

Article

Early Childhood Education Teachers: Perceptions about Their Preservice Training

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Abstract: Teacher professional development (TPD) is a process that ensures that teachers acquire the skills necessary to address the complex needs of 21st century children. To this end, over the last decade, the European Higher Education Area (EHEA) has undergone modifications, incorporating active and innovative methodologies in the study plans. Aligned with these principles, this research aims to evaluate the reforms implemented in Spanish universities for the initial training of early childhood education teachers. The opinions of 1048 future teachers from four Spanish universities were collected through a Likert-type questionnaire, measuring students' perceptions of four factors: curricular design/planning, curricular implementation, evaluation strategies, and participation and interaction in the classroom. Perceptions on the first two factors are considered adequate and satisfactory, while problems persist in the third and fourth factors. Considering the results, we reflect on areas for improvement to provide early childhood education professionals with competencies in line with future roles and demands.

Keywords: preservice teacher education (PTE); teacher professional development (TPD); teaching and learning; teacher education; early childhood education (ECE)



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1. Introduction

Teacher professional development (TPD) is an on-going process of learning and growth that seeks to improve the skills and knowledge of educators from their initial training at university throughout their professional lives. This process ensures that teachers acquire diversified tools to address the complex needs of children in the 21st century, promoting inclusive educational practices that are adaptable to each individual context and situation [1].

In recent years, we have witnessed a transformation of the European university model. The European Higher Education Area (EHEA), as a project for the harmonization and convergence of higher education in Europe, has become the benchmark that has guided the changes. The initial training of early childhood education teachers has assumed the challenge of promoting the methodological changes that EHEA demanded. In this system, the student assumes a leading role and teachers adopt the role of learning facilitators. The teaching staff foster students' acquisition of knowledge, abilities, and skills that allow them to adequately respond to the future demands of their professional performance and progress both humanly and academically [2].

Traditional teaching has been centered on the teacher, with an overload of face-to-face classes. On the contrary, the system proposed by the EHEA promotes a leading role in the entire learning process, with the student having a more active and participatory role in their training process [1]. In this way, the teaching staff maintains its function of informing and training, but with the aim of involving the student in their own learning, without forgetting

the challenges generated by the collaboration and cooperation of other professionals and social agents [3].

In this new model, the competencies approach is assumed, which allows defining academic and professional profiles and shaping training programs in terms of learning outcomes. A competence is described as “a complex combination of knowledge, skills, understanding, values, attitudes and desires that lead to an effective and incorporated human action in the world, in a particular domain” [4] (p.9). Some of these competences refer to the student’s ability to apply and integrate knowledge, problem solving, decision making, transferring knowledge to other contexts, etc., considering that their attainment will be achieved if the student adopts an active role in his or her learning. Learning is conceived as a continuous, active, cooperative, reflective, autonomous, and experiential process. The student will learn in a different way, accompanied by a formative evaluation that surpasses traditional exams. The importance given to the results of learning is key to the evaluation processes since the results allow the process to guide and structure learning [2].

Taking into account the aspects referring to the teaching–learning process with which university students coexist, we consider the following to be of vital importance: First, the curricular design and planning that must be specified in the teaching guides published by universities to specify their study plans according to the competences assigned to the professional profile; second, the implementation of strategies (learning methodologies), which are adjusted to the skills that future teachers must acquire, making them participants in the reflection and decision-making necessary to form their own judgements [5]; third, strengthening formative assessment so that teaching can be adapted to the individual learning needs of students and make them aware of their own learning (metacognition) [6]; fourth, formative interactions of teachers with their students and with each other [7].

Considering the precedents, this research aims to examine to what extent the changes in teaching methodologies advocated by the EHEA have been implemented in Spanish universities. Specifically, it will analyze the changes in teacher training from the perspective of the future professionals currently undergoing training. Additionally, it will be investigated whether future early childhood education teachers perceive the curriculum design, methodology, and evaluation system as more innovative and in line with their future teaching responsibilities.

State of the Art

There are numerous studies that positively assess the application of active methodologies in the university context, as a response to the demands of the EHEA. Likewise, these studies also contrast aspects that contribute very significantly to the university teaching–learning process. López et al. [8] describe an experience using cooperative learning, demonstrating that, at the conclusion of the task, students are the ones who both appreciate and value this practice the most, estimating the high level of learning they have experienced.

Pinto [9] highlights how students positively value the dynamic nature of classes using these methodologies, compared to lectures, as the fact of sharing knowledge with classmates allows them to reach interesting conclusions and enables debate, while valuing the development of interpersonal and group skills. Similarly, García-Berbén [10] and Seivane and Brenlla [11] corroborate the use of active methodologies to actively involve students in learning, and the good learning results of students with interactive classes using dynamics of groups.

The work of Alvarado-Lagunas et al. [12] analyzes the factors that most affect the teaching–learning process from the point of view of the students, concluding that the most valued factors are the interest and commitment of the teaching staff with the work of training and integral development of the student and strategies to master top-tier technological equipment. The work of Bahamondes et al. [13] concludes that the students

of the last year are the ones who value the teaching staff the least, based on the limited variety of class types.

The concept of good teaching practices associated with the characteristics of what can be considered a good teacher is proposed. The effectiveness of teaching is assessed by the impact achieved on learning, obviously, taking as a reference the subject who learns and the context in which said learning is exercised [1]. The results of the meta-analysis carried out by Egert et al. [14] show that improving the quality of training programs is the key to accelerating the development of young children. Tonge et al. [15] emphasize improving the quality of interactions. Other authors [5,6] emphasize the incorporation of authentic assessment processes for learning. In addition, it is necessary to consider, as established by the European Commission [4], the ability to systematically evaluate your own knowledge base and professional practices on a wide range of criteria from practice, theory and research, and critical and receptive attitudes to innovation and professional improvement.

Authors such as Cantón, Valle, and Arias [16], Pegalajar [17], and Segovia [18], among others, emphasize the need for teachers to have sufficient knowledge of the subject they teach. In the case of Segovia, he states how university students perceive that teachers not only master the knowledge of their subject but also interact, during their teaching, between theory and real practice. Similarly, students appreciate that teachers provide the subject syllabus from the beginning, establishing clear and well-defined objectives, as well as assessment methods and criteria [17,18].

Research has shown that students who perceive their teachers as capable of creating a clear and structured learning environment activate teaching processes and encourage students to be aware of their learning and are able to connect what they learn with their previous knowledge, developing their ability to learn to learn [19]. Other studies have shown that an active teaching environment is also related to the quality of relationships in the classroom [20]. Differentiation allows the diverse needs and abilities of students to be addressed and treated in the classroom, which requires a deep understanding of each student and their characteristics as learners, which means that teachers need to spend extra time, provide additional instruction, and reinforce explanations [20]. Teaching–learning strategies should be as varied as possible to promote autonomous learning appropriate to different learning styles [21].

Regarding the most effective teaching evaluation system in teacher training, the works by [8,22,23] consider that formative evaluation is an essential element to renew teaching practice and a good alternative to face the changes demanded by the EHEA. Likewise, it is essential to have adequate evaluation instruments that guarantee the validity and reliability of their results, and that respond to the characteristics of the population to be evaluated, starting from the previous knowledge of the students.

Abella et al. [24] demonstrate that students may initially exhibit some hesitation when formative assessment strategies are employed. Nonetheless, they emphasize a very positive perception of the process, stemming from their knowledge of the evaluation criteria to be applied in the subjects, the clear guidelines for the tasks they need to complete, and the flexibility to adjust the evaluation criteria based on the obtained results [24]. Similarly, Gutiérrez García et al. [25] note that university students consider that continuous assessment is not applied in their learning process. Along the same lines, some variables referring to university students and their impact on the perception of teaching competences are analyzed. Thus, Fernández and Mateo [26] analyzed the gender variable to see if it influences their perceptions of teaching competences. The results indicate that gender does have an influence, in the sense that female students value teaching more, in contrast to Poblete Valderrama et al. [27] and Cea et al. [28] who found no significant differences. On the other hand, according to the findings of Cea et al. [28] and Poblete Valderrama et al. [27], as university students increase their grade, their perception of their teachers decreases.

Assuming the question about what methodological and evaluation aspects are the most valued by future teachers in their training, it can be said that, in general, the training

proposals prioritize learning to teach over analyzing and evaluating, as described by the works of Fernández Arroyo et al. [21] linked to classroom practice [29].

Being aware of the active and leading role that students have in the teaching–learning process, it is essential that the teacher assumes a guiding role and knows how to support and guide students in their learning [30,31].

2. Materials and Methods

The aims of this research are:

1. To analyze the curriculum design and planning process.
2. To analyze the implementation of methodologies in teaching–learning processes.
3. To analyze the evaluation systems carried out by the teaching staff.
4. To analyze the interaction and participation perceived by the students.

All the objectives are set out to find out the students' perception on the degrees and thus establish specific guidelines for the processes of improvement and renewal of the degrees.

The methodological approach adopted is descriptive, ex post-facto, since no type of intervention is carried out on the dependent variables, and inferential, to the extent that comparisons and relationships are used based on the intended objectives.

2.1. Context and Participants

The participants in this study are 1.048 teachers in initial training for a bachelor's degree in early childhood education. In Spain, this program is aimed at training future teachers for children ages 3 to 6. University studies last four years, equivalent to 240 European academic credits (ECTs). ECTs include 25 h: 10 face-to-face hours at universities and 15 h calculated for the volume of work/activities that students carry out individually or in small groups on a non-face-to-face basis. Four Spanish universities participated in the research from the Autonomous Communities of Andalusia (University of Jaen, JA); Community of Madrid (Complutense University of Madrid, CM); Community of Catalonia (University of Rovira Virgili, RV); and Community of Castilla y León (University of Leon, LE). Considering the territorial organization of the Spanish context, four territories or autonomous communities were selected, and subsequently, a public university was selected for each territory for reasons of accessibility. The respondents represent a sample proportional to the population enrolled in teacher training programs in Early Childhood Education at the universities. By university, 38.1% corresponds to the JA, 21.2% to the LE, 19.9% to the RV, and 20.8% to the CM. In terms of gender, 92.2% identify themselves as female, a percentage that coincides with the gender assigned at the enrolment in these studies. The highest percentage of the sample (58.4%) corresponds to the age group between 20 and 25 years old, 31.2% is under 20 years old. These data corroborate the representation of the population since most enrolled students begin after completing secondary school (K–12). Specifically, 7.5% are between 26 and 30 years old and only 2.9% are over 31 years old. Regarding participation by academic year, representation has been achieved in the first two courses: 1st (46.2%) and 2nd (30.2%); in the 3rd and 4th courses there has been less participation since in these courses the students carry out the teaching practices in the educational centers on the dates on which the data were collected and they attend to a lesser face-to-face coordination meeting (3rd year 4.6% and 4th year 19.1%). We therefore find ourselves with a profile of future teachers who are mostly female, and the majority (89.6%) are under 25 years of age.

2.2. Procedure and Measures

The present work is based on the application of a Likert-type questionnaire given to students who are enrolled in the Faculties of Educational Sciences for an Early Childhood Education degree. The data collection was carried out during the months of February to May of the 2020–2021 academic year in the four universities indicated above. Prior to answering the questionnaire, participants were informed of the purpose of the study

and their consent was requested in accordance with Spanish Organic Law 15/1999 on the protection of personal data. Anonymity and voluntary participation of students has always been guaranteed.

For its application, the authors of the work used the coordination/tutoring meetings of the four courses of the university degree to resolve possible doubts and encourage participation in data collection.

The Likert-type questionnaire has five response options from “strongly disagree” (1) to “strongly agree” (5) on a series of statements (items). The midpoint of the scale is 3.0; scores below this digit indicate a poor or very poor implementation status. The instrument consists of three parts: First part: presentation and purpose of the research, guidelines for completion, and acceptance of participation. Second part: sociodemographic data to identify the university, course, gender, and age group. Third part: list of items related to aspects of the teaching–learning processes implemented in universities because of the application of the Bologna Process.

The questionnaire (Appendix A), called DIPE-a (translated into English as Design and Implementation of the Teaching–Learning Process), was constructed based on the “CEMEDEPU” scale (translated into English as Questionnaire for the Evaluation of the Teaching and Evaluation Methodology of University Professors) [32], depending on the intended objectives, follows a graduated sequence of steps: review of the relevant literature on the subject; assessment by expert judgment (construct validity) on the relevance, clarity in the wording, pertinence, and location of each of the items in the dimensions considered; and initial piloting to check whether the wording fits and is understandable in the different application contexts. Initially, a bank of 31 items was developed to cover aspects related to: design/planning, methodology, formative assessment strategies, strategies that favor student participation, and interaction. The contribution of the experts and the pilot application of the questionnaire finally formed 23 items written in a positive way in the indicated dimensions (Table 1). With this, it has been tested to cover the basic aspects that converge in the design and implementation of the teaching–learning process, from the perspective of the student aspiring to teach in early childhood education.

Table 1. Description of the factors and their corresponding number of items.

Factor	Description
F1DPC	Factor 1: Curriculum design/planning of the teaching and learning process (7 items)
F2IC	Factor 2: Curriculum implementation (methodology) (7 items)
F3EEF	Factor 3: Formative assessment strategies (4 items)
F4PI	Factor 4: Strategies that favor participation and interaction (5 items)

2.3. Instrument Analysis

First, exploratory and confirmatory factors analyzing the instrument were performed using the model that best fit the data. Descriptive and inferential analyzes were then carried out.

The factorial composition of the instrument was carried out using the SPSS statistical package (version 25) using the exploratory factor analysis technique and principal components method with varimax rotation. To retain the significant factors that intervene in the design and implementation of the teaching–learning process, three criteria were applied: (a) self-values greater than one, (b) selection of items with factorial weights above 0.35, and (c) selection of factors with a factor load of at least three elements according to the criteria determined by Costello and Osborne [33].

To check whether the data were compatible with the factorial analysis, the KMO (Kaiser–Meyer–Olkin) test of sample adequacy was performed. The result obtained was 0.938, with the Bartlett sphericity test ($p < 0.000$). These data indicate that a systematic covariance exists between items and that the data can be analyzed factorially. After analyzing

the sedimentation graph, a four-component solution was chosen that explained 54.3% of the total variance.

As seen in Table 2, there are two items that did not obtain the minimum load for the assigned factor (F2IC7 and F4PI4). It was decided to keep the first one in Factor 2 because its content is relevant for the construct analysis. In the case of item F4PI4, loads were found in two factors below the minimum proposed (0.35) and we decided to maintain it for reasons of importance of the item and greater affinity of content in Factor 4.

Table 2. Factor loadings.

	Factor 1	Factor 2	Factor 3	Factor 4	Uniqueness
F1DPC1	0.588				0.575
F1DPC2	0.620				0.520
F1DPC3	0.470				0.557
F1DPC4	0.584				0.511
F1DPC5	0.712				0.411
F1DPC6	0.675				0.509
F1DPC7	0.408				0.709
F2IC1		0.511			0.649
F2IC2		0.375			0.843
F2IC3		0.586			0.552
F2IC4		0.567			0.487
F2IC5		0.582			0.541
F2IC6		0.539			0.534
F2IC7					0.778
F3EEF1			0.580		0.593
F3EEF2			0.699		0.479
F3EEF3			0.677		0.398
F3EEF4			0.560		0.480
F4PI1				0.580	0.544
F4PI2				0.517	0.574
F4PI3				0.353	0.664
F4PI4					0.586
F4PI5				0.420	0.509

Note. The applied rotation method was varimax.

To confirm the initial factor structure, several confirmatory factor analyses (CFA) were performed using the structural equation model (SEM) through the JASP program and meeting the criteria indicated by Bollen [34] and Bollen and Long [35]. In terms of the representation of the model with latent and observable factors (see Figure 1) and the assessment of the model's goodness of fit with the indices and range of values set out below, structural equation models were used to test and estimate causal relationships from statistical data (Tables 3 and 4).

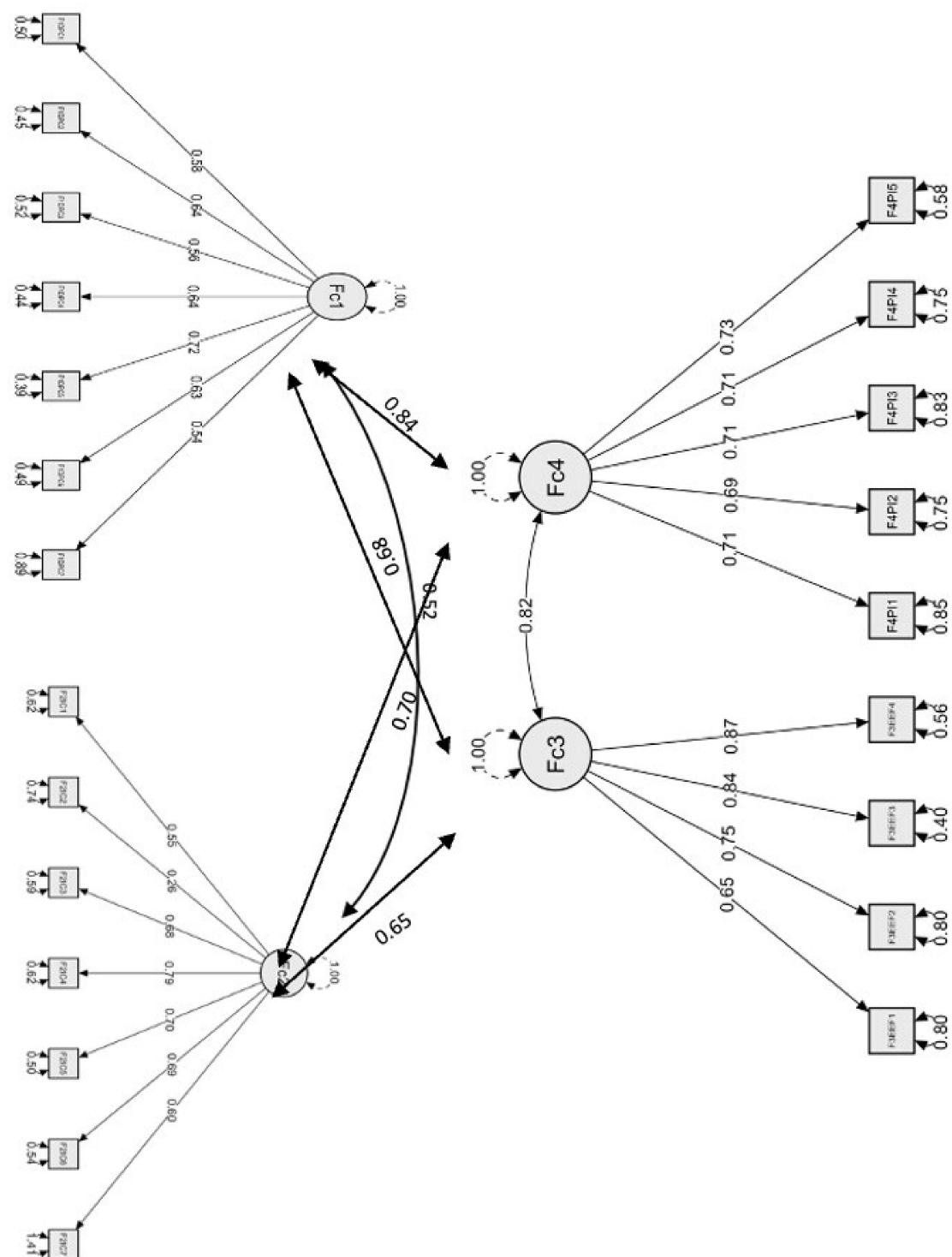


Figure 1. Factor model.

Table 3. Chi-squared test.

	Value	Df	<i>p</i>
Model	539.394	167	<0.001

Table 4. Structural equation modeling.

Factor	Indicator	Factor Loadings				95% Confidence Interval	
		Estimate	Std. Error	z-Value	<i>p</i>	Lower	Upper
Factor 1	F1DPC1	0.577	0.027	21.315	<0.001	0.524	0.630
	F1DPC2	0.641	0.027	23.899	<0.001	0.589	0.694
	F1DPC3	0.595	0.027	22.312	<0.001	0.543	0.647
	F1DPC4	0.648	0.026	24.592	<0.001	0.596	0.699
	F1DPC5	0.699	0.027	26.166	<0.001	0.647	0.752
	F1DPC6	0.603	0.028	21.822	<0.001	0.549	0.657
	F1DPC7	0.553	0.033	16.531	<0.001	0.488	0.619
Factor 2	F2IC1	0.549	0.029	18.909	<0.001	0.492	0.606
	F2IC2	0.232	0.029	7.905	<0.001	0.174	0.289
	F2IC3	0.668	0.030	22.152	<0.001	0.609	0.727
	F2IC4	0.800	0.032	25.222	<0.001	0.737	0.862
	F2IC5	0.678	0.029	23.570	<0.001	0.622	0.735
	F2IC6	0.698	0.029	24.006	<0.001	0.641	0.755
	F2IC7	0.638	0.042	15.340	<0.001	0.557	0.720
Factor 3	F3EEF1	0.636	0.034	18.889	<0.001	0.570	0.702
	F3EEF2	0.743	0.035	21.289	<0.001	0.674	0.811
	F3EEF3	0.840	0.029	28.861	<0.001	0.783	0.897
	F3EEF4	0.875	0.032	27.062	<0.001	0.812	0.938
Factor 4	F4PI1	0.667	0.035	19.029	<0.001	0.599	0.736
	F4PI2	0.663	0.033	20.007	<0.001	0.598	0.728
	F4PI3	0.688	0.035	19.939	<0.001	0.620	0.756
	F4PI4	0.745	0.033	22.794	<0.001	0.681	0.809
	F4PI5	0.758	0.030	25.177	<0.001	0.699	0.817

The reference indices taken to determine the adequacy of the model fit, following Bollen [34] and Bollen and Long [35], were Chi square/degrees of freedom (χ^2/df), comparative fit index (CFI), Tucker–Lewis index (TLI), and root mean square error of approximation (RMSEA). It has been considered, according to the indications of MacCallum et al. [36], that to have an acceptable fit model, CFI and TLI must have a value above 0.90, and RMSEA must be less than 0.08. An RMSEA value of 0.01 indicates excellent fit; 0.05 is indicative of a good fit, while values above 0.08 indicate reasonable model approximation errors [37].

The fit indices obtained are excellent: CFI (0.918) and TLI (0.907) as well as the goodness of fit index (GFI) 0.926. The residual indices of the model (RMSEA *p*-value = 0.011) and the standardized root mean square residual (SRMR: 0.048) also indicate good model fit values.

The following graph shows the factor model:

In this study, a descriptive analysis of the data has been carried out in percentages by subdimensions based on the items that correspond to the four factors identified in the confirmatory factor analysis described in the previous section. Next, the necessary assumptions are analyzed to carry out a hypothesis contrast between the groups according to the research questions of the study. Visual inspection of the QQ plots, analysis of the asymmetry and kurtosis indices, and the homogeneity of variances between groups suggest that the data is distributed with a tendency to normality (Table 5). The asymmetry and kurtosis indices are close to the zero value and below the value 1.96 [34]. The contributions

of Westfall and Henning [38] and Westfall and Arias [39] have been considered to assess the normality of the variables taken individually and compliance with the assumption of multivariate normality through the global Mardia coefficient [40,41]. However, according to Stevens [42], it is advisable to consider these tests of significance together with descriptive statistics to analyze the data with parametric techniques [34].

Table 5. Mardia’s coefficients.

	Coefficient	z	df	p
Skewness	215.460	37,633.594	2300	<0.001
Kurtosis	969.599	188.347		<0.001

After these analyses, the internal consistency (reliability) of the instrument was evaluated using Cronbach’s alpha and McDonald’s omega statistic. As can be seen in Table 6, the indices are very satisfactory.

Table 6. Scale reliability statistics.

	McDonald’s ω	Cronbach’s α
Scale	0.91	0.90
F1DPC	0.93	0.92
F2IC	0.92	0.91
F3EEF	0.72	0.71
F4PI	0.82	0.81

Note. Of the observations, 1048 were used, 0 were excluded listwise, and 1048 were provided.

3. Results

Once the assumptions of a tendency to normality were assumed, we returned to the objectives established to answer the questions based on the analysis of the data obtained. In relation to the first objective: How is the curriculum planning carried out by their university professors perceived by apprentice teachers?

All the items referring to curricular design and planning exceed the median of three, which indicates that they would be adequately planned according to the perception of the students (Figure 2). The most valued items (3.7) according to the aspiring teachers (F1DPC1 and F1DPC6), refer to the information about the program that is going to be taught and the planning and information about the evaluation methods that are going to be used. The least valued item (F1DPC7) considers that the “application of theory to real problems” would be an aspect to review (Table 7).

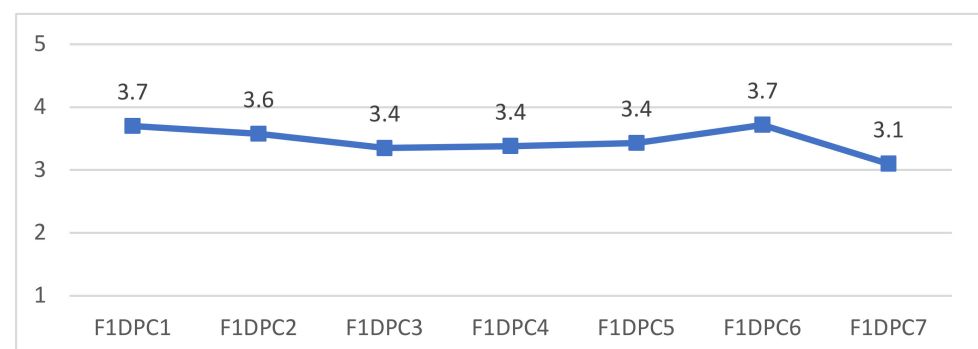


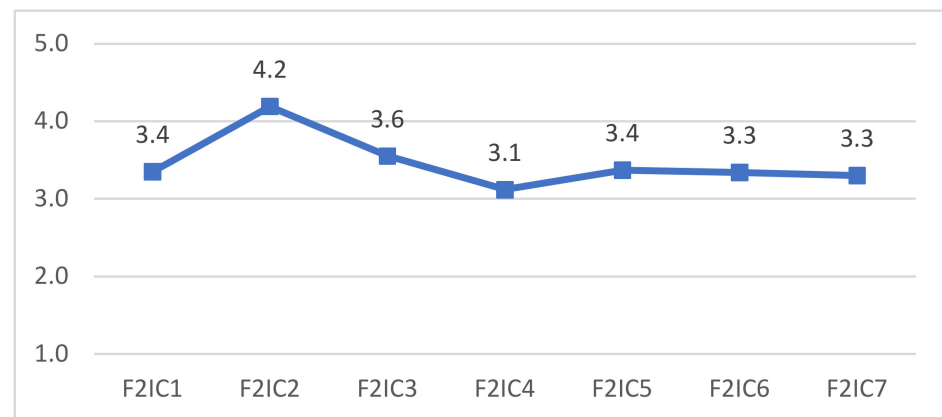
Figure 2. Factor 1: Curriculum design/planning of the teaching–learning process.

Table 7. Descriptive statistics for F1DPC.

	F1DPC1	F1DPC2	F1DPC3	F1DPC4	F1DPC5	F1DPC6	F1DPC7	MeanF1
Mean	3.698	3.580	3.347	3.377	3.431	3.721	3.105	2.938
Std. Deviation	0.917	0.933	0.912	0.922	0.951	0.941	1.086	0.591
Skewness	0.797	0.630	0.439	0.441	0.520	0.819	0.272	0.515
Kurtosis	0.608	0.301	0.013	0.074	0.123	0.557	0.656	0.676

To answer the second objective: What is the association perceived by teachers-in-training between the teaching methods received in their programs and the objectives that guide the Bologna Process? That is, the curricular implementation of the plans.

The most valued item (F2IC2), “A good teacher does not present knowledge as something closed, but as something open to the student’s personal reconstruction and elaboration”. And the least valued, with a 3.1, is the item F2IC4, “The teacher adopts a varied and complementary teaching methodology, adapted to the characteristics of the group of students” (Figure 3). It stands out, however, that all the items of this factor exceed the average of three, so we could say that the situation of having different teaching methods is quite widespread (Table 8).

**Figure 3.** Factor 2: Curricular implementation.**Table 8.** Descriptive statistics for F2IC.

	F2IC1	F2IC2	F2IC3	F2IC4	F2IC5	F2IC6	F2IC7	MeanF2
Mean	3.355	4.190	3.549	3.119	3.374	3.340	3.297	3.461
Std. Deviation	0.959	0.896	1.026	1.113	0.993	1.008	1.032	0.687
Skewness	−0.447	−1.211	−0.576	−0.137	−0.393	−0.371	−0.412	−0.246
Kurtosis	−0.116	1.449	−0.071	−0.723	−0.376	−0.447	−0.403	0.675

Regarding the question: What are the formative evaluation strategies implemented by university professors in the opinion of teachers in initial training?

The most valued item, with an average of three, is the F3EEF4, “the teacher guides the students to improve their results”(Figure 4). The least valued (2.2) is F3EEF1, “the teacher performs an initial evaluation to specify the previous knowledge of the students”. Almost all the items of this factor exceed the average, except for the first question (F3EEF1), which requires a review by university professors (Table 9).

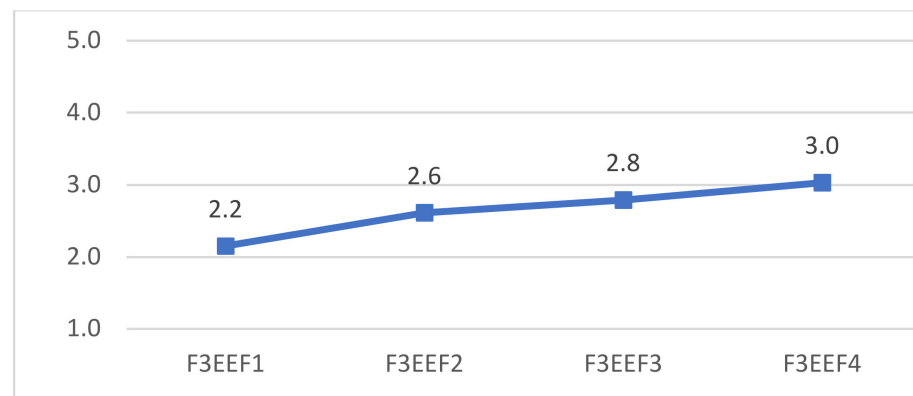


Figure 4. Factor 3: Formative assessment strategies.

Table 9. Descriptive statistics for F3EEF.

	F3EEF1	F3EEF2	F3EEF3	F3EEF4	MeanF3
Mean	2.154	2.612	2.793	3.031	2.647
Std. Deviation	1.105	1.171	1.050	1.147	0.876
Skewness	0.638	0.129	−0.115	−0.149	0.080
Kurtosis	−0.554	−1.011	−0.623	−0.775	−0.556

In the subdimension referring to the strategies that favor participation for effective teaching from the point of view of the student-teachers, the most valued item is F4PI4, “the teacher uses formative/continuous evaluation procedures” (3.2).

The least valued statement, “the teacher uses tutoring with an established advisory work plan, not just waiting for students to come” (F4PI1), confirms the suspicion that tutoring is an underused resource in university teaching (Figure 5). The most valued item is F4PI4, “the teacher uses formative/continuous evaluation procedures” (3.2). However, all the items exceed the average values in the factor (Table 10).

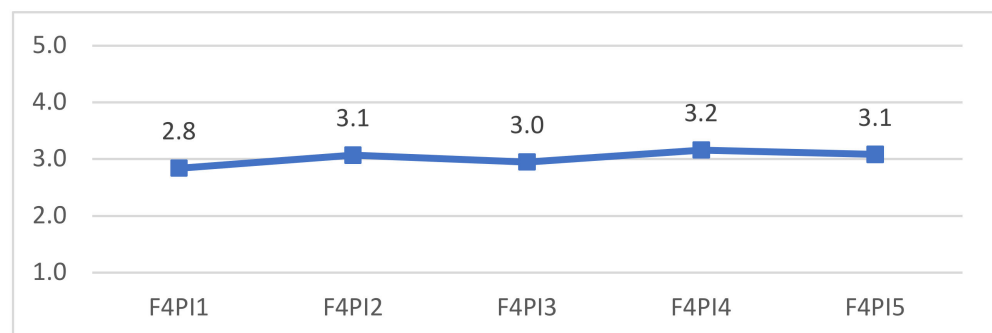


Figure 5. Factor 4: Strategies that favor participation and interaction.

Table 10. Descriptive statistics for F4PI.

	F4PI1	F4PI2	F4PI3	F4PI4	F4PI5	MeanF4
Mean	2.836	3.066	2.947	3.161	3.079	3.018
Std. Deviation	1.162	1.108	1.153	1.121	1.056	0.808
Skewness	−0.076	−0.266	−0.151	−0.349	−0.295	−0.231
Kurtosis	−0.889	−0.765	−0.867	−0.707	−0.622	−0.431

Finally, a comparison of means was made through the ANOVA statistic for the different independent variables considered. The objective is to determine whether there are differences in the subdimensions related to the design, methodology, evaluation, or participation and interaction based on the sex, courses, age, or universities of the responding students. In the case of finding statistically significant differences (<0.001), the post hoc test was applied to specifically determine the group in which the differences were observed. No statistically significant differences were found in terms of sex and age.

Statistically significant differences were observed depending on the year they were taken, in factor 2 (implementation of the methodology) and factor 4 (student participation and interaction), in which 4th year students obtain lower averages (2.49), while in the rest of the courses the average is 3.45.

4. Discussion

Fernández-Fernández and Medinabeitia [43] go so far as to question whether the Bologna plan was implemented. Recently, at university level, we are witnessing a re-thinking of improving teacher assessment, training, and innovation, as demonstrated by ANECA [44]. In this respect, it is of vital importance to know the opinion of their students.

The results of the factors analyzed in this study indicate that the modifications demanded by the European Higher Education Area are being implemented in the training of future teachers [4]. The Strategic Framework for European Cooperation in Education and Training 2021–2030 recognizes the priority of developing a reflective practice that favor the acquisition of competencies in the following areas [45].

The perception of the students regarding the curricular design/planning (factor 1) is adequate; this is evidenced by the fact that all the items assigned to this factor exceed the midpoint of the scale (three). The students positively value having the subject program provided to them at the beginning, establishing clear and well-defined objectives, conclusions that also result from the study by Pegalajar [17]. For their part, González et al. [46] are aware of the importance of incorporating changes in the university curriculum design since competence training not only focuses on the teaching process but also on learning. They emphasize that curriculum design should include individualized student training, a greater relationship between theory and practice and greater links with the workplace. Other research [47,48] details the importance of planning the integration of technological tools to accompany the new methodologies so that they are truly effective in training. The work of Alvarado-Lagunas et al. [12] analyze that among the factors that most affect the teaching–learning process from the students' point of view, is the availability of updated technological equipment and facilities. According to Corbella and Giuliani [49], university students state that the practical application of theoretical contents is currently essential to adapt training to the labor market, as is the implementation of active teaching methodologies, teacher training, and updating of study plans. Although the use of more innovative methodologies, such as teamwork, the use of such as teamwork and the use of digital portfolios, the use of ICT is essential for teachers to improve and update other types of strategies [50].

The results on the implementation of active methodologies in the classroom (factor 2) are satisfactory, with all items exceeding a score of three. The study by López et al. [8] in this sense, demonstrates the high level of learning that students experience when using Tutorial Learning Projects. The study by Pinto [9], highlights the use of cooperative learning together with other active methodologies. For their part, Rodríguez and Álvarez [51], in a study carried out with focus groups with students from the same degree, highlight the students' criticism of traditional methods and their satisfaction with methods that use the strategies of problem situations, simulations, and case studies.

Seivane and Brenlla [11] highlighted that teacher training students positively value having their teachers promote methods that develop deduction and critical thinking skills and promote collaborative learning. Pérez-Ferra et al. [52] also highlight students' difficulties in selecting relevant information, organizing it, and transforming it into knowledge, so

teaching methods should be consistent with strategies that facilitate these skills. Studies such as that of Gargallo et al. [19] establish the positive relationship between methodologies that facilitate the creation of structured environments by teachers and the activation of students' awareness of their learning. In line with the findings, our study also concludes that presenting knowledge as something open to students' personal reconstruction and elaboration, based on their prior knowledge, is a positive aspect that favors metacognition and reflection on their own learning. Thus, Corbella and Giuliani [49] highlighted the need, on the part of university students, to implement more active pedagogies, in which lectures play less of a leading role and a greater practical application of the content can be encouraged. Students demand changes in terms of content, methodologies, and assessment systems that are more in line with the new approach to the teaching process. They demand more practical content applied to the professional field, more active and innovative methodologies that allow them to develop competences and problem-solving skills [2,53], and assessment systems based on self-assessment, co-assessment [54], and feedback rather than just basing the qualification on an exam. In our research, the item (F2IC4) which refers to the need for the methodology to "adapt to the characteristics of the group of students", obtained a lower score than the rest of the items in the factor. In this sense, Fernández-Arroyo et al. [21] obtained similar results by stating the need to differentiate teaching–learning strategies appropriate to the different learning styles of students. Maulana et al. [20] consider that the number of students in the groups should be reduced to create conditions that facilitate the knowledge of each student and their consequent adaptation.

The perception of the evaluation strategies factor has a tendency towards the midpoint of the scale (three) in most of the items. For formative assessment to be effective, it is necessary for the teacher to provide students with descriptive feedback and instructions for improving assignments, not just grades. These recommendations are consistent with the European Commission's [4] approach to strengthening the knowledge and skills of future teaching professionals. Therefore, it is key to continue implementing and researching shared assessment strategies that make students aware of how they learn and the need to reflect on their work from a critical perspective. The results of Boud [5] and MacCallum [6] share these findings on the need to incorporate reflection through assessment as a strategy for continuous improvement. The item that produces the least satisfaction among students in our study refers to the scarce practice of assessing previous content in the different subjects of the curriculum. In the same sense, the results of Gargallo, et al. [19] and Lucas et al. [55] indicate that university students think that their teachers do not detect their initial knowledge, despite this being considered a fundamental step in the assessment process.

The last factor analyzed, referring to the participation and interaction promoted in the classroom by the teaching staff, indicates that scores in the middle of the range of the scale are achieved. It should be noted, however, that tutoring is an underused resource in university teaching. We are unable to provide data on the factors that negatively affect students' spontaneous use of tutoring. Garvis and Sheridan [32] in research with prospective early childhood teachers in Sweden and Australia find that providing opportunities for peer and professional interaction increases critical thinking. Tonge et al. [15] find that facilitating interactions improves the quality of teaching. Seivane and Brenlla [11] found that the skills and attributes best valued by university students in Buenos Aires were teacher attitude, which includes aspects related to teacher beliefs, attitudes, and ways of being that influence the improvement of relationships among students and between teachers and their students. According to the results obtained from the review of the studies, good teachers are those who are receptive to their students, seek to motivate them, take an active interest in their learning, and create an appropriate work and participation climate. Pinto [9], in addition to highlighting students' satisfaction with a good working environment, emphasizes the importance of sharing knowledge with peers, which allows them to debate different positions and deepen their learning.

5. Conclusions

In conclusion, we highlight that it is important that teacher education programs have a positive impact on students and that they are perceived as transparent and coherent with the objectives set by the Bologna Process for EHEA. Therefore, we consider the results of the presented research to be relevant, especially for institutions that train early childhood education teachers. The evaluation of the factors analyzed in this study is still incipient in most university curricula, specifically in the degree program under study. The training of future teachers forces us to rethink the role of the school of the future and the profile of the 21st century teacher. Within this framework, we highlight competences related to skills in the use, management, and creation of materials and technological tools linked to active methodologies and more in-depth learning assessment instruments [47]. Future teachers will be required to take greater responsibility for their own lifelong learning, as a means of updating and developing their own knowledge and skills [4].

For these reasons, it is necessary to continue deepening the implementation of the European Higher Education Area, specifically, to improve the curricular design of teacher curricula. It is proposed to link the skills and contents of the subjects with the real situations of their future work.

6. Limitations and Prospective

The quantitative approach of this work and the collection of data through a Likert scale to measure the observable factors and their latent variables presents a biased simplification of the reality of the teaching–learning processes. We are aware of the need to complement the findings of the present study with information from qualitative instruments that enrich and specify the obstacles that students and teachers encounter in the acquisition of professional competencies. In future studies, we intend to use other qualitative instruments, focus groups, and interviews, that will help us to achieve a deeper and more detailed understanding of university teaching practices for a better implementation of the curricula. Real-time observations or detailed case studies are often necessary to capture classroom dynamics and teacher–student interaction. Once we have detected the foci of attention on problematic variables according to quantitative data, we can direct efforts to illustrate, with concrete examples, through these qualitative tools. The exploration of student trainees' perceptions is loaded with subjectivity that needs to be contrasted with information from other participants. Broadening the perspective by counting on the teachers' point of view will achieve a deeper and more detailed understanding of teaching practices.

The proposals for improvement, on the one hand, are linked to the biases detected in terms of improving the quality of the research itself. Combining quantitative and qualitative approaches will allow us to obtain a more completed and contextualized picture of the object of study. On the other hand, we make suggestions for improvement to those responsible for the accreditation and supervision of teaching degrees based on the quantitative results of the study.

Specifically, to improve the curricular design (factor 1) of teacher curricula, it is proposed to better link and deepen the skills and content of the subjects related to real situations of students' future work. Determine different levels of complexity in professional competencies and determine, in a coordinated manner, the contribution of each subject to these competency levels. The structural reforms of the curricula, moving from a vision with a high conceptual load to a competency-based approach, is a complex process that needs institutional support and time to be able to observe tangible results. As for factor 2, reducing the number of students in the groups would facilitate a better understanding of the students' learning styles and prior knowledge, and therefore the use of active methodologies better adjusted to these conditions. The large student groups ($N = 80$) of these degrees do not facilitate interactions and the possibility of building shared knowledge (factor 4). Planning and monitoring the use of academic tutoring and knowing the factors that negatively affect its use would also help to improve satisfaction and results in this factor. Generating and sharing examples of observation logs, learning rubrics, product analysis grids, and task

and project checklists would facilitate their use by teachers and make evaluation systems more varied and flexible (factor 3).

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Appendix A

Table A1. DIPe-a Questionnaire (translated to English as Design and Implementation of the Teaching–Learning Process).

F2IC1	1.	The professor offers me the opportunity to make personal contributions; for example, asks me to predict results, to propose hypotheses and test them, etc.
F2IC2	2.	A good professor does not present knowledge as something closed, but as something open to the student's personal reconstruction and elaboration.
F2IC3	3.	The professor arranges the class as a learning environment that mobilizes the students' active learning (through problem posing and solving, encouraging student participation, establishing connections with reality, etc.).
F2IC4	4.	The professor adopts a varied and complementary teaching methodology, adapted to the characteristics of the group of students.
F2IC5	5.	The professor uses questions in the classroom in a systematic way to help us think.
F2I6	6.	The professor makes use of case studies and/or simulations in class to enhance the integration of theory and practice.
F2IC7	7.	The professor shows applications of theory to real problems.
F4PI1	8.	The professor uses a tutorial with an established advisory work plan, not just waiting for the students to attend.
F4PI2	9.	The professor's use of information and communication technologies encourages student participation, interactivity, cooperation, etc., through online tutoring, discussion forums, etc.
F4PI3	10.	The professor uses the pedagogical contract as an evaluation method, negotiated with the students, setting the tasks, the products to be produced, the type of exam to be used in the evaluation, etc.
F4PI4	11.	The professor uses formative/continuous assessment procedures (e.g., class questions, assignments, reports, tests, essays, etc.) reviewing and returning corrected written assignments to students with instructions for improvement.

Table A1. Cont.

F4PI5	12.	The professor evaluates not only to assess the student's results but also to obtain information on the learning process and to introduce necessary improvements.
F1DPC1	13.	The professor facilitates the progression of the topic and informs the students about it.
F1DP2	14.	The professor clearly establishes the objectives of his subject.
F1DP3	15.	The professor selects the content that is going to be taught using appropriate criteria (objectives, relevance, usefulness, student interest, etc.).
F1DP4	16.	The professor evaluates the learning according to the objectives established in the planning.
F1DP5	17.	The professor clearly establishes the evaluation criteria for student learning.
F1DP6	18.	The professor informs the students of the evaluation methods that are going to be used.
F1DP7	19.	I know the correction criteria the professor uses for the tests.
F3EEF1	20.	The professor performs an initial evaluation to specify the previous knowledge of the students.
F3EEF2	21.	The professor evaluates at different times during the course to keep track of student learning.
F3EEF3	22.	The professor considers the results of the evaluation to modify the planning, methodology, and teaching activity in the short or medium term.
F3EEF4	23.	The professor guides the students to improve their results.

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