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Students' Perceptions of Teacher Training for Inclusive and Sustainable Education: From University Classrooms to School Practices

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Abstract: Teachers are the pillar for the development of inclusion. Hence, their initial training becomes a matter of relevance for the success of creating inclusive schools. This work contributes to the achievement of the Sustainable Development Goal 4: ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. The other objectives were to delimit the competences in inclusive education for teachers and analyse the perception of future teachers in the acquisition of IE competences in the context of university classrooms and internship centres. This research was carried out with 315 students from Catalan public universities through a questionnaire to assess their perception of these competencies. The results show that competences related to leadership in educational environments, inclusive values, or the identification of the students' abilities are being developed in internship centres. However, the university classroom context lead to the development of competences related to cooperative learning and assessment. In addition, there are significant differences between students who follow specialised teacher training in special needs and those who do not follow it. In conclusion, there is a need to extend specific training to all students and for a greater interrelationship between the training for developing competences in both contexts.

Keywords: inclusive education; university; sustainable education; competences

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1. Introduction

Inclusive education, abbreviated as IE, is a journey geared towards delivering high-quality education to every individual, embracing diversity and accommodating the distinct needs, capabilities, traits, and learning aspirations of all learners and their communities. It entails eradicating all forms of discrimination and upholding the rights of everyone [1]. As such, it is enshrined in the law of our country and has gone from being a well-intentioned principle inspiring educational policies to being consolidated as a right [2]. In keeping with SDG4, IE aims to understand what all learners can achieve, as well as the barriers they face throughout their lives. In addition, IE is based on the principles of sustainable education as it seeks to promote interrelationship between the body of theory and educational practice, as well as the creation of interdisciplinary spaces [3].

For schools and higher education institutions to evolve into hubs fostering inclusive environments and societies, it is imperative to acknowledge diversity as an inherent reality. This entails a dedication to personalised learning, ensuring equal opportunities for everyone, and providing comprehensive teacher training in the realm of inclusion. This latter aspect reminds us that we must not forget that these principles are aimed at teachers or require their direct intervention.

In the educational context, unlike in other contexts, teachers can play a leading and supportive role in IE [4]. For this, it is essential that their concept of IE is directly related to a

vision of belief in inclusive processes in schools, as well as fundamental principles of equity and equal opportunities [5]. One of the foundations for the success of inclusive education is the teacher training provided in universities. Teachers need to be well-trained, as they are leaders of change within the education system [6]. It is internationally recognised that improved teacher training is essential for the improvement of inclusive education [7].

At this point, it is worth mentioning that in 1999, different European countries and their respective universities undertook the commitment to create or consolidate the European Higher Education Area (EHEA). The intention was that the vast majority of European universities would share a similar structure, contributing to the adaptation of an increasingly globalised world and the emergence of a new society called "the knowledge society" [8].

In the first few years of the creation of the European Higher Education Area, the objectives were mostly related to study design, structure, and evaluation. From 2009 onward, however, the focus shifted to the student body and the learning and teaching processes, with the aim of creating universities with inclusive principles. This has made the initial IE training of teaching graduates a pertinent issue in different European countries, and has generated controversy, as there needs to be a consensus and policy regulation on how future teachers should be trained in IE.

From our standpoint, we understand IE in higher education, not from the point of view of compensating for inequalities, but as a global vision, according to which all teachers, students, and others are diverse, and therefore, inclusion is nothing more than normalisation of and attention to existing diversity, with strategies that allow for a global approach. It is important to emphasise that the training context of universities should be used to standardise inclusive principles and strategies, so that future teachers can experience an institutional and formative environment during their four years of training [9].

Focusing more on the framework of Catalan universities, and linked to initial teacher training, we must remember that these institutions have a certain autonomy when it comes to choosing certain aspects related to the initial training in IE, specifically if we are talking about primary education degrees. This means taking on a great challenge, which the centres are often unable to meet [10].

Before focusing on the aspect of teaching competences in inclusive education, we would like to start with what is meant by competence.

Competence is considered the ability to apply, in an integrated manner, the contents of each teaching and educational stage, with the aim of achieving the appropriate performance of activities and the effective resolution of complex problems. Several authors and institutions have worked and published on this concept [11–16]. However, other research, [17,18], warns that little attention has been paid to the training of competent teachers with an inclusive model of education.

We understand professional competences in the context of IE, as the European Commission does [19], as a combination of knowledge, skills, values, and attitudes. These values and attitudes imply a readiness to act. They are considered indispensable in initial and in-service training to acquire inclusive competences, as without inclusive attitudes and values it is very difficult to transfer these inclusive processes in schools and classrooms [20–22]. Furthermore, it should be noted, as several authors have commented, that being competent today in one context does not mean being competent tomorrow in another context [23].

Having defined the concept of competence, it seems appropriate to define what is meant by an inclusive competence profile. To do so, we rely on the definition of the European Commission [19], which defines it as the description of competences that reflect the ability of teachers to carry out highly complex actions with ease, adaptation, and precision, in relation to IE research and training.

According to this research, some of the elements that should be taken into account when thinking and planning initial teacher training in Inclusive Education Competences (IECs) could be concreteness about what should be the ideal competence profile of an inclusive teacher; how to train (concreteness of the IF methodology); how to consolidate

the IECs (concreteness of the essential elements in the practicum in IE); and how to favour the transfer in professional practice (favour the transfer of the IECs to classrooms by future teachers) among others.

It is interesting to note that a number of dimensions have been identified, which may act as facilitators or limiters of students' achievement of the IECs. On the one hand, according to [24], there are a few studies on the initial selection of prospective students for teaching degrees. However, the vast majority of authors agree on differentiating between two elements when selecting future students: cognitive abilities and a series of personality attributes and factors [25]. According to [26,27], self-efficacy, personality, and epistemic beliefs should be taken into account.

On the other hand, other aspects identified in research have been the inclusive policies in the universities themselves (which have a direct influence on obtaining the necessary aid), and the role of university teachers (who must be aware of the issue and have training). Here, it should be remembered that some studies indicate that some teachers are not predisposed to make the reasonable adjustments set out in the regulations [28,29].

One of the primary obstacles hindering the sufficient preparation of university teachers in inclusive education stems from the voluntary nature of such training in Spain, compounded by the lack of mandatory pedagogical qualifications for teaching positions [30]. At this point, we would like to highlight that a good resource for universities to evaluate inclusive education could be the questionnaire for the evaluation of university inclusive education created by [31].

We should not forget that teaching practices are a key component in the initial training of future teachers in inclusive education [32,33]. This is why criteria should be established to select educational centres as training centres for internships, improve mentoring practices in universities and training centres, and facilitate better coordination between universities, internship centres, and education departments, as well as ensure the establishment of shared criteria by all universities. Students should explore and study the vision of an inclusive school in an academic setting and a placement setting using a critical methodology as they do in countries such as Finland. There, students do not learn the theoretical part until the last stage, where they have a vision of their own and are given the opportunity to read scientific articles related to the topic. During the same internship, they learn how to make a proper assessment of the barriers and facilitators within the institution.

At this point, which is no less important than the last aspect, we cannot fail to address the highly controversial issue of teachers' attitudes towards IE. Research on attitudes towards IE conducted on (1) attitudes towards specific student groups, (2) inclusion of students with special educational needs in mainstream classes, and (3) attitudes towards the concept of inclusive education in general [34] suggest that teachers with a migrant background, who are female and who have more experience, have a more comprehensive view of IE. It can be deduced that the interaction of students with the training and practical environment generates a series of perceptions that have a direct impact on teachers' attitudes. Likewise, the perceptions and conceptions that students have already internalised before the training process also have an impact on the final attitudes [35,36]. Ref. [36] showed that teachers' attitudes change in the transition from the pre-service phase to the novice teacher year.

For all of the above reasons, it seems important to conclude this section by recalling the role that university policies should play to improve initial training in inclusive education.

Thus, the main objectives of this research are as follows:

- To determine students' perceptions of the competence dimensions taught in the university classroom and practice centre, as well as identify students' perception of their mastery;
- To establish the existence of significant differences in the competence dimensions according to university classroom contexts, practice centres, and perception of mastery;
- To define the existing correlations between the competence dimensions and training contexts (university classrooms and practice centres) and perception of mastery;

- To identify competences that are susceptible to improvement in the training contexts (university classrooms and practice centres);
- To compare students' perception of the acquisition of competences in education based on their specialisation (mention) in studies.

2. Materials and Methods

In this study, a descriptive, inferential, and correlational analysis was used to respond to the objectives set out.

2.1. Participants

Of the five public universities in Catalonia (Spain), four participated in the study, with a total of 315 students in the final year of the primary education degree. The distribution of students in the total sample among the participating universities was as follows: University I (29%), University II (22%), University III (21%), and University IV (28%). The participants had an average age of 22.9 years, and the majority were female (80%). Although all of them were studying a primary education degree, 78% were studying a speciality (it should be noted that the Spanish university system allows students of the primary education degree to obtain a specialisation during their last year of university: physical education, foreign language, music education, special educational needs, mathematics, etc.), and, specifically, 24% of the students were studying a speciality in special educational needs. Although only 8% of the students had received training in inclusive education in non-university contexts, 80% had personal (30%) and professional (50%) experience in the field of inclusive education, specifically with people with special educational needs.

On the other hand, students considered the 'inclusive education' construct to be related to diversity, equal opportunities, equity, and the right of individuals to receive a quality education.

2.2. Instruments and Procedure

An ad hoc questionnaire was created to collect information from the students. This questionnaire was developed in three phases.

In the first phase, the existing literature on the "inclusive education" construct from 2005 to the present in the ERIC database was reviewed. Based on this literature review, a list of teacher competences in inclusive education was drawn up and grouped into 7 areas: teamwork and cooperation, values and ethics, pedagogical–didactic, leadership, technology, assessment, and personal.

In the second phase, and based on the list of teaching competences in inclusive education, the Delphi technique was applied. Based on collective intelligence and anonymous participation [37], the Delphi technique made it possible to provide content validity to the questionnaire to be developed [38]. Ten experts participated in this phase: three university teachers, three primary education teachers, and four professionals from educational administration. Their degree of expertise was assessed through the expert competence index (Kcomp) [39], the average of which was 0.88, which is considered a highly influential index. During this stage of using the Delphi technique, three rounds were carried out with the experts in order to delimit the teaching competences in inclusive education. In the first round, the experts could modify, add, validate, and/or delete competences from the list. During the second round, the experts were asked to prioritise (on a scale of 1 to 5) the competences and to remove or validate competences that had been added by other experts. Finally, in the third round, the experts indicated the competences in inclusive education that were most relevant from their point of view for teacher education.

Some general considerations should be noted from the procedure carried out using the Delphi technique:

1. There were no modifications in relation to the areas of competences that were established;

2. In the area of personal competences, there was the greatest number of discrepancies, as some experts considered that some of the personal competences listed should already be consolidated at the time of access to university studies;
3. The number of competences increased from the first to the second round. In the end, the experts considered that a teacher should have 51 competences in inclusive education, grouped into the following areas: teamwork and cooperation (9), values and ethics (5), pedagogical–didactic (11), leadership (4), technology (3), assessment (7), and personal (12). (See Appendix A).

In the third phase, the questionnaire was made up of 58 items grouped into two parts: 7 items on socio-demographic data (age, gender, speciality, training, experience, and concept of inclusive education) and 51 items on the competence profile in inclusive education obtained through the Delphi technique. Next, each of these 51 items was assessed from three perspectives: (a) training in the university classroom, which answers the question "To what extent do you perceive that you have been trained in these competences in the university classroom?"; (b) school practice, which answers the question "To what extent do you perceive that you have been trained in these competences during your school practice?"; (c) and mastery, which answers the question "Do you feel prepared to apply these competences?". To answer these items, a rating scale was established: 1 = not at all/ never, 2 = a little/ sometimes, 3 = quite a lot/ often, and 4 = a lot/ always.

The implementation of the questionnaire was carried out during the months of February and March 2021 in person at each university.

2.3. Data Analysis

SPSS22 software was used for descriptive analysis, inferential analysis using the T-test for related samples, and correlational analysis of the data using Pearson's correlation, with age, gender, speciality, training, and experience being the dependent variables and training in the university classroom, practices in the school, and domain being the independent variables. It should be noted that, to facilitate the understanding of the data, the scale of 1 to 4 was transformed into a scale of 0 to 10 using the following formula: n(original rating) $\times$ ((−1) $\div$ 3) $\times$ 10. An analysis of the reliability of the questionnaire was also carried out, resulting in a Cronbach's Alpha of 0.85.

Ethical Considerations

In accordance with the Declaration of Helsinki, the present study complies with the relevant legal and ethical considerations. Participants were informed of the aims of the study; no personal data were collected, and their anonymity was preserved. Participants completed the questionnaire on a voluntary basis.

Furthermore, technical and organisational security measures were implemented to ensure the confidentiality and integrity of the questionnaires completed by the participants.

3. Results

3.1. Students' Perceptions of the Competence Dimensions: University Classrooms, Practice Centres, and Mastery

In the present research, the students' perception of the different areas of competence were analysed in relation to the following variables: competence development in university classrooms, competence development in internship centres, and their mastery perception. Firstly, their perception regarding the different areas of competence and subsequently the competences that are part of each area of competence in inclusive education were analysed. Below is a graph with the evaluations by the students in relation to the different areas, considering the three variables mentioned.

As can be seen in Figure 1, the arithmetic averages resulting from the students' assessment of the development of the competence areas in internship centres are higher as compared to the variable of the development of the competence areas in university classrooms. The students, therefore, have the perception that the training context of internship

centres contributes to a greater degree of development of the competence areas in inclusive education. However, the assessments of the domains in all the competence areas obtain higher arithmetic averages, except for the areas of "teamwork", "pedagogical–didactic" and "leadership", in which the students have given higher values to the training received in the context of the internship centres. It is worth noting the difference between the assessments of the perception of mastery in the fields of "personal skills" and "technological" with respect to the training received, especially in the training context of university classrooms.

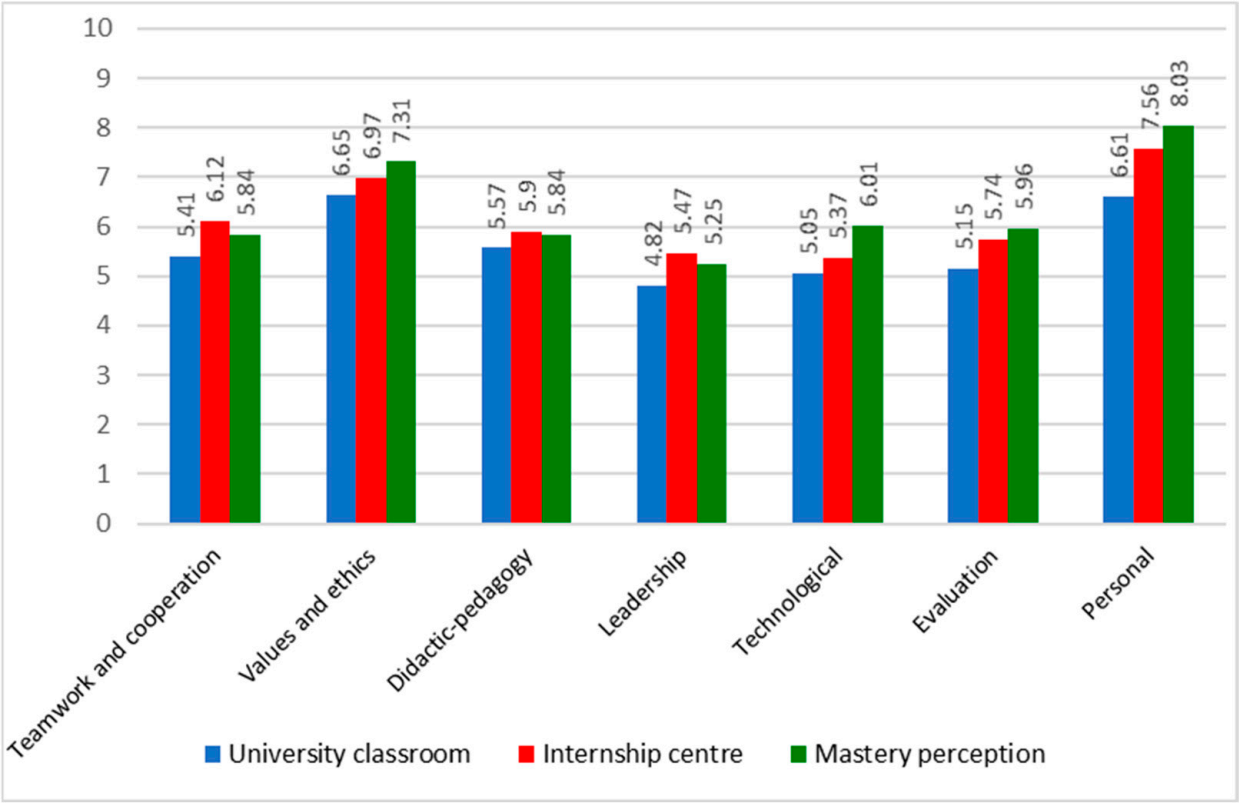

Figure 1. Comparison of the evaluations of the development of the competence areas in inclusive education in university classrooms and internship centres and their mastery perception.

3.2. Significant Differences in the Competence Dimensions According to the University Classroom Contexts, Practice Centres, and Perception of Mastery

A T-test for related samples was carried out, and the results show that if we compare the students' evaluations (according to their own perception) of the different competence areas presented above in relation to the variables—competence development in university classrooms, competence development in internship centres, and their mastery—the results indicate significant differences in all areas between the three variables, except for the evaluations in the pedagogical–didactic area (underlined in bold in Table 1). In this area, the evaluations of competence development in the internship centres and the evaluations of their domain do not show significant differences, as we can see in the following table. Therefore, the students have the perception that in this area the development in the context of training and their mastery is very similar. We could think, therefore, that in this area the experiences that the students have had in the internship centres have a direct impact on the perception of their mastery.

Table 1. Comparison of the evaluations of the development of the competence areas in inclusive education in university classrooms, internship centres, and their mastery perception.

Areas	Scales Compared (A = Training in the University Classroom, B = Training in the Practice Centre, C = Perception of Mastery)	Sig. (Bilateral) < 0.05
1. Teamwork and cooperation	C1A (x = 5,41) < C1B (x = 6,12)	***
	C1A (x = 5,41) < C1C (x = 5,84)	***
	C1B (x = 6,12) > C1C (x = 5,84)	**
2. Values and ethics	C2A (x = 6,65) < C2B (x = 6.97)	*
	C2A (x = 6,65) < C2C (x = 7,31)	***
	C2B (x = 6.97) < C2C (x = 7,31)	***
3. Didactic–pedagogy	C3A (x = 5,57) < C3B (x = 5,90)	*
	C3A (x = 5,57) < C3C (x = 5,84)	*
	C3B(x = 5,90) **> C3C** (x = 5,84)	**0.611**
4. Leadership	C4A (x = 4,82) < C4B (x = 5,47)	***
	C4A (x = 4,82) < C4C (x = 5,25)	***
	C4B (x = 5,47)>C4C (x = 5,25)	*
5. Technological	C5A (x = 5,05) < C5B (x = 5,37)	*
	C5A (x = 5,05) < C5C (x = 6,01)	***
	C5B (x = 5,37) < C5C (x = 6,01)	***
6. Evaluation	C6A (x = 5,15) < C6B (x = 5,74)	***
	C6A (x = 5,15) < C6C (x = 5,96)	***
	C6B (x = 5,74) < C6C (x = 5,96)	**
7. Personal	C7A (x = 6,61) < C7C (x = 8,03)	***
	C7A (x = 6,61) < C7B (x = 7,56)	***
	C7B (x = 7,56) < C7C (x = 8,03)	***

Note: $p < 0.05$ (*); $p < 0.01$ (**); $p < 0.001$ (***).

3.3. Correlations between the Competence Dimensions and Training Contexts (University Classrooms and Practice Centres) and Perception of Mastery

Regarding the bilateral correlations calculated with Pearson's formula between the training received and their perception of mastery, the results have indicated that the students have the perception that the development that is being carried out by internship centres in different competence areas is greater than the development taking place in university classrooms. This is a relevant result in our research. The results also indicate that the areas that have a higher correlation with the students' perception of mastery coincide with both training contexts. These areas correspond to "leadership", "pedagogical–didactic", and "technology". As for the competence areas that correlate to a lesser degree, in this case, they correspond to "values and ethics" and "personal competencies".

3.4. Competences That Are Susceptible to Improvement in the Training Contexts (University Classrooms and Practice Centres)

The arithmetic averages of each competence were analysed when deciding whether a competence needs improvement in its development (in terms of training development in university classrooms, internship centres, and mastery perception). Table 2 shows the classification of all the skills analysed in each of the areas according to whether they require (x) greater development or not (v) in the educational context of university classrooms (A), in the context of internship centres (B), and mastery perception (C). The results have indicated that the "personal skills" area does not require any further improvement, which

is why it has not been added to Table 2. The competences that did not appear in the three studied variables (A/B/C) and needed to be further improved were also omitted.

In Table 2, we observe that regarding the training context of university classrooms, 45% of the competencies require further development (23/51), and with regard to the context of the internship centres, 17.64% of competencies require further development (9/51).

Table 2. Students' perception of the development of competencies in inclusive education.

Areas		Competencies	A	B	C
1.	Work and cooperation	1.1. Strengthen collaborative work with families to promote the creation of inclusive environments.	X	V	V
		1.2. Work with colleagues and other inclusion support services.	X	V	V
		1.3. Collaborate with the different sectors of the educational community and the social environment.	X	V	V
		1.4. Coordinate the educational interventions of different teachers who intervene with the same students or groups of students.	X	V	V
		1.6. To promote processes of reflection and joint work that recognise knowledge and different professional trajectories.	X	V	X
		1.7. Share tools, materials, aids, and plans with the colleagues.	V	V	X
		1.9. Promote collaboration between different professionals and families.	X	V	V
2.	Values and ethics	2.5. Foster coexistence by applying mediation techniques in conflict resolution to contribute to a peaceful resolution.	X	V	V
3.	Pedagogical–didactic	3.2. Design accessible environments.	X	V	V
		3.6. Apply the knowledge of psychopedagogy to promote inclusion in the classroom (knowledge of SEN characteristics, classroom climate strategies, knowledge of the DUA system, types of intelligence, etc.).	X	X	X
		3.8. Communicate the identified abilities of the students to them and their families.	X	X	X
		3.9. Identify the educational deficiencies of the school.	X	V	V
		3.10. Look for strategies that favour continuing education.	X	V	X
		3.11. Apply the most appropriate research techniques in the classroom in order to improve inclusive practices.	X	X	X
4.	Leadership	4.1. Lead collaboration processes with families in order to contribute to creating support networks that favour inclusive and social education processes.	X	X	X
		4.2. Promote the creation of an inclusive centre climate by making everyone feel accepted and recognised.	V	X	X
		4.3. Lead joint planning proposals with all agents involved in E-A processes.	X	X	X
		4.4. Lead educational environments based on the principles of inclusive education.	X	V	V
5.	Technological	5.1. Use communication and information technologies to facilitate access and participation for all students.	X	X	X
		5.2. Promote systematisation work and analyses of initiatives and experiences with TACs that are favourable for inclusion.	X	V	V
		5.3. Encourage the use of digital tools to share knowledge with colleagues while building and making an inclusive school.	X	V	V

Table 2. *Cont.*

Areas	Competencies	A	B	C
6. Evaluation	6.1. Participate in shared assessment activities of one's own teaching and that of others (observations of other teachers in one's own classroom and in other classrooms) in order to identify barriers and make proposals for improvement.	X	X	X
	6.2. Encourage the collaboration of families in the assessment processes of students with difficulties by providing information about their performance in other contexts.	X	V	V
	6.4. Design actions for improvement.	V	X	X
	6.5. Make use of tools that help review the cultures, policies, and inclusive practices of the educational centres.	X	V	V
	6.6. Encourage student participation in the improvement of the centres.	X	V	V
TOTAL	51 competencies	23	9	12

In terms of the competencies where students expressed a need for improvement in their perceived mastery we have observed a consistent pattern across various domains. These competencies can be categorised into six types: 1. working with families; 2. the ability to manage an inclusive classroom and the application of diversified inclusive strategies; 3. working with colleagues and other inclusion support services; 4. sharing materials and strategies with peers; 5. conducting shared assessments; and 6. fostering an inclusive climate and culture.

By examining the competencies in which students have shown varying levels of development across all competency areas and in both educational contexts, it becomes feasible to identify the strengths and weaknesses of each context regarding the development of competencies in inclusive education (Table 3).

Table 3. Strengths and weaknesses in formative context in the development of IECS.

University Classroom Context	Internship Context
strengths	strengths
Development of inclusive values.	Development of personal and professional values as self-criticisms.
Cooperative learning among peers and strategies for sharing materials and learning.	Identifying students' capabilities.
Active evaluation by students.	Leading educational environments with inclusive values.
Weaknesses	Weaknesses
The task and the skill to guide inclusive initiatives jointly with families.	Communicate to students and families high expectations about the progress of all students.
Coordinated work and leadership with other members of the educational community.	Coordinated work and leadership with others members of the educational community and with colleagues.
The transmission of mediation techniques for conflict management and resolution.	Research to improve internships
The use of tools for the evaluation of inclusive policies, cultures, and internships in educational centres.	Promoting an inclusive school environment.
	Participating in shared evaluation activities of teaching and that of others.

3.5. Students' Perception of the Acquisition of Competences in Education Including Their Specialisation (Mention) in Studies

The results indicate that, when comparing the arithmetic averages, only in the dependent variable "other mentions" are there significant differences. These are included in the independent variable: training received in university classrooms and training received at internship centres. We note, therefore, that the independent variable (perception of the domain) does not show a significant relationship with the dependent variable "other mentions".

Regarding the independent variable "training received in the university classroom", the results indicate that the students who study the Special Education Needs (SEN) specialty value the development of competence in the "pedagogical–didactic" field significantly more than the "other mentions" field (marked in Figure 2 with AC).

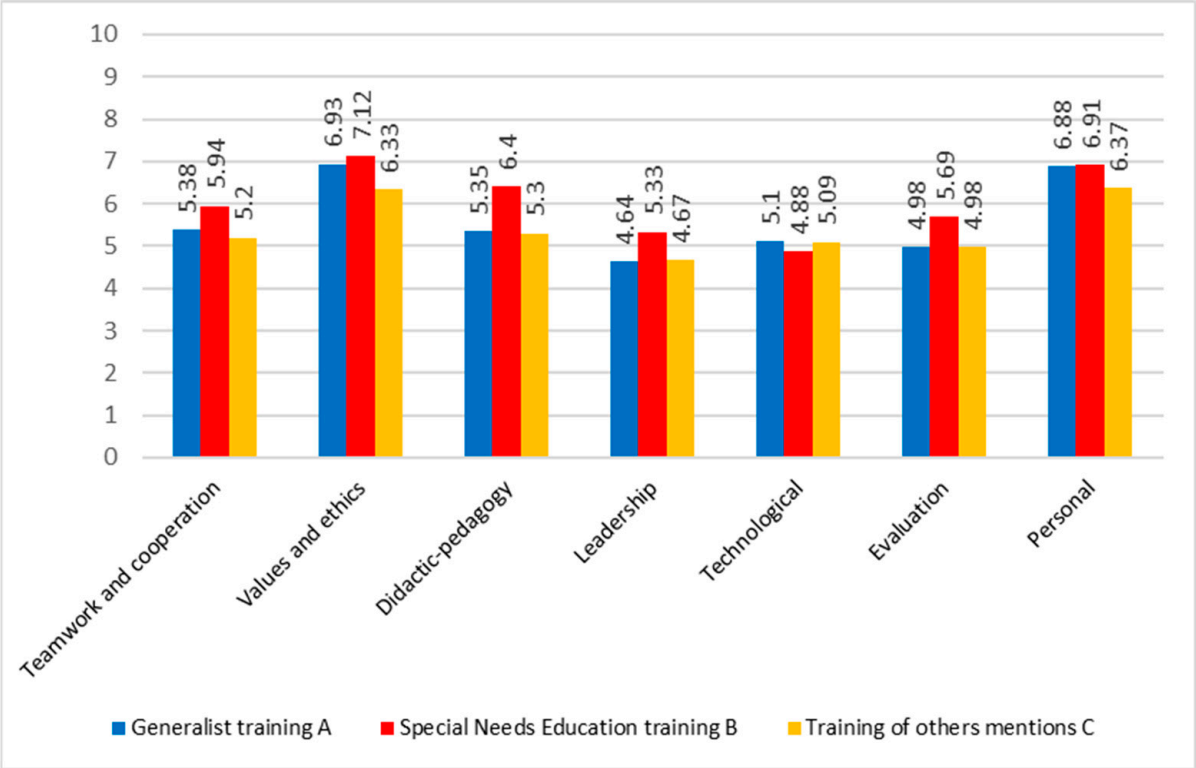

Figure 2. Comparison of arithmetic averages of the different specialties/mentions in the context of university classrooms.

The results also make it clear that the students studying the SEN specialty rate the training received in the context of the university classroom significantly better in relation to the "values and ethics" areas (marked in the Figure 2 with C) compared to the students studying "other mentions".

Finally, regarding the independent variable "training received at the internship centre", and as can be seen in Figure 3, the results indicate that in the context of internship centre training, the students of "other mentions" best evaluates the training received by the internship centres in all areas of competence.

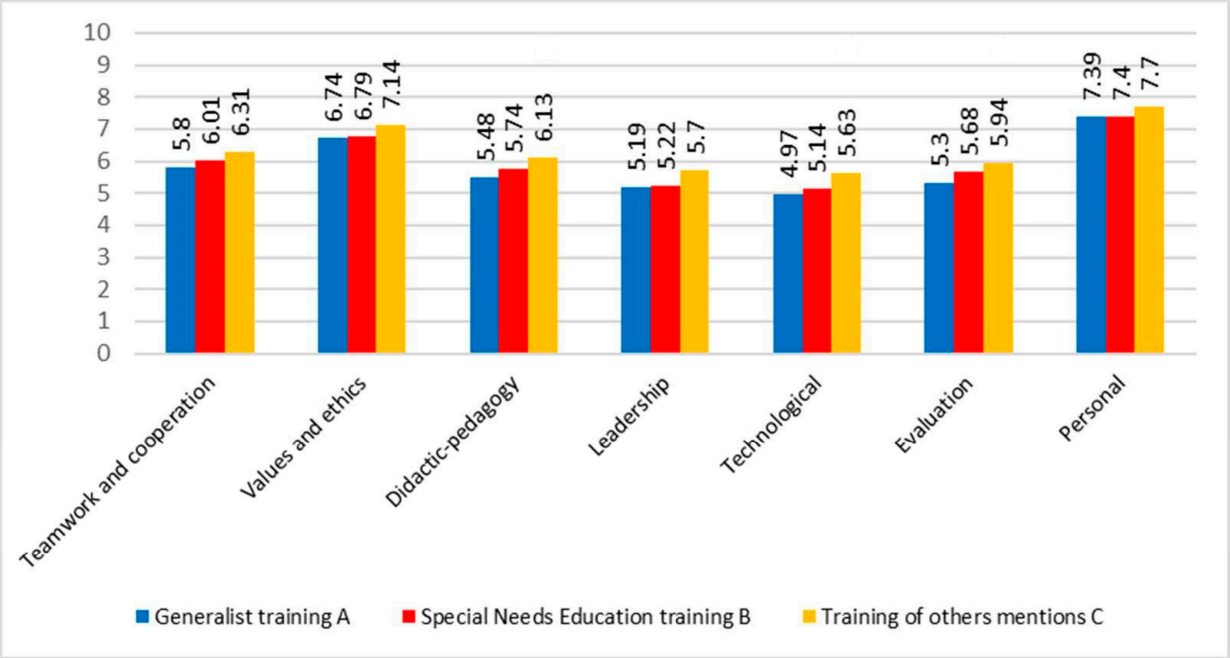

Figure 3. Comparison of arithmetic averages of the different specialties/mentions in the context of internships centres.

However, there are statistically significant differences only between the assessment by students who study "other mentions" in the areas of "didactic–pedagogy", "technological", and "evaluation" (all three marked with an A in Figure 3) towards students who do not study any specialty (generalist).

4. Discussion and Conclusions

From an inclusive perspective, education systems, and in particular schools, are subject to often contradictory demands [40]. On the one hand, schools must provide quality education for all students, while at the same time recognise and adjust to the individual learning needs of each student. This causes tensions within schools itself, leading to segregated situations within a supposedly inclusive context [41]. These same tensions are transferred to teacher training in relation to inclusive education.

With the implementation of the European Higher Education Area, there is a shift from a dual model to an integrated model in teacher education [42]. The integrated model provides the opportunity to deliver two forms of inclusive education training. The initial approach involves conducting inclusive education training through dedicated modules or courses, while the alternative approach offers comprehensive training integrated across various subjects. The choice between these training approaches will be influenced by the perspectives on inclusive education.

Currently, there is no consensus on which model should be applied; rather, there are opposing views. On the one hand, there are authors who defend a transversal and comprehensive model throughout teacher education [43,44], and, on the other hand, there are authors who consider that a transversal model can be dangerous due to the fact that, in general, shared responsibilities end up being nobody's responsibilities [42]. From our perspective, the transversal model is the one that best fits our conception of inclusive education. However, the results of this research suggest a greater perceived mastery of inclusive education competences in students taking the specialisation in specific educational needs in relation to other specialisations (music, physical education, languages, etc.) or to general education. Perhaps this should make us question and reflect on the training in inclusive education provided in university classrooms in specialisations and general education.

Considering the students' self-assessed proficiency in the competency areas of inclusive education in our study, it aligns with findings from similar research conducted in the Spanish context by [45]. They discovered that teachers generally exhibit positive attitudes and values towards inclusive processes and principles. However, their implementation of inclusive strategies in the classroom is only moderate. The outcomes of our study indicate that prospective teachers already perceive a limited mastery and a lesser degree of competency development in relation to inclusive methodologies [28].

Thus, although the results of the research show that university students have a positive attitude towards inclusive education, the achievement of an inclusive culture in schools that translates into a firm commitment to the use of inclusive methodological strategies remains a challenge [39]. From our position, we consider the need for university training that strengthens the positive attitudes of each student towards the values implicit in inclusive education [16], but also the need for training in competences related to inclusive leadership and collaboration [12], so that positive individual attitudes towards inclusion become positive 'community' attitudes capable of developing a truly inclusive culture in schools [46].

In this sense, students perceive that they sufficiently mastered the competence area of leadership in our research. However, according to [47], teachers enrolled in the Bachelor's Degree in Primary Education not only acknowledge a limited proficiency in leadership skills but also consider it the least significant domain of competency. This perception stems from a direct and unstructured understanding of leadership. In our study, competencies related to leadership are associated with collaborative engagement with families, fostering an inclusive school culture and environment, collaborative planning with all stakeholders involved in inclusive education processes, providing students with feedback about their abilities, and ultimately leading to inclusive environments [6]. Our findings suggest that students perceive themselves as competent in leading inclusive settings. It is possible, as suggested by [48], that leadership is intertwined with other capacities, implying that a perception of leadership ability may require a solid grasp of competencies in areas that necessitate leadership.

Alternatively, the competencies identified by students in our study as needing enhancement in their perceived mastery are associated with their capacity to execute collaborative processes involving families, fellow students, and colleagues. These findings might be connected to a prevailing notion of individualism within the teaching profession. Indeed, there has been longstanding acknowledgment that teaching, in practice, tends to be a solitary endeavour [49,50].

Instead, by delineating the range of deficiencies—concerning how students perceive their mastery in competency areas and competencies as reported in this research—we have identified areas requiring improvement in competency development within the educational setting (both university classrooms and practice centres). This becomes especially pertinent considering that one of the key findings of our study is the correlation between these two training contexts and the perception of mastery. In essence, the training received influences all competency areas and the final level of mastery perceived by students. Nevertheless, the resulting correlations consistently indicate that the training context of the practice centre consistently correlates to a greater extent than the university classroom context in mastering competencies in inclusive education.

A relevant aspect of our research is the role of practice in teacher education. From the results obtained, we conclude that practical training is not only related to the more comprehensive preparation of professionals and technicians but is also related to a theoretical conception of education (inclusive education) and the curriculum. In this educational conception, experience, inductive learning based on the systematisation of practice, and social constructivism in which both teachers and students contribute to the development of a new-shared knowledge are highly valued. It is important to recall that a key finding of this study has been the association between the university classroom setting and the practice centre context with the perception of mastery. Notably, the ensuing correlations consistently

suggest that the practice centre's training context consistently correlates more strongly than that of the university classroom in mastering competencies in inclusive education.

The significance and perceived greater advancement associated with the practicum have been highlighted in prior research [51], which suggests that students generally view the practical setting as offering superior learning and competency development. Hence, the importance of practical training for university students cannot be overstated, as it facilitates the cultivation of personal and professional values, fosters a sense of self-awareness, aids in identifying students' abilities, and enables the leadership of educational environments with inclusive principles. These findings underscore the notion that initial training in inclusive education necessitates collaborative efforts between the theoretical (university classroom) and practical (practice centre) realms, alongside an understanding and assessment of students' perceptions of competency mastery in inclusive education.

It is essential to remember that this training will play a pivotal role in preparing future teachers who are well-equipped to work in inclusive education settings. The foundational training of prospective teachers in values and attitudes necessitates collaborative efforts with schools to foster inclusive practices. Moreover, practice should not only be a curricular activity that takes place at the end of a course or as a complementary subject in the curriculum but should be part of the daily work, which is constantly developed in each of the learning processes that take place in a training programme and in university teaching in general.

According to [52], internship experiences demonstrate the importance of incorporating reflection and analysis of the performance being exercised, in order to better understand both what is being done and the possible failures that may occur due to the student's inexperience in working in real conditions.

Regarding the limitations of the study, it is worth highlighting the non-participation of one of the public universities, which could have given greater consistency to the results. Similarly, it would have been interesting to collect information from the students using more qualitative instruments, which would have allowed us to go deeper into the objectives set.

If we really aspire to build inclusive education systems, it is necessary for future teachers to have a solid theoretical and, above all, practical training in inclusive education competences. Through this training, teachers should be able to generate truly participatory and collaborative processes and contexts that allow them to manage diversity in the classroom through pedagogical–didactic approaches in line with the principles of universal design for learning.

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Appendix A. Areas and Competences

1. Teamwork and cooperation
1.1. To promote collaborative work with families in order to foster the creation of inclusive environments. 1.2. To work with colleagues and other inclusion support services. 1.3. Collaborate with different sectors of the educational community and the social environment. 1.4. Coordinate educational interventions of different teachers who interact with the same students or groups of students. 1.5. To contribute to the creation of an inclusive culture in the school. 1.6. To encourage processes of reflection and joint work that recognise knowledge and different professional backgrounds. 1.7. To share tools, materials, aids, and planning with colleagues. 1.8. Promote processes of identification and analysis of the barriers and supports that hinder and favour the learning and participation of all students. 1.9. Promote collaboration with different professionals and families.
2. Values and ethics
2.1. To foster the belief that all pupils can make progress by incorporating high expectations in pupils and their families. 2.2. To promote values linked to respect, esteem, and human consideration in all its aspects. 2.3. To avoid the processes of exclusion of pupils. 2.4. To critically analyse personal work in order to improve professional development. 2.5. To promote coexistence by applying mediation techniques in conflict resolution in order to contribute to peaceful resolution.
3. Pedagogical–didactic
3.1. Plan educational situations in which pupils with different abilities and different learning paces can participate and learn. 3.2. Designing accessible environments. 3.3. To plan meaningful educational actions for all learners. 3.4. Apply different intervention strategies based on the different types of existing support. 3.5. Promote cooperative learning among pupils. 3.6. Apply knowledge of psychopedagogy to favour inclusion in the classroom (knowledge of SEN characteristics, classroom climate strategies, types of intelligences, etc.). 3.7. Identify pupils' abilities. 3.8. Communicate the identified abilities of the students to the students and their families. 3.9. Identify the educational deficiencies of the school. 3.10. To seek strategies that promote continuous training. 3.11. Apply the most appropriate research techniques to the classroom in order to improve inclusive practices.
4. Leadership
4.1. To lead processes of collaboration with families in order to contribute to the creation of support networks that favour the processes of inclusive and social education. 4.2. Promote the creation of an inclusive school climate, making everyone feel accepted and recognised. 4.3. To lead proposals for joint planning with all the agents involved in the processes of E-A. 4.4. Leading educational environments based on the principles of inclusive education.
5. Technological
5.1. Use communication and information technologies to facilitate access and participation of all pupils. 5.2. Promote the systematisation and analysis of initiatives and experiences with ICT that are favourable to inclusion. 5.3. Encourage the use of digital tools to share knowledge with colleagues in order to build and make inclusive schools.
6. Evaluation

6.1. Participate in shared evaluation activities of teaching and that of others (observations, of other teachers in the classroom, in other classrooms) in order to identify barriers and make proposals for improvement. 6.2. Encourage the collaboration of families in the assessment processes of pupils with difficulties, providing information on their performance in other contexts. 6.3. To identify one's own strengths and weaknesses. 6.4. To design actions for improvement. 6.5. Make use of tools to help review the inclusive cultures, policies, and practices of the school. 6.6. Encourage student participation in school improvement. 6.7. Encourage the active participation of all learners in their assessment.
7. Personal Competences
7.1. Acting in a way that takes into account that teachers are role models for their students. 7.2. Active listening with students. 7.3. Seek other ways of acting (innovate) that make it possible for all children to feel like they are an important part of the school at some point in their lives. 7.4. Actively seek collaboration with other members of the educational community. 7.5. Act autonomously and reflectively. 7.6. Communicate with empathy. 7.7. Demonstrate interest in the potential of all learners. 7.8. Have an attitude of helpfulness towards fellow teachers who need it. 7.9. Have a positive and constructive attitude towards life and a curiosity towards others, different cultures and ways of life. 7.10. Be responsible. 7.11. Express emotions in an appropriate manner. 7.12. Have an active attitude towards lifelong learning.

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