

Article

What Competencies and Capabilities Identify a Good Teacher? Design of an Instrument to Measure Preservice Teachers' Perceptions

Elena Martín-Pastor ^{1,*}, Beatriz Sánchez-Barbero ², Diego Corrochano ^{2,*}  and Alejandro Gómez-Gonçalves ³ 

¹ Department of Didactics, School Organization and Research Methods, University of Salamanca, 37008 Salamanca, Spain

² Department of Didactics of Mathematics Education and Experimental Sciences Education, University of Salamanca, 37008 Salamanca, Spain; beatrizsanchezb@usal.es

³ Department of Geography, University of Salamanca, 37008 Salamanca, Spain; algomez@usal.es

* Correspondence: emapa@usal.es (E.M.-P.); dcf@usal.es (D.C.)

Abstract: Teachers should not only be regarded as professionals with a large amount of knowledge that they must transmit but are also expected to fulfil other functions and possess other qualities to overcome the teaching challenge. This paper is aimed at designing and validating an instrument to identify preservice teachers' perceptions about the competencies and capabilities that a good teacher should have. The study sample is made up of 230 university students who are in their teaching training practises and internships in schools. According to the consulted literature, we elaborated a questionnaire composed of 23 items that are subdivided into four dimensions: personal qualities, training, pedagogical aptitude, and interaction. We analysed reliability (Cronbach's alpha value was 0.924, and, by dimensions, all values were higher than 0.75; the Orion accuracy coefficients by dimensions were all higher than 0.88) and construct validity, obtaining a good quality of the items (with factor loadings above 0.50), after eliminating one of them. We also obtained a high correlation between dimensions; the lowest value is 0.87. We have therefore achieved a final instrument made up of 22 items that helps identify the set of qualities that a good teacher must have and can serve as a guide for the design and planning of their initial and ongoing training.

Keywords: teaching profile; measuring instrument; validation; pre-service teachers



Citation: Martín-Pastor, E.; Sánchez-Barbero, B.; Corrochano, D.; Gómez-Gonçalves, A. What Competencies and Capabilities Identify a Good Teacher? Design of an Instrument to Measure Preservice Teachers' Perceptions. *Educ. Sci.* **2023**, *13*, 789. <https://doi.org/10.3390/educsci13080789>

Academic Editors: María José Hernández Serrano and Laura Alonso Díaz

Received: 30 June 2023

Revised: 27 July 2023

Accepted: 1 August 2023

Published: 3 August 2023



Copyright: © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

A new education law for regulating the workings and organisation of the non-university education system in Spain has recently been approved. Although the suitability of the changes introduced by this law is outside the scope of this study, as university teachers and trainers of future teachers, the door to reflection on the education we deliver to students opens once again. Such education is partly determined by the type of teacher in charge of designing and implementing the teaching and learning processes. Hence, we depart from the assumption that success in education largely depends on teachers' preparation, competence, and attitude [1]. It is therefore no surprise that UNESCO itself [2–4] stresses the extent to which investing in and improving teachers' training as well as their qualifications is fundamental and necessary. Accordingly, many countries engage in rigorous future teacher selection processes where, in addition to pre-selection academic tests, the profiles of the most suitable candidates are analysed.

The purpose of this study is to reflect on the qualities that a teacher should have. It introduces the process of design and validation of an instrument aimed at identifying the competences and capabilities that define a good teacher based on preservice teachers' perceptions during their teaching training practises and internships in schools. The analyses contributed by a variety of authors on the set of characteristics and competences that the

teaching body should gather to perform their professional and academic work under the highest quality standards are used as a basis to define a valid and reliable instrument to specify such qualities.

Certain authors [5] draw attention to the general trend of devaluing the teaching profession for reasons such as constant changes in the area of education as a result of political instability, the separation between theory and research and classroom practises, ambiguity as regards educational goals, and the increasing availability of information resources and tools that undermine the relevance of teachers' roles as holders and conveyors of knowledge. For this reason, other researchers [6] note that collaboration between universities and the education system should be at the core of training programmes so that the most necessary skills and competences that future teachers should have to become great teaching professionals can be identified in the current education context. This approach is also supported by Graell [7], who advocates teacher training from a holistic point of view where, rather than as a product, education is regarded as a lifelong learning process aimed at classroom practise. Hence, the main purpose of any training proposal should be to make the transfer of learning possible in professional practise, bridging the gap between the academic world and the day-to-day reality at education centres or the professional scene [8].

In this regard, it has also been noted that reflecting on the professional profile that is being sought should be the first thing to do when designing and developing a training programme [9]. The issue at stake is what kind of teacher we would like to have. For this purpose, the author suggests a strategic view supported by three variables as a starting point. The first such variable, reality, refers to the context and students we are training. The second is knowledge, which involves reflecting upon the required competences as well as the areas of knowledge that are promoted, developed, and assessed. Finally, what is good revolves around the desired profile and how it materialises. From this viewpoint, the fact that a teacher's initial training involves more than certain studies with a specific content volume is quite clear. In other words, the essential core of such early training would not be complete if it was merely about conveying the subject matter [10]. Teachers themselves are the fundamental basis for teaching; besides qualifying them to deliver knowledge, their competences and skills prepare them to design curricular plans that accommodate the characteristics and needs of different educational contexts and the students who are part of them. Moreover, they should also know how to build and maintain open, flexible, democratic, and culturally rich scenarios that foster a positive learning atmosphere while at the same time promoting their own professional development. Along these lines, certain studies emphasize being motivated by freedom as a key factor in teaching quality [11]. This means that, as long as their training is appropriate, teachers are more engaged and inspired when they can make decisions regarding classroom organisation, methodological teaching strategies, or didactic requirements. Other authors [5,10,12] add further aspects that they consider crucial to a good teacher profile, such as being open-natured and flexible, among others.

According to how the above-described qualities interrelate, three types of teachers can be defined [13]: (1) technical, excessively obsessed with the official curriculum and meeting the requirements established by education authorities; (2) reflective, for whom teaching is a personal and interpretive task; and (3) critical, who aim educational practise towards preparing reflective, inquiring, and intellectually inquisitive individuals. Other authors [14] also describe three teaching profiles that encompass a broader range of traits and characteristics based on which they direct the teaching-learning processes. The first would be the personal and genuine teacher, who regards teaching as an opportunity for personal growth and authenticity without neglecting the need to know his or her students, including their personal and academic backgrounds. The second profile is defined as the history-conveying teacher, who is characterised by enriching lessons with current content, according to the society that provides the system's setting; this teacher's way of delivering knowledge has a positive and long-lasting impact on students. Finally, the learning motivator teacher masters the methods and techniques that foster meaningful learning so that students may learn more and better.

Characterising and measuring the competences and capabilities that a good teacher should have has been a research interest in literature for the last decade, and a variety of methodological approaches have been employed. For example, Tigelaar et al. [15], using the Delphi method with educational experts, validated a framework for teaching competencies in higher education that contained the following domains: the person as teacher, expert on content knowledge, facilitator of learning processes, organiser, and scholar/lifelong learner. Carrasco et al. [16] identified the essential qualities that a competent teacher's profile should encompass using written reflections from pre-service teachers. Five qualities were obtained, which, in turn, comprised more specific traits: personal qualities related to empathy, patience, humbleness, or proactive attitudes; pedagogical aptitude, which entails mastery of the contents and strategies required for teaching; quality of interaction processes with students and their families; type of training promoted; and impact of the teaching activity on students. Moreover, certain authors [17] focused their analysis on the characteristics that an efficient teacher should gather, understanding this as teachers whose personal qualities lead to success while at the same time having a positive impact on students. Their study, which relied on the participation of pre-service and in-service secondary education teachers and employed a questionnaire with open-ended questions, yielded seven categories for the efficient teacher profile: interpersonal relationships, lesson management and development, planning and organisation, area expertise, professional commitment, knowledge transmission, personal ethics, and educational innovation. Shulte et al. [18], based on a multistage mixed-method analysis with an open-ended question answered by college students, identified the characteristics of effective middle-school teachers in the USA. They found that, in addition to content knowledge, there are other characteristics, such as emotional and social competence that are crucial. Jiménez and Navaridas [19] developed an ad hoc questionnaire with open-ended questions to gather the opinions of primary school students about what good teachers are like and what they do. Their results indicate that there is no single, ideal model of a teacher, but children tend to prefer a teacher who is approachable, sensitive, demanding, and enthusiastic, with competences in instructional communication, interaction, planning and management of teaching/learning, and assessment. Moreover, a study carried out by the Agència per a la Qualitat del Sistema Universitari de Catalunya [20] through different types of surveys, aimed at identifying aspects that should be improved in the training of the teaching talent pool to achieve, from the point of view of those who work in early childhood, primary, and secondary education establishments, quality teachers who meet current social demands, emphasises that when hiring new teachers, the most valued aspects are personal, social, and cognitive skills. This study considers that newly certified teachers are lacking in capacities associated with problem solving and decision-making, generation of new ideas and solutions, everyday classroom management skills, design and assessment of teaching and learning processes, and detection and action in cases of academic or socio-familial difficulties. A recently published study based on a survey with open and closed-ended questions also focused on describing the characteristics that a good teaching professional should have from the point of view of in-service teachers [21]. The study underlines the importance of didactic and pedagogical competences while, above all, highlighting personal skills, which are neglected in a large part of the literature. The author remarks that the participants in her research considered this personal aspect of teaching as the key to excellence, and it would encompass "courses of action with regulatory views of what good education is" (p. 185), regardless of theoretical contents and the initial and lifelong training of the teaching body. Due to COVID-19 and the promotion of virtual teaching, some research on teachers' digital competence has been published from the point of view of the need to adapt teaching practises to the new reality of technological advances [22,23]. Finally, Mellado-Moreno et al. [24], employing a validated and calibrated questionnaire, evaluated university teaching quality in Spain. They found that indicators of teaching quality are functions of assessment, attention to diversity, clarity, and control of the educational process, as well as learning, teaching, and assessment resources.

The analysis set out above places us where Sarceda-Gorgoso and Rodicio-García [25] stood when they emphasised the efforts made through different studies and by different authors in an attempt to define the competences and qualities to be met by future teachers. This is why, using a reflective approach as teachers and university-teacher trainers, we have continued to delve into the adequacy of the training provided at universities to meet the demands of centres' educational realities and into the ideas that our students have about the assets that a quality teacher should possess. This is why the main purpose of this study is to design and validate a tool to define what the competencies and capabilities of a good teacher should be from the point of view of university students who are in their teaching training practises and internships in schools. These students have been trained for four years at the university for the degree of teacher in primary education. In addition, they have been trainers and teachers in different schools for five months. Their perspective integrates not only their experience as classroom teachers but also the knowledge learned in the degree. This instrument should meet the required psychometric characteristics of reliability, item homogeneity, and construct validity.

2. Materials and Methods

2.1. Population and Sample

The sample used in this study is composed of preservice teachers who are in their teaching training practises and internships in Early Childhood Education and Primary Education in different schools in Spain. Convenience non-probability sampling was used to obtain a sample of 230 students, mostly women (82.2%), from seven autonomous communities (Castile and León, Andalusia, Balearic Isles, Asturias, Valencian Community, Aragon, and Extremadura); 56.1% were studying for an Undergraduate Degree in Primary Education Teaching, 38.7% were preparing for the Early Childhood Education stage, and the remaining individuals were enrolled in the Double Degree in Teaching. Most of the participants had accessed university studies via secondary education pre-university courses (73.5%), followed by vocational training (23%); only 0.9% had used the over-25 access to university, and 2.6% had performed so through other channels. Finally, it should be noted that 28.2% accessed the undergraduate degree with an average grade of pass, 42.6% with very good, and the remaining part of the sample (29.2%) with a mark of nine or above.

The choice of this study sample was based on classic recommendations that suggest a minimum sample size or ratio and current recommendations that are especially focused on item commonalities. Regarding the former, Comrey and Lee [26] suggested that a sample should include between 200 and 300 individuals to be considered good, while Velicer and Fava [27] suggested that the sample should be ten times larger than the number of items. Among current recommendations, Ferrando and Anguiano-Carrasco [28] and Beavers et al. [29] proposed that sample size is a value that interacts with study data, such as item commonalities. In the case of this study, such values range between 0.40 and 0.70, which means that a sample size comprising between 200 and 250 individuals would be moderate.

2.2. Instrument

Since the purpose of this study is to provide a validated instrument designed to identify what a good teacher is, this and the following subsections are especially important. The instrument includes a total of 23 items that are arranged into four dimensions (Table 2): personal qualities, pedagogical aptitude, interaction processes, and training, which are to be answered using a 1 to 4 Likert-type scale, where 1 means total disagreement and 4 means total agreement.

2.3. Development of the Instrument

Three of the studies mentioned in the introduction [14,16,17] were used as the starting point to develop the instrument. The reason for this choice was that they had all been conducted using university populations and were focused, in the case of Carrasco et al. [16] and Reoyo et al. [17], on defining the qualities that shape the profile of a competent teacher, or,

in the case of Esteban and Mellen [14], on delimiting the different types of teaching profiles that can be found in educational institutions. Moreover, the Undergraduate Degree in Teaching white paper [30] was consulted to establish the teaching profile parameters that underlie the study plans for this certificate at the different Spanish universities. Table 1 shows the correspondence between the dimensions generated in the former three studies and the goals defined by the National Agency for Quality Assessment and Accreditation (ANECA).

Table 1. Comparative chart of teaching profiles.

Carrasco et al. [16]	Esteban and Mellen [14]	Reoyo et al. [17]	ANECA [30]
Personal qualities	Personal and genuine teacher	Interpersonal relationship Professional commitment Personal ethics	<ul style="list-style-type: none"> - Professional capable of analysing the context in which his or her teaching activity takes place and planning it, meeting the needs of a changing society. - Thorough personal training. - Self-knowledge, self-esteem, the ability to build constructive group relationships, and a supportive and democratic attitude.
Training	Personal and genuine teacher	Knowledge of the area Transfer of knowledge	<ul style="list-style-type: none"> - Thorough knowledge of the cycle or stage where the work is to be performed. - Full knowledge of the subject(s) to be taught and the ability to produce coherent disciplinary and interdisciplinary designs. - Training supported by a methodology that is suitable for the teacher/researcher paradigm. - Knowledge of the new training introduced by ICT. - Training to teach in the knowledge society.
Pedagogical aptitude	History conveying teacher Learning motivator teacher	Lesson management and delivery Planning and organising Educational innovation	<ul style="list-style-type: none"> - Mediator to make all activities relevant and encourage each student's development in the context of collaborative group work. - Designer and organiser of disciplinary and interdisciplinary tasks and collaboration with the world outside the school. - Training to fulfil tutoring and guidance functions and to assess students' learning.
Interaction process quality	Personal and genuine teacher History conveying teacher	Lesson management and delivery	<ul style="list-style-type: none"> - Organiser of each student's interaction with the object of knowledge. - Ability to seek synergies with other social agents that may facilitate success in the work performed at school (families, associations, entities, education authorities). - Training for teamwork with the rest of the teaching body. - Social skills and leadership with students.

It should be noted that these studies [14,16,17] drew from qualitative ones where teaching profiles and the qualities that define them are the result of the definitions, thoughts,

and opinions issued by the future teachers that made up the sample. The instrument presented in this quantitative study was built based on dimensions and qualities that had already been identified in previous research to, subsequently, define the items that integrated them.

Accordingly, the instrument is based on the dimensions identified by Carrasco et al. [16] when presenting a theoretical model that delimits each of the areas that define an in-service teacher's profile and that, at the same time, encompasses the qualities and profiles defined in other studies. These are:

- Personal qualities (PQ): a set of traits that define a teacher's personality beyond technical or academic training and that are more associated with personality, behaviour, and attitude.
- Training (T): a teacher's training both in the contents and subjects he or she delivers and in how to do them in the current context. Hence, this not only involves professional knowledge but also the type of knowledge that it promotes.
- Pedagogical aptitude (PA): set of skills required for a teacher to develop any teaching-learning process and functions that derive thereof.
- Interaction (I): a set of skills involved in the relationships that teachers are to establish with their student group, other peers and professionals, families, and agents outside the educational context so that such relations are positive and constructive.

Subsequently, the items were created based on the goals defined by the ANECA [30] and according to their allocation to the selected dimensions (see Tables 1 and 2).

Table 2. Dimensions and items of the originally designed instrument.

Dimensions	Items A Good Teacher Should . . .
Personal qualities (PQ)	PQ1.—Be able to plan his or her teaching activity and adapt it to the context in which it is delivered. PQ2.—Be able to meet the needs of students and peers. PQ3.—Be technically and professionally prepared to fulfil the teaching job. PQ4.—Have democratic principles and values and a social justice mindset. PQ5.—Be able to establish constructive group relationships among students.
Training (T)	T1.—Have thorough knowledge of the education cycle or stage where the teaching activity is to develop. T2.—Have thorough knowledge of the subject or subjects to be taught. T3.—Be able to coherently programme the teaching of the different subjects and know how to relate them to each other. T4.—Have teaching and research training. T5.—Be familiar with the new training processes proposed by information and communication technologies. T6.—Be able to conduct the teaching job in today's society, which is characterised by diversity, innovation, and complexity.
Pedagogical aptitude (PA)	PA1.—Act as a mediator so that every activity is relevant to students. PA 2.—Stimulate students' potential for development. PA 3.—Be able to design and organise multidisciplinary and interdisciplinary work. PA 4.—Be able to collaborate with the world outside the school. PA 5.—Be able to provide students with tutoring and guidance. PA 6.—Be able to assess students' learning.
Interaction (I)	I1.—Be able to establish student-student interactions with the purpose of expanding knowledge. I2.—Be able to establish teacher-student interactions with the purpose of expanding knowledge. I3.—Be able to establish relationships with external agents (families, associations, education authorities, etc.) to facilitate students' educational success. I4.—Be prepared to engage in teamwork with the rest of the teachers. I5.—Have social skills to exercise leadership among students. I6.—Have skills to run student work groups.

Three education experts analysed the items created for each of the dimensions, considering the initial theoretical framework. They were asked to produce an assessment scale taking four characteristics into account: clarity, appropriateness, relevance, and sufficiency [31], assessing each of the characteristics in each item with a value between 1 and 4 (does not meet the standard, low level, moderate level, and high level). Initially, each dimension included six items. Subsequently, upon agreement of the experts, the decision was made to, on the one hand, remove one item from the personal qualities dimensions because of information duplication and, on the other hand, rework the formulation of certain items to avoid technical terms or ambiguous statements [32]. Thus, the resulting instrument is shown in Table 2.

2.4. Data Collection and Analysis to Validate the Instrument

The questionnaire was drawn up in digital format and delivered at the beginning of the 2020–2021 academic year (September–October). The deans and directors of the national university establishments offering Teacher Education degrees were contacted via email, where the aim of the research was briefly explained, a link to the questionnaire was attached, and their collaboration to distribute it among the students enrolled in the faculty or school they managed was requested. The students should be in their teacher training practises in schools. It should be noted that both the presentation letter and the introduction to the assessment instrument itself provided participants with information regarding data anonymity and confidentiality assurance by the research team. A 15-day period was established to gather the answers. Subsequently, a reminder that the possibility of participating was extended for a further seven days was sent. After this, the link to the questionnaire was disabled.

As regards data analysis, precision was verified by analysing the instrument's internal consistency, calculating Cronbach's alpha (α), and using IBM SPSS Amos version 26 software. Likewise, because the variables are scalable, the reliability obtained was verified by calculating the Orion accuracy coefficient values of the polychoric data matrix using the Factor Analysis programme.

The goodness-of-fit of the model initially proposed based on a theoretical model was estimated using IBM SPSS Amos version 26 software to assess construct validity. Confirmatory factor analysis (CFA) was used as a multivariate technique to examine internal structure according to robustness [33], implemented and interpreted based on the indications of [34–37]: CMIN/DF between 2 and 5; GFI, NFI, NNFI/TLI, AGFI, IFI, CFI, and GFI > 0.90; RMSEA and RMR < 0.08; PRATIO, PGFI, and PNFI > 0.70.

3. Results

3.1. Item Reliability and Analysis

Reliability was analysed considering both Cronbach's Alpha (α) and Orion accuracy coefficients. These two measures establish that when values are above 0.70, the reliability of the scale is acceptable [38,39]. Table 3 shows that all the values obtained for these coefficients, both for the full scale and each of the subscales (PQ, T, PA, and I), were above 0.70, which verifies the adequacy of precision through internal consistency on the global scale and on each of the dimensions.

Table 3. Reliability indices.

	Cronbach's Alpha	Orion
Full scale	0.924	
PQ subscale	0.750	0.888
T subscale	0.773	0.899
PA subscale	0.808	0.992
I subscale	0.784	0.958

When analysing the items, it was noticed that if item F4 (“having both teaching and research training”) was removed, Cronbach’s alpha for the full scale increased to 0.925, while the value of subscale F’s index dropped. This led to the decision to continue the analysis with such an item.

3.2. Construct Validity (Confirmatory Factor Analysis)

CFA was performed using structural equation modelling, whose purpose is to analyse the relationships between the variables and factors of the initial model based on the consulted theory [40].

Figure 1 shows the results of the initial structural model for the measurement of the teaching profile of teacher-to-be students based on the theoretical model and the correspondences between the instrument’s latent and observed variables. Covariance structure analysis is used to test whether the items under each factor adequately explain it. This initial measurement model consists of four latent variables (PQ: personal qualities; T: training; PA: pedagogical aptitude; and I: interaction); 23 observed variables (from PQ1 to I6); 23 error terms (from ePQ1 to eI6), always maintaining the variable number scheme shown in Table 2; 23 factor loadings between factors and their corresponding items; 23 regression coefficients between errors and their associated observed variables; and six correlations between latent factors that indicate the scale’s initial theoretical dimensions.

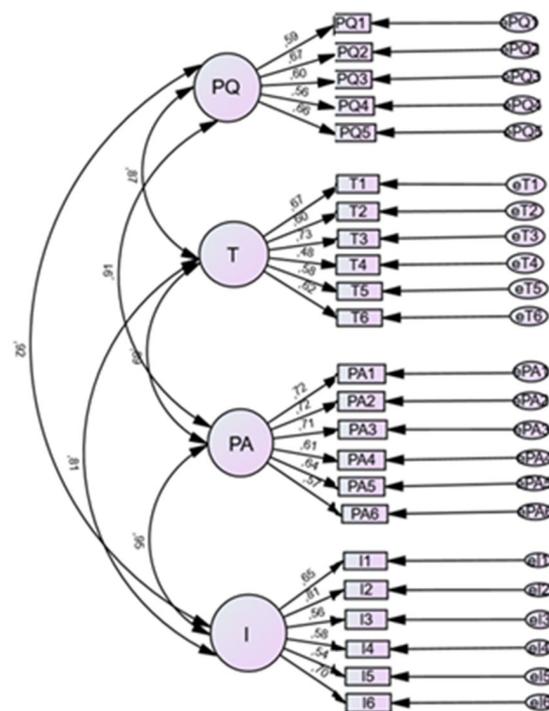


Figure 1. Initial structural model for the measurement of the teaching profile of teacher-to-be students.

Multivariate normality when specifying the model was tested by calculating Mardia’s coefficient, yielding a value of 491.663, which is greater than $p \cdot (p + 2) = 21 \cdot (21 + 2) = 483$, p being the number of observed variables [41]. After proving the non-normality of the data, their scalar nature, and sample size, parameters were estimated using the unweighted least squares (ULS) method, proving sufficiently robust for the case addressed since no atypical values to compromise such robustness were found [42]. The results obtained in the initial structural model revealed a lack of fit for certain indices in the model (see Figure 1). A possible explanation could be the unsatisfactory loading of item T4, which was lower than 0.5 [34]. Since this was what allowed the reliability of the full scale to increase (see the Reliability and Item Analysis Section), it was eventually eliminated.

Attention was also paid to modification indices, since many of them revealed the convenience of certain correlations between errors that made sense from a theoretical point of view, which significantly reduced the value of the chi-square statistic, as can be observed in Table 4.

Table 4. Modification indices.

			M.I.	Par Change
eI5	<-->	eI6	63.294	0.098
eI1	<-->	eI2	39.429	0.030
ePQ1	<-->	ePQ2	7.806	0.020
ePA3	<-->	ePA4	7.647	0.030
ePA2	<-->	ePA5	10.641	0.015
eT1	<-->	eT2	29.013	0.067

After making the appropriate modifications, the final structural model to measure the teaching profile of teacher-to-be students was obtained. The model consisted of 4 latent variables, 22 observed variables, 22 error terms, 22 factor loadings between factors and their corresponding items, 22 regression coefficients between errors and their associated observed variables, and 12 correlations: six between the latent factors that indicate the initial theoretical dimensions and six between the errors according to the modification indices.

The results (Table 5) show that, while there is still no statistical significance, certain fit indices have become substantially modified, which leads to the conclusion that, if such indices confirm the claims of the formerly mentioned authors, we would have a good-fitting model and, therefore, a suitable measurement tool. It should be noted that all the indices associated with incremental fit measures now have values that are higher than or close to 0.9. Being close to 0.9 leaves room for interpretation, and, therefore, an acceptable fit cannot be confirmed. Nevertheless, it may be stated that such values would not compromise the fit of the final structural model. This leads to the affirmation that the measurement model is quite robust.

Table 5. Initial and final model fit indices.

Measurement	Recommended Fit	Initial Structural Model	Final Structural Model	Acceptability
Absolute fit measures				
Likelihood ratio				
Chi-square	$p > 0.05$	$p = 0.000$	$p = 0.000$	Not acceptable
CMIN/DF	2–5	2.824	2.088	Acceptable
GFI	>0.85	0.809	0.866	Acceptable
RMSEA	<0.08	0.089	0.069	Acceptable
RMR	<0.08	0.013	0.010	Acceptable
Incremental fit measures				
NFI	>0.9	0.755	0.894	Acceptable *
NNFI/TLI	>0.9	0.801	0.898	Acceptable *
AGFI	>0.8	0.764	0.828	Acceptable
IFI	>0.9	0.826	0.906	Acceptable
CFI	>0.9	0.824	0.905	Acceptable
GFI	>0.85	0.809	0.866	Acceptable
Parsimony fit measures				
PRATIO	>0.7	0.885	0.887	Acceptable
PGFI	>0.7	0.730	0.772	Acceptable
PNFI	>0.7	0.668	0.711	Acceptable

* Acceptable, with values very close to 0.9 in the final structural model.

Figure 2 shows a final structural model where indicators are confirmed as good since their factor loadings are above 0.50. Furthermore, correlations between errors have substantial and measurable values, the smallest being 0.21. Finally, high correlations are shown between the four dimensions, with the lowest value being that between T and I, which is 0.87, since not every good perception of training ensures good classroom interaction.

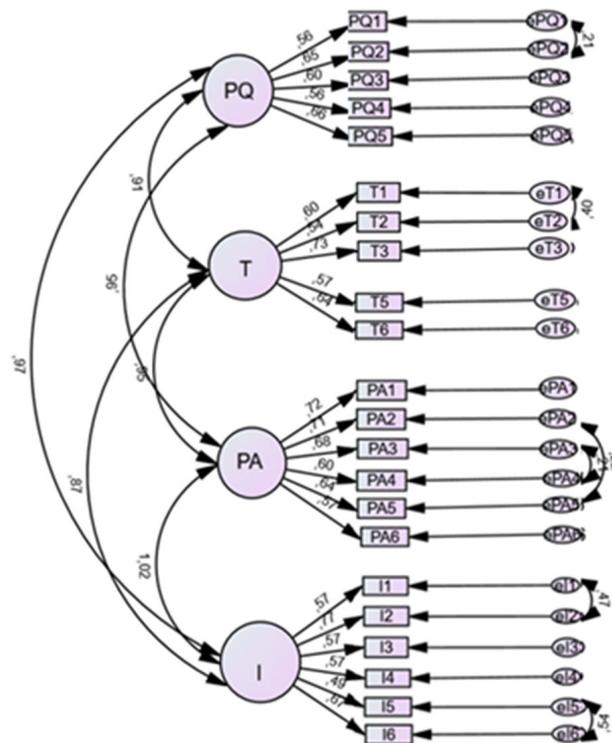


Figure 2. Final structural model for the measurement of the teaching profile of pre-service teachers.

4. Discussion and Conclusions

This study provides the design and subsequent validation of a questionnaire aimed at identifying the competencies and capabilities that a good early childhood and primary education teacher should have from the point of view of preservice teachers. The first questionnaire designed consisted of 23 items divided into four dimensions: personal qualities, training, pedagogical aptitude, and interaction.

CFA has made the explanation of construct validity possible, proving acceptability and a good fit to the initial theoretical model. Nevertheless, this analysis led to the need to remove one of the items from the initial version so that, instead of 23 items, the final model's questionnaire included 22 (Table A1 in Appendix A). It should also be noted that said CFA proves the instrument's validity and the existence and confirmation of a multidimensional configuration capable of measuring the different dimensions that define the profile of a good teacher with a high correlation between each other.

The tool is supported by a theoretical framework that defines the qualities that a good teacher should have from different perspectives [14,16–21,30]. These characteristics can be summarised as a professional who conveys knowledge while at the same time identifying, stimulating, and contributing to the development of students' skills, generating learning situations, innovating, experimenting, and promoting comprehensive training of responsible citizens. The rigour with which the theoretical basis that underpins the instrument has been treated has resulted in a tool with excellent overall reliability and acceptable internal consistency.

The proposed instrument was designed to contribute to the exploration and specification of the characteristics to be met by a good teacher and education professional. Unlike

other tools that analyse the competences and capabilities of a good teacher [15,16,18,19], the questionnaire presented in this article allows for the measurement of these attributes using a 1 to 4 Likert-type scale, which allows a better quantification of those skills that are considered most important. The results yielded using the instrument could be taken into account when considering the passing of a new education law in Spain, especially when this almost inevitably involves the assessment and reconsideration of the figure of the teacher, the qualities and competences that they should have, and, therefore, the role that their initial training plays in their future professional activity [43]. Teacher education, student training, and practicum processes will become more effective, and future iterations of the questionnaire will benefit from continuous improvements based on feedback and insights. A robust and validated questionnaire will promote better learning experiences and contribute to the overall development of educators in the field of education. Furthermore, this questionnaire could be applied in other countries as it analyses the competences of a good teacher that are not linked to a cultural perspective. The items included are not conditioned by the characteristics of a specific educational system.

Nevertheless, the study has certain limitations, such as not considering respondents' social desirability. This is why an appropriate social desirability questionnaire, such as the Marlowe-Crowne one, should be given to the participating subjects in future studies to detect any culturally accepted but strange behaviours that may occur [44]. Besides, it would be advisable to analyse the suitability of the instrument for teachers at other educational stages, such as secondary education or vocational training. Likewise, placing the focus on the study's limitations, it could be stated that, although the sample meets both traditional and current requirements [26,28,29], selecting according to availability could limit the generalizability power regarding aspects linked to sociodemographic variables.

Among the forthcoming tasks is conducting longitudinal studies to track the development of students' skills and perspectives over time. This will provide valuable data for curriculum improvement and long-term programme enhancement. On the other hand, it could be interesting to involve other stakeholders, such as practising educators, mentors, or school principals, in the validation process to ensure that the questionnaire addresses real-world challenges and meets the needs of the education field.

Author Contributions: Contributions for each authors: conceptualization, B.S.-B.; methodology, E.M.-P., B.S.-B., D.C. and A.G.-G.; software, E.M.-P., B.S.-B., D.C. and A.G.-G.; validation, E.M.-P., B.S.-B., D.C. and A.G.-G.; formal analysis, E.M.-P., B.S.-B., D.C. and A.G.-G.; investigation, E.M.-P., B.S.-B., D.C. and A.G.-G.; resources, E.M.-P., B.S.-B., D.C. and A.G.-G.; data curation, E.M.-P., B.S.-B., D.C. and A.G.-G.; writing-original draft preparation, E.M.-P., B.S.-B., D.C. and A.G.-G.; writing-review and editing, E.M.-P., B.S.-B., D.C. and A.G.-G.; visualization, E.M.-P., B.S.-B., D.C. and A.G.-G.; supervisión, E.M.-P., B.S.-B., D.C. and A.G.-G.; Project administration, E.M.-P., B.S.-B., D.C. and A.G.-G.; funding acquisition, E.M.-P., B.S.-B., D.C. and A.G.-G. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Participants were informed and confirmation of participation in the study was requested.

Informed Consent Statement: Informed consent was obtained from all the subjects involved in the study.

Data Availability Statement: The data presented in this study are available on request from the corresponding author.

Conflicts of Interest: The authors declare no conflict of interest.

Appendix A

Table A1. Competences and Capabilities of a Good Teacher.

A Good Teacher Should . . .	1	2	3	4
Be able to plan his or her teaching activity and adapt it to the context in which it is delivered.				
Be able to meet the needs of students and peers.				
Be technically and professionally prepared to fulfil the teaching job.				
Have democratic principles and values and a social justice mindset.				
Be able to establish constructive group relationships among students.				
Have thorough knowledge of the education cycle or stage where the teaching activity is to develop.				
Have thorough knowledge of the subject or subjects to be taught.				
Be able to coherently programme the teaching of the different subjects and know how to relate them to each other.				
Be familiar with the new training processes proposed by information and communication technologies.				
Be able to conduct the teaching job in today's society, which is characterised by diversity, innovation, and complexity.				
Act as a mediator so that every activity is relevant to students.				
Stimulate students' potential for development.				
Be able to design and organise multidisciplinary and interdisciplinary work.				
Be able to collaborate with the world outside the school.				
Be able to provide students with tutoring and guidance.				
Be able to assess students' learning.				
Be able to establish student-student interactions with the purpose of expanding knowledge.				
Be able to establish teacher-student interactions with the purpose of expanding knowledge.				
Be able to establish relationships with external agents (families, associations, education authorities, etc.) to facilitate students' educational success.				
Be prepared to engage in teamwork with the rest of the teachers.				
Have social skills to exercise leadership among students.				
Have the skills to run student work groups.				

References

- Ríos, O.; García, C.; Jiménez, J.M.; Ignatiou, Y. Student teachers volunteering in pre-service programs in successful schools: Contributing to their successful training. *Educ. XXI* **2019**, *22*, 267–287. [CrossRef]
- UNESCO. *Replantear la Educación ¿Hacia un Bien Común Mundial?* UNESCO: Paris, France, 2015.
- UNESCO. *A Review of Evaluative Evidence on Teacher Policy*; UNESCO: Paris, France, 2016.
- UNESCO. *La Educación Transforma Vidas*; UNESCO: Paris, France, 2017.
- Ciudad, M.; Vallejo, M.; Nieto, J.M. La identidad profesional de los docentes de educación infantil. *Ver. Iberoam. Educ.* **2013**, *62*, 1–13. Available online: <https://dialnet.unirioja.es/servlet/articulo?codigo=5879795> (accessed on 8 May 2022).
- González-Pineda, J.A.; San Pedro, J.C.; Rodríguez, C.; Cerezo, R.; González-Castro, P. La formación del profesorado de Educación Infantil y Primaria en el marco del EEES. *Rev. Est. Investig. Psico. Educ.* **2015**, *2*, 1–10. [CrossRef]
- Graell, M. Profesionales del futuro: La formación por competencias a través de la co-presentación. *J. Innov. Res. Plurilingual Pluricultural Educ.* **2020**, *3*, 45–55. [CrossRef]
- Rodríguez-Gómez, D.; Armengol, C.; Meneses, J. La adquisición de las competencias profesionales a través de las prácticas curriculares de la formación inicial de maestros. *Rev. Educ.* **2017**, *376*, 229–251. [CrossRef]
- García-San Pedro, M.J. *Evaluar la Integración de las Competencias en la Universidad*; Mensajero: Bilbao, Spain, 2013.
- Contreras, P. Ser y saber en la formación didáctica del profesorado. *Rev. Interuniv. Form. Prof.* **2010**, *68*, 61–81.
- Han, J.; Yin, H. Teacher motivation: Definition, research development and implications for teachers. *Cogent Educ.* **2016**, *3*, 1217819. [CrossRef]
- Pegajalar, M.C.; López Hernández, L. Competencias emocionales en el proceso de formación del docente de educación infantil. *Rev. Iberoam. Investig. Cambio Efic. Esc.* **2015**, *13*, 95–106.
- Escudero, J.M.; González, M.T.; Rodríguez, M.J. Los contenidos de la formación continuada del profesorado: ¿qué docentes se están formando? *Educ. XXI* **2018**, *21*, 157–180. [CrossRef]
- Esteban, F.; Mellen, T. ¿Por qué quieres ser maestro?, ¿Cómo es un buen maestro? Ideas para la formación universitaria. *Bordón. Rev. Pedagog.* **2016**, *68*, 185–198. [CrossRef]
- Tigelaar, D.E.; Dolmans, D.H.; Wolfhagen, I.H.; Van Der Vleuten, C.P. The development and validation of a framework for teaching competences in higher education. *Hig. Educ.* **2004**, *48*, 253–268. [CrossRef]

16. Carrasco, V.; Hernández, M.J.; Iglesias, M.J. Aportaciones de los maestros en formación a la construcción del perfil del docente competente desde la reflexión en el aula. *Teoría Educ. Educ. Cult. Scdad. Conoc.* **2012**, *13*, 290–316. [[CrossRef](#)]
17. Reoyo, N.; Carbonero, M.Á.; Martín, L.J. Características de eficacia docente desde las perspectivas del profesorado y futuro profesorado de secundaria. *Rev. Educ.* **2017**, *376*, 62–86. [[CrossRef](#)]
18. Schulte, D.P.; Slate, J.R.; Onwuegbuzie, A.J. Hispanic college students' views of effective middle-school teachers: A multi-stage mixed analysis. *Learn. Envir. Resear.* **2011**, *14*, 135–153. [[CrossRef](#)]
19. Jiménez, M.A.; Varaidas, F. Cómo son y qué hacen los “maestros excelentes”: La opinión de los estudiantes. *Rev. Complut. Educ.* **2012**, *23*, 463–485. [[CrossRef](#)]
20. Agència per a la Qualitat del Sistema Universitari de Catalunya. *Empleadores. La Opinión de los Centros Educativos Sobre la Formación del Nuevo Personal Docente*; Agencia per a la Qualitat del Sistema Universitari de Catalunya: Barcelona, Spain, 2021.
21. Alonso-Sainz, T. ¿Qué caracteriza a un “buen docente”? *Percepciones de sus protagonistas. Prof. Rev. Curric. Form. Prof.* **2021**, *25*, 165–191. [[CrossRef](#)]
22. García-Delgado, M.Á.; Rodríguez-Cano, S.; Delgado-Benito, V.; Di Giusto-Valle, C. Digital competence among Teachers of Different Educational Stages in Spain. *Educ. Sci.* **2023**, *13*, 581. [[CrossRef](#)]
23. Torres Barzabal, M.L.; Martínez Gimeno, A.; Jaén Martínez, A.; Hermosilla, J.M. La percepción del profesorado de la Universidad Pablo de Olavide sobre su Competencia Digital Docente. *Pixel-Bit. Rev. Med. Educ.* **2022**, *63*, 35–64.
24. Mellado-Moreno, P.C.; Lacave, C.; Sánchez-Antolín, P.; Molina, A.I. Factors related to teaching quality: A validated questionnaire to assess teaching in Spanish higher education. *Cong. Educ.* **2022**, *9*, 2090189. [[CrossRef](#)]
25. Sarceda-Gorgoso, M.C.; Rodicio-García, M.L. Escenarios formativos y competencias profesionales en la formación inicial del profesorado. *Rev. Complut. Educ.* **2018**, *29*, 157–164. [[CrossRef](#)]
26. Comrey, A.L.; Lee, H.B. *A First Course in Factor Analysis*; Lawrence Erlbaum: Mahwah, NJ, USA, 1992.
27. Velicer, W.F.; Fava, J.L. Effects of variable and subject sampling on factor pattern recovery. *Psychol. Methods* **1998**, *3*, 231–251. [[CrossRef](#)]
28. Ferrando, P.J.; Anguiano-Carrasco, C. El análisis factorial como técnica de investigación en psicología. *Papeles Psicol.* **2010**, *31*, 18–33.
29. Beavers, A.S.; Lounsbury, J.W.; Richards, J.K.; Huck, S.W.; Skolits, G.J.; Esquivel, S.L. Practical Considerations for Using Exploratory Factor Analysis in Educational Research. *Pract. Assess. Res. Eval.* **2013**, *18*, 6. [[CrossRef](#)]
30. ANECA. *Libro Blanco Título de Grado en Magisterio*; ANECA: Madrid, Spain, 2005; Volume 1.
31. Marbán, J.M.; Fernández-Gago, J. Diseño y validación de una escala de autorregulación del aprendizaje en contextos de resolución de problemas. In *Investigación en Educación Matemática XXXIV*; Diago, P.D., Yáñez, D.F., Astudillo, M.T., Carrillo, D., Eds.; SEIEM: Madrid, Spain, 2021; pp. 407–414.
32. Muñoz, J. *Introducción a la Psicometría*; Pirámide: Madrid, Spain, 2018.
33. Muñoz, J.; Fonseca-Pedrero, E. Diez pasos para la construcción de un test. *Psicothema* **2019**, *31*, 7–16. [[CrossRef](#)]
34. Byrne, B.M. *Structural Equation Odelling with AMOS: Basic Concepts, Applications, and Programming*; Lawrence Erlbaum: Mahwah, NJ, USA, 2010.
35. Covert, M.D.; Penner, L.A.; MacCallum, R. Covariance structure odelling in personality and social psychological research. In *Research Methods in Personality and Social Psychology*; Hendrick, C., Clarck, M.S., Eds.; Sage Publications Inc.: New York, NY, USA, 1990; pp. 185–216.
36. Kline, R.B. *Principles and Practice of Structural Equation Odelling*; Guilford Press: New York, NY, USA, 2010.
37. Hair, J.F.; Black, W.C.; Babin, B.J.; Anderson, R.E. *Multivariate Data Analysis*, 7th ed.; Pearson: London, UK, 2014.
38. Cronbach, L.J. Coefficient alpha and the internal structure of test. *Psychometrika* **1951**, *16*, 297–334. [[CrossRef](#)]
39. Pasquali, L. *Instrumentos Psicológicos: Manual Práctico de Elaboração*; LabPAM & IBAPP: Brasilia, Brazil, 1999.
40. León, V.; Fernández-Díaz, M.J. Diseño y validación de una escala para evaluar el funcionamiento de las tutorías en Educación Secundaria. *Rev. Investig. Educ.* **2019**, *37*, 525–541. [[CrossRef](#)]
41. Bollen, K.A. *Structural Equations with Latent Variables*; Wiley: Hoboken, NJ, USA, 1989.
42. Correa, J.C.; Carmona, G.P. Comparación de la regresión Gini con la regresión de Mínimos Cuadrados Ordinarios y otros modelos de regresión lineal robustos. *Comun. Estadística* **2015**, *8*, 129–161. [[CrossRef](#)]
43. Cabano-Delgado, V.C.; Llorent-Bedmar, V.; Navarro-Granado, M. La formación inicial de los profesionales de la educación infantil en Inglaterra, Francia y España. *Prof. Rev. Curric. Form. Prof.* **2020**, *24*, 436–460. [[CrossRef](#)]
44. Gutiérrez, S.; Sanz, J.; Espinosa, R.; Gesteira, C.; García-Vera, M.P. La escala de deseabilidad social de Marlowe-Crowne: Baremos para la población general española y desarrollo de una versión breve. *An. Psicol.* **2016**, *32*, 206–217. [[CrossRef](#)]

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.