = .83), and *Communication and Coordination* (*r* = .85; *p* <.001; *d* = .92); also, between *Resources and strategies* and *Developmental and learning characteristics* (*r* = .745; *p* <.001; *d* = .86), and with *Communication and coordination* (*r* = .909; *p* <.001; *d* = .95), and between *Developmental and learning characteristics* and *Communication and coordination* (*r* = .774; *p* <.001; *d* = .88).

Analysis of the subjective perception of the needs detected in their initial training

The analysis of the students' testimonies has allowed us to know their perception of their competence profile in attention to diversity and thus, to explore the training needs they detect in their initial training. The categorization of the information has led us to identify four major gaps in their training.

The students expressed the need to broaden the *disciplinary theory* related to inclusive education, although there was a disparity in determining how this should be done. One of their proposals was to increase the number of subjects that deal with this topic ["(there) should be more subjects that help us to detect difficulties and to respond correctly to them" (S15); "(there) should be more specific lessons on diversity, since I consider that there are few throughout the degree training" (S68)]. Another suggestion was that the nature of the training offered should be compulsory instead of optional within the teacher training curriculum ["(there) should be a compulsory subject that would provide us with the necessary competencies to deal with diversity" (S82)]. A third option was to consider that attention to diversity should be addressed transversally in the different subjects [If we had all the subjects oriented to diversity, since not all of them take SEN into account because they all mention them, but ... we are not prepared for it (S76)], or lastly, they claimed that more importance should be given to these subjects within the curriculum ["if they gave more importance or value to subjects that are useful for day-to-day classroom or situations that you can face in the classroom" (S100)].

Another need they detected in their initial training, with respect to attention to diversity, is closely related to *practical principles* by demanding a greater number of teachers with experience in the real classroom context ["(there) should be more teachers with experience with boys and girls teaching us" (S36)], whilst they considered it is necessary for University teachers who teach in the degree be close to the work of Galician schools in relation to inclusive education ["teachers from the faculty should know better the real situation of the classrooms in Galicia" (S51)].

In turn, the students demanded an increase in the practical component, even going so far as to say that this increase should be at the expense of theory [" more emphasis should be placed on practical cases and not so much theory that if one does not see how it is carried out, it is of little use" (S69), "(there) should be more time for practice and less theory, interacting more with the children" (S46)].

This increase of praxis in their training is expressed in two ways. On the one hand, by demanding more *indirect practice*, through the resolution of practical cases in the subjects, and on the other hand, direct practice in different educational institutions. In relation to the first aspect, they attached importance to the curriculum subjects being focused on real contexts through the resolution of daily classroom situations ["that we could work with practical cases that help us to learn" (S50), "(that we could)

know real cases, know what activities to carry out, how to deal with them in the classroom for inclusion with classmates" (S95) "if more practical situations are worked on" (S113)]. The second aspect alludes to *direct practice* in schools, a constant demand of students studying for a teaching degree. This demand responds to three motivations: on the one hand, an increase in the time allocated to the practicum in the curricula ["(if) there were more pre-service practices" (S12), "(if) there were practicum from the second year of the degree" (S2)]; on the other hand, an increase in the duration of the practicum ["if there were a greater number of hours of practicum " (S108)]; and finally, the need for continuous contact with educational institutions throughout their initial training ["["(if) we could interact with real schools more frequently"(S55), "(if) we could go to more schools and work with the children directly (S34)"].

Discussion and conclusions

This study has provided answers to a series of questions that have arisen in relation to Initial Teacher Education (ITE) in Early Childhood Education.

The results made it possible to affirm that the ITE provides future teachers with adequate theoretic-practical knowledge in inclusive education for their job performance. Similar findings have been found in other researches that analyse the competencies of future teachers (Arnon & Reichel, 2007) or in-service (Hatlevik, 2017), or that focus on studying competencies related to diagnosis (Klug et al., 2015) and attention to diversity (Cejudo et al., 2016; Fernández-Jiménez et al., 2019; Madrid et al., 2020).

Nevertheless, on the issue of addressing the specific needs of students and providing them with the attention they require, the question that remains is: is it sufficient for future teachers to have a medium level of mastery of the competencies that enable them to do so? The results suggest that they themselves are aware that it is not. The discrepancies between the importance they attach to these competencies and their mastery raise the need for continuous training. This could be explained by the fact that a student may perceive that a competency is fundamental to his/her performance as a teacher, but not feel mastery of it. Similarly, Arnon and Reichel (2007) found the existence of a gap between the trainee teacher's own assessment of their knowledge as teachers (mastery) and the assessment of the ideal teacher (relevance). Indeed, the assessments were higher in what they considered an ideal teacher.

From these discrepancies between mastery (or valuation of one's own knowledge) and relevance (or recognition of their value in becoming an ideal teacher), two possible conclusions can be drawn directly from the results of the present study:

a. the existence of teachers' ongoing training needs, above all, in specific tasks of screening of intellectual, physical, and motor developmental deviations of the little children, as well as in cooperation with other specialist professionals for the attention to the students' specific needs, and,

b. a demand for university training to be more oriented to action, to putting knowledge into practice.

Regarding the first conclusion drawn, international organizations such as the Organization for Economic Cooperation and Development (OECD), through its Teaching and Learning International Surveys (TALIS) of 2013 (as cited in Concha et al., 2019), showed that the quality and effectiveness of teacher training programs is a priority for improv-

ing student outcomes. This study by Concha et al. (2019) refers specifically to the context of Latin America and the Caribbean, although its conclusions can be extrapolated to other contexts, including the Spanish one, in which several studies have highlighted the importance of improving teaching competencies in attention to diversity (Cejudo et al., 2016; Domínguez & Vázquez, 2015; Durán & Giné, 2017; Rodríguez-Hernández, 2019; Sales et al., 2001); or, specifically, their competence in diagnosing educational needs (Klug et al., 2015) or, at least, the coordination and collaboration with specialized teams that support this task, since building a culture of collaboration and joint work is essential to favour the development of truly inclusive measures (Madrid et al., 2020).

Regarding the second conclusion, the demand for practical training extracted from the students' testimonies has already been highlighted in multiple previous investigations. It is found that both in-services and pre-services teachers affirms that university curricula have an eminently theoretical character, as opposed to a lower commitment to practical content and close to the reality of the classroom (Arnon & Reichel, 2007; Tang et al., 2015).

The results confirm the need to improve initial training in Early Childhood Education at the four levels of the model proposed by Furlong (2019), that is, in direct and indirect practice, in practical principles and in disciplinary theory in attention to diversity. These data are in line with the approach of the European Commission (COM, 2017) in determining that the effectiveness of initial teacher education occurs when theoretical pedagogical knowledge and training in action through classroom practices are combined.

The students in this study feel more qualified in relation to the skills and abilities that have a more theoretical focus or are aimed at the acquisition of content and information (to know, to acquire, to learn, to understand ...), as opposed to those referring to practical actions (to identify, to detect, to create, to collaborate...). This greater weight of factual versus procedural learning may be related to this demand for further contact with educational reality. Indeed, it has been shown that active learning experiences have a positive impact on the acquisition of competencies during their ITE (Niemi et al., 2016), especially in transversal competencies in relation to their interpersonal relationships (Pascual-Arias & Molina-Soria, 2020).

So, in the current University System, which is committed to a training that combines theoretical elements with classroom practices, why does a more practical training continue to be a demand from students? Is it because this requirement is not being met, or because the way in which it is carried out is not effective to meet the demands of the students? If so, how can they be offered a more practical training that is closer to reality from the beginning of their studies?

Needless to say that theoretical knowledge, an aspect with greater weight in the students' evaluations compared to practical knowledge, is essential to offer a reliable basis for advancing and reflecting on how to improve teaching (Young, as cited in Hatlevik, 2017) and, especially, to promote the change in expectations and preconceptions about students with special educational needs because, as Madrid et al. (2020), "during their initial training [teachers] receive a more inclusive training, where they develop a greater sensitivity and predisposition to meet the needs of all their students" (p. 208). Moreover, the results obtained may need to be taken with caution to the extent that other studies, such as that of Arnon and Reichel (2007), show that university students value the theoretical knowledge they have more positively than

in-service teachers. This raises the question of whether it is possible that there is an overestimation of knowledge in the students' final year of training, perhaps because they have not yet been exposed to a real teaching situation, or whether new teachers feel that their training is adequate, but that they need additional training.

Anyway, the findings suggest that continuous training is a key element in the professional development of teachers and, to ensure that it is provided, further research on students' training needs is needed to explore the frameworks of professional competencies that can help improve the quality standards of education, as well as to broaden the line of work to include in-service teachers as participants, as in previous research carried out in the international context (Arnon & Reichel, 2007; Klug et al., 2015) and nationally (García-Bracete et al., 2005; Madrid et al., 2020), or even to collect students' opinions on what their ideal teacher would be like, and to what extent the continuous training and updating of this educational agent could contribute to better student learning, above all, of those who require more specific and continuous attention.

A final result to be highlighted is that related to the students' assessment of their mastery and relevance of the competencies in attention to diversity as an integrated whole. The analysis showed high correlations between the four dimensions in each of the two categories, with the dimension of diagnosis of special educational needs being the one that obtained the strongest correlations. As already noted by Klug et al. (2015), diagnosing students' learning "is one of teachers' key competencies (...) and a critical marker in teacher professionalization (...)" (p. 461). Training teachers at the initial and continuous level in attention to diversity (Durán & Giné, 2017; Rodríguez-Hernández, 2019) and working on their beliefs and attitudes towards student diversity (Hatlevik, 2017; Madrid et al., 2020; Sales et al., 2001) are central axes for an individualized, fair, and comprehensive education with the needs and demands of each student.

In short, the University System has the responsibility to train teachers committed to the exercise of quality teaching, as well as the Educational Administrations to provide them with the tools and resources to continue their training when they are in service, but as Furlong (2019) points out "Universities are, or should be, learning contexts fundamentally different from schools" (p. 582). So, university students and in-service teachers have a duty to engage in continuing education that will enable them to adapt their actions to each new challenge and demand of the changing society. Only in this way will they be able to face the "relatively low status" (Arnon & Reichel, 2007, p. 458) that society, and even teachers in training themselves, attribute to the teaching profession.

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