Ed Process Int J | www.edupij.com
ISSN 2147-0901 | e-ISSN 2564-8020

EDUCATIONAL PROCESS
INTERNATIONAL JOURNAL

ARTICLE HISTORY
Received *February 23, 2022*
Accepted *May 14, 2022*
Published Online *June 28, 2022*

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How to cite: *Rodriguez, I., Barceló, Mª. L., Poveda, B. & López-Gómez, E. (2022). The Development of Competences in the Teaching Practicum: The Perspective of School Mentors as Assessors. Educational Process: International Journal, 11(2): 7-25.*

RESEARCH ARTICLE

The Development of Competences in Teaching Practicum: Perspective of School Mentors as Assessors

Inmaculada Rodríguez · María-Luisa Barceló · Belén Poveda · Ernesto López-Gómez

ABSTRACT

Background/purpose – This paper aims to examine school mentors' assessments on the degree of competences developed by preservice (candidate) teachers they supervise during teaching practicum (TP).

Materials/methods – A descriptive and cross-sectional study was conducted with a questionnaire applied to 373 school mentors for the evaluation of competences of 989 preservice teachers studying Early Childhood Education or Primary Education degrees at the end of three TP periods conducted in schools located in one region of Spain.

Results – From the perspective of school mentors, this study highlights that preservice teachers' competences are progressively developed during periods of TP in teacher education. The results show a more positive assessment of the school mentors about the development of the preservice teachers' personal competences than their professional competences.

Conclusion – The main contribution of this study is the innovative approach applied to competence development in the TP, based on school mentors as the assessors.

Keywords – teacher practicum, preservice teacher training, practicum supervision, teacher education, school mentor

To link to this article –https://dx.doi.org/10.22521/edupij.2022.112.1

1. INTRODUCTION

Over the past decades, research into teaching practicum (hereafter TP) during initial teacher education has been prolific, as can be seen from various studies that have focused on reviews of the literature to synthesize the topic (Lawson et al., 2015; Mok & Staub, 2021; Nesje & Lejonberg, 2022; Ongrsquo & Jwan, 2009).

Archetypally, despite the different meanings attributed to it, the main goal of TP is to provide preservice teachers with an exploration of the school-based teaching experience, whilst under the supervision of an experienced mentor. TP therefore involves observation as well as participation in an authentic teaching-learning setting in order to gain practical knowledge about the work of a teacher, to apply their university learning, and to become familiar in-practice with the teaching profession (Matengu et al., 2021). A reductive TP conceptualization is to understand it as a compulsory and routine activity to induct new members into a professional community. Furthermore, TP should be conceived in terms of its potential to transform, both for the teacher candidate and for the school mentor as well as the institution as a whole (El Kadri & Roth, 2015). As Darling-Hammond (2006) pointed out, schools are considered learning institutions for two reasons. First, for offering opportunities for teachers to begin to develop the experience they need to be able to work effectively with all students. Second, for providing a different –and more collaborative– way of learning to teach. Therefore, it must be considered that the value of TP is its being a broad-based training activity that improves observation and reflection on what practicing teachers do (Gutiérrez Cuenca et al., 2009), as well as self-analysis of the teaching practice undertaken by the student teacher during this period, bearing in mind that it is a period during which independent professional activity is neither carried out nor expected.

The development of TP as a field of knowledge has evolved from an idea where the practice was initially understood as an action and the application of theory to a much broader vision, where student teachers are able to reflect from within, during, and on the practice itself (Nesje & Lejonberg, 2022). From this perspective, teaching as practice is understood as a source of knowledge from which to back-up the theory learned, and even to improve upon it. Authors such as Darling-Hammond (2006) have emphasized the real challenge for initial teacher education as being how to best encourage learning about and from within such practice. In order to achieve this, it is clearly necessary to address the school-university gap, and between theory and practice which, as Zeichner (2010) highlighted, may otherwise be weakly and ineffectively linked.

It is important to build bridges and establish a working relationship between the university and the school where the TP will take place, establishing co-responsibility and closeness between both institutions and the professionals that will take part in the exercise (Matengu et al., 2021; Poveda et al., 2021). Cooper and Grudnoff (2017) reinforced this idea, by highlighting the need to “revitalize the partnership between schools and universities” on the basis of a genuinely collaborative association that allows both to establish shared objectives and processes in order to support the professional learning of student teachers. In fact, Rodríguez-Gómez et al. (2017) stated that beyond the modality and situation of the practicum, the key is the quality of the training centers and the consolidation of partnership structures between schools and universities, which is in accordance with other studies in the literature (Ben-Harush & Orland-Barack, 2019).

From this central consideration, TP is not –or at least should not be– conceived as merely as a matter of technical knowledge acquisition or practice, but its meaning is

extended to cover teacher candidates' "know-how" and "know-how-to-be" (Lozano-Cabezas et al., 2022). From this perspective, TP is a complementary period (school-based) that alternates with academic training (university-based), where student teachers learn to implement the functions of their professional profile within a real teaching context. In the study by Smith and Lev-Ari (2005), it was highlighted that although a large majority of students evaluate teaching practice very positively, they also place great importance on the more theoretical aspects of teaching training.

In such a way, TP has increasingly been given a more central role in initial teacher education. This is also evident in the importance afforded to TP in curricula design, as well as its implementation and evaluation. All this is reflected in the efforts made to improve the nexus and the partnership between universities and schools; basically, the need to build bridges between theory and practice in teaching. Indeed, TP is given special consideration within the framework of the European Higher Education Area (EHEA), where it is understood that if university degrees aim to develop competences in students, which is also the case with degrees in Early Childhood Education and Primary Education, then alternating teaching practice (schools) with academic training (university) is critical in order to achieve consistent progress in the competence development expected in the graduation profile (Álvarez-Arregui et al., 2008; Mendoza & Covarrubias, 2014).

2. LITERATURE REVIEW

2.1 School mentors as the relevant voice to assess teaching competences

The school is the key context in which to develop competences with tutoring under the supervision of a school mentor (a teacher formally assigned to stimulate the practical training of the student teacher within the specific context of school-based practice). The analysis of TP from the perspective of the school mentor is also a particular topic in the field of teacher education that occupies a preferential place in the overall research on teaching practice in education. A considerable number of research studies have been published both internationally (Allen & Wright, 2014; Choy et al., 2014; Cooper & Grudnoff, 2017; El Kadri & Roth, 2015; Hascher et al., 2004; La Paro et al., 2018) and in the Spanish context (Álvarez-Arregui et al., 2008; Martínez, 2011; Tejada & Ruiz, 2016). These studies cover research into the perceptions of the school mentor and their role as assessor, and also to clarify roles and functions, to propose competency profiles for the training of practice mentors, to identify the training needs of this group, and to provide proposals for achieving greater benefit from their role in terms of student learning. Also noteworthy are some review studies (Burns et al., 2016; Cohen et al., 2013; Lawson et al., 2015) which conducted research syntheses of the state-of-the-art from different approaches.

The school mentor, as an experienced teacher, provides guidance, supervision and support, and also leads the training process, which is geared towards the development of teaching and professional competences, in order that preservice teachers can effectively carry out their future role to the requisite high standard (Zabalza, 2011). The school mentor usually considers a formative approach that allows students teachers to move forwards within their individual and progressive processes, during which they take on the varying roles and tasks that are habitual in teaching practice, with the aim being that the process integrates both their knowledge and performance (Hagger et al., 1993). Through this approach, the school mentor becomes a training model towards the goal of achieving professional teaching competence (Hargreaves & Fullan, 1999).

With the school mentor usually taking on a critical role in this process, it is appropriate to strengthen the educational relationship that exists between mentors and the preservice teachers they are assigned (Lozano-Cabezas et al., 2022; Mena et al., 2016). In the words of La Paro et al. (2018), communication, beliefs and expectations are elements that give meaning to the interprofessional relationship that exists between both. In this way, preservice teachers are guided by their mentor through a facilitating professional learning process, thus avoiding two antagonistic positions; excessive control of student teachers that causes them to over-depend on their mentor, or the opposite, that is, total autonomy without guidance, with both extremes giving rise to a low training potential from the whole practicum exercise (Ben-Harush & Orland-Barack, 2019; Burns et al., 2016). In fact, school mentors who expect student teachers to blindly follow their thoughts and actions or, on the contrary, who delegate and let the trainee teachers take on tasks and responsibilities that are not expected of them, however able the candidate might seem, are doing them no favors. In short, it is about offering an intense level of support in close contact, but with a certain freedom to reflect-act on the part of the students during this critical period of their professional training (Sorensen, 2014).

Therefore, it is essential to analyze the voice of the school mentor (La Paro et al., 2017), as complementary to the student perspective which is the most frequently investigated. Thus, school mentor perspective, as a privileged position due to their key supportive role, could help to formulate a quick mapping of the learning outcomes, in terms of competences, of teacher candidates (Egido & López-Martín, 2016; Grudnoff et al., 2017). In this regard, and considering the relevant role of school mentors, not only to supervise and guide students but also to evaluate student teacher achievement in context (Nesie & Lejoberg, 2022; Ongrsquo & Jwan, 2009), the current research focuses on the assessment of a sample of Spanish mentor teachers on the competences developed by students teachers during their TP in Early Childhood Education and Primary Education bachelor degrees.

Specifically, the current study aims to identify the competences developed in the Early Childhood Education and Primary Education degree programs' teaching practicum from the perspective of school mentors as assessors, and to explore differences considering the variables of TP period and the degree the student teachers are pursuing. Consistent with this aim, answers to the following research questions were sought: (a) What competences do preservice teachers develop during TP from the school mentor´s assessment? and (b) Are there differences in the competences developed according on the students' degree and TP period considering the school mentor's assessment?

3. METHODOLOGY

To answer the research questions of this study and to address the objectives, this article describes a quantitative study that has a prospective observational focus. The research design is cross-sectional (Bourque, 2004).

This section describes the study context and participants, presents the process followed in designing the questionnaire, and provides information about the research procedure and data analysis phase of the study. The results sought were therefore mainly descriptive and explanatory.

3.1 Context and Participants

The current study was conducted at the end of each of the three requisite periods of TP, in the context of the Early Childhood Education and Primary Education bachelor degree programs of a university in Spain.

Two separate 5-week teaching practicum periods, TP-I and TP-II, were developed for implementation during the second and third years of each degree program, respectively. The main objectives were for the teacher candidates to learn from the school as an institution, to analyze the curriculum, to explore the innovative experience, and to observe the organization of the working classroom. Additionally, they were tasked with proposing and developing a practical workshop under the supervision of the school mentor (during TP-I), and to design, develop, and evaluate different didactic sequences for a specific class (during TP-II).

During the second semester of the fourth (final) year of their teaching degree, the teacher candidates undertake the third TP session (TP-III) for a period of 12 weeks. In TP-III, the preservice teachers design, implement, and evaluate didactic processes under the supervision of their school mentor, considering strategies mainly focused on active learning. Interaction and communication processes are applied in the classroom. Social skills are also developed with the students they teach and in the wider school community (i.e., inservice teachers from their assigned practicum school and students' families). Reflective practice is encouraged in order for the teacher candidates to link the theory they have learned at university with practice in the classroom environment, and decision-making is actively promoted by the school mentor.

Considering these three important periods for competence development in preservice teachers and the role of mentors as assessors, 373 school mentors participated in the current study. The participant mentors supervised student TP in 70 different schools (63% public/subsidized schools and 37% private schools) which were all located within one region of Spain. Although the professional profile of the participant mentors was heterogeneous, 60% of them had over 15 years of teaching experience.

The school mentors assessed the personal and professional competences of a total of 989 candidate teachers studying for a bachelor's degree in either Early Childhood Education or Primary Education. Assessments took place after all three requisite teaching practicum periods had been completed, with data collected from a span of 6 academic years (2013-2018). Data for each student were gathered for all three of their TP periods.

Table 1 summarizes the distribution of the assessed students by course, degree, and gender. As can be seen from Table 1, 82.4% of the candidate teachers were female, 63.3% were studying for a Primary Education bachelor's degree, and 42.6% were 2nd-year students having undertaken TP-I).

Table 1. Course/TP period, degree, and gender of students assessed by school mentors

Variables		*n* (%)
Course (TP period)	2nd year (TP-I)	421 (42.6)
	3rd year (TP-II)	315 (31.8)
	4th year (TP-III)	253 (25.6)
	Total	*989 (100.0)*
Degree	Early Childhood Education	363 (36.7)

Variables		*n* (%)
	Primary Education	626 (63.3)
	Total	*989 (100.0)*
Gender	Male	174 (17.6)
	Female	815 (82.4)
	Total	*989 (100.0)*

3.2 Instrument

In terms of the data collection, a questionnaire was designed based on two referents. First, indicators were obtained from a white paper authored by a network of Spanish universities that aimed at proposing the competences associated with teaching degrees adapted to the EHEA (La Agencia Nacional de Evaluación de la Calidad y Acreditación [National Agency for Quality Assessment and Accreditation of Spain], 2005). Second, a review of sources in the Spanish context was conducted to examine survey studies regarding TP (Álvarez-Arregui et al., 2008; Mendoza & Covarrubias, 2014). An initial first draft of the questionnaire was then validated by a team of 10 experts and specialists in TP, who each had extensive experience in teacher education. Each expert used a form to record their assessments, with 1 to 3 points awarded based on the relevance, clarity, and pertinence of each item. Additionally, they were also encouraged to provide their own suggestions.

Following the completion of this process, the final version of the questionnaire consisted of 26 items that covered a wide range of personal and professional competences for teachers (see Table 3). These 26 items were grouped equally under two dimensions. The first dimension addresses the personal competences of teachers, whilst the second addresses their professional competences, and is composed of three subdimensions: "pedagogical capacity" –the art of teaching– which is necessary to encourage the teaching and learning process (five items); "leadership" in order to know how to influence students so that they achieve the required key competences (four items); and "social competence," as a key source in profile of teachers so that they are able to interact in all intervention processes (four items).

The designed and validated questionnaire allows school mentors, as respondents, to assess the personal and professional competences development of their preservice teacher mentees following completion of each of the three TP periods (TP-I, TP-II, and TP-III) using a 4-point, Likert-type scale. The questionnaire also included classification variables for the school mentors (as assessors) (school name, school type, TP period, professional experience) and for student teachers being assessed (degree, course, gender).

3.3 Procedure

The Practicum Office of the Faculty of Education where the research was contextualized contacted the Management team of each school with agreements for the development of TP periods. With their approval, the school mentors were invited to become involved in the current research study. The research participants were then informed about the aim of the study, that their participation was voluntary, and that the responses they would give would remain confidential and reporting anonymized.

The questionnaire was then applied at the end of the three requisite teaching practicum periods for student teachers studying for a bachelor's degree in Early Childhood Education or Primary Education. The TPs took place during the second, third, and fourth year of each bachelor degree program, with data gathered from the 2013 to 2018 academic years. In

total, 989 paper-and-pencil questionnaires were collected, transcribed, and the collected data encoded in a database in order to develop the statistical study.

3.4 Data analysis

Several reliability analyses were applied so as to determine the internal consistency and validity of the questionnaire (Cronbach´s alpha, Guttman's L4, and Spearman-Brown coefficient) as well as exploratory factor analysis (EFA). Descriptive statistical analysis was then conducted using central tendency and variable dispersion measures in order to determine the development of each competence. Graph analysis was used to describe the sample data, and to represent the mean value of each competence.

Inferential analysis was conducted using the Student's *t*-test for two independent samples, single factor Analysis of Variance (ANOVA), and the Bonferroni procedure for multiple comparisons. The level of significance used was $p < .001$. Values for effect size (η^2 and Cohen's d) were calculated and interpreted accordingly (Ellis, 2010).

All of the calculations and graphs were developed using IBM's SPSS v.24.0 analysis program.

4. RESULTS

4.1 Reliability and validity analysis

Cronbach´s alpha ($\alpha = .96$), Guttman's L4 (.94 / .93), and Spearman-Brown coefficient (.88) were all found to be higher than .80, which indicates that the instrument has good internal consistency and that the tool is sufficiently reliable. Although not indicated in Table 2, the results also reveal that no discarded item substantially modified the alpha coefficient value.

Regarding construct validity, the multivariate method of exploratory factor analysis (EFA) was applied. This defines the underlying structure of the indicators, by reducing them and grouping them within different explanatory factors. The items were reduced from 31 to 26, after eliminating five items that had a low level of discrimination with values ≥ .5.

Using exploratory factor analysis, the measuring of sampling adequacy (KMO = .970) was verified as adequate (see Table 2), and Bartlett´s test of sphericity indicated that it was significant ($\chi^2 = 22{,}544.356$; $df = 325$; $p = .000 < .05$). These data show that the null hypothesis can be rejected, and that the responses are substantially related. The level of significance confirms the existence of underlying factors in the data matrix, which justifies the appropriateness of the factor analysis.

Table 2. Reliability and validity analysis

Measure of sampling adequacy	Kaiser-Meyer-Olkin	.970
Bartlett´s test of sphericity	Approx. Chi-square	22,544.356
	df	325
	Sig.	.000
Cumulative percentage of variance	%	73.27
Reliability	Cronbach´s alpha	.96
Factors		4
Items		26

In the analysis, the principal component analysis extraction method (minimum one Eigenvalue) was chosen. The rotated component matrix (Varimax rotation method) was

found to support the factorial structure. The weights of each competence were obtained for each factor and the saturation values of each indicator in each of them in order to determine which had the most explanatory power. All items showed a loading factor greater than .5. The factor analysis grouped the 26 items into four factors. The cumulative percentage of variance was shown to be acceptable (73.27%).

Factor 1: Personal competences had a Cronbach´s alpha of α = .96, which explained 35.39% of the total variance. This analysis shows that the first factor was the most explanatory with respect to the competences developed in the TP from the perspective of the school mentor as assessor. This factor grouped 13 items as follows: "respects teachers, parents, and students" (.854); "has a positive attitude to the tasks assigned" (.839); "keeps students', teachers', and families' information confidential" (.838); "expresses themself clearly" (.825); "encourages students to work independently" (.810); "shows interest in everything that goes on in the classroom" (.806); "interested in becoming familiar with the educational project" (.805); "takes care of non-verbal language" (.795); "orderly and systematic when proposing activities" (.784); "shows responsibility with attendance and punctuality" (.740); "acts as a point of reference for the students" (.722); "knows how to adapt to the center's regulations" (.622); and, "takes the initiative when performing in the classroom" (.560).

Factor 2: Professional competences: pedagogical had a Cronbach´s alpha of α = .937, which explained 15.59% of the total variance. This factor grouped five items as follows: "is constant and perseveres in the work undertaken" (.799); "prepares teaching materials" (.792); "has authority to lead the group" (.759); "Is capable of making creative proposals" (.752); and, "knows how to make decisions" (.719).

Factor 3: Professional competences: leadership had a Cronbach´s alpha of α = .861, which explained 11.98% of the total variance. This factor grouped four items as follows: "enhances the integral development of every student" (.808); "has an entrepreneurial spirit" (.807); "maintains emotional balance in all situations" (.750); and, "recognizes diversity in the classroom" (.713).

Factor 4: Professional competences: social had a Cronbach´s alpha of α = .818, which explained 10.30% of the total variance. This factor grouped four items as follows: "resolves discipline problems" (.660); "takes charge of incidents that happen in the classroom" (.623); "knows how to deal maturely with different situations" (.613); and, "is well disposed to work as part of a team" (.586).

4.2 Competences developed in Practicum: Descriptive analysis by TP period and degree

In order to answer the first research question, a descriptive analysis of the questionnaire responses was conducted. The criterion followed to determine which competences were more developed by the student teachers was considered based on the highest mean value obtained from the school mentors' assessment, both aggregated and disaggregated by course and degree (see Table 3).

The aggregated results show that the school mentors assessed that personal competence was the most developed in the preservice teachers, highlighting "respects teachers, parents, and students" (Item 3, *M* = 3.81, *SD* = .51), "keeps students', teachers', and families' information confidential" (Item 5, *M* = 3.77, *SD* = .61), and "has a positive attitude toward the tasks assigned" (Item 4, *M* = 3.74, *SD* = .65) (see Table 3). Lower assessments of the mentors were found in those professional competences related to leadership, such as "recognizes diversity in the classroom" (Item 20, *M* = 2.88, *SD* = .91), "has

an entrepreneurial spirit" (Item 22, *M* = 2.89, *SD* = .91), "maintains emotional balance in all situations" (Item 19, *M* = 2.91, *SD* = .94), and "enhances the integral development of every student" (Item 21, *M* = 2.91, *SD* = 1.00).

Table 3. Mean and standard deviation of the personal and professional competences: global value and distribution by course/TP period and degree (EC & PE)

		Item	Course/TP Period						Degree				*Global*	
			2nd year TP-I		3rd year TP-II		4th year TP-III		Early Childhood Education (EC)		Primary Education (PE)			
			M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
PERSONAL COMPETENCES		1. Shows responsibility with attendance and punctuality	3.46	.82	3.7	.61	3.79	0.44	3.55	.76	3.65	.65	3.62	.69
		2. Shows interest in everything that goes on in the classroom	3.51	.80	3.79	.51	3.9	0.33	3.62	.71	3.73	.60	3.70	.64
		3. Respects teachers, parents, and students	3.64	.69	3.94	.25	3.94	0.26	3.77	.54	3.83	.50	3.81	.51
		4. Has a positive attitude to the tasks assigned	3.55	.87	3.86	.40	3.92	0.31	3.71	.58	3.76	.68	3.74	.65
		5. Keeps students', teachers', and families' information confidential	3.59	.82	3.88	.37	3.91	0.32	3.74	.51	3.78	.66	3.77	.61
		6. Expresses themself clearly	3.52	.79	3.76	.50	3.85	0.42	3.58	.69	3.74	.61	3.68	.64
		7. Takes care of non-verbal language	3.51	.81	3.75	.55	3.84	0.38	3.55	.75	3.73	.59	3.67	.65
		8. Acts as a point of reference for the students	3.41	.81	3.63	.66	3.86	0.42	3.50	.81	3.64	.64	3.59	.71
		9. Orderly and systematic when proposing activities	3.44	.82	3.71	.53	3.75	0.46	3.51	.76	3.66	.62	3.61	.67
		10. Interested in becoming familiar with the educational project	3.55	.71	3.79	.43	3.88	0.40	3.68	.58	3.73	.57	3.71	.58
		11. Encourages students to work independently	3.49	.92	3.81	.43	3.77	0.45	3.62	.66	3.68	.72	3.66	.70
		12. Knows how to adapt to the center's regulations	3.33	.85	3.73	.53	3.77	0.48	3.50	.75	3.61	.68	3.57	.70
		13. Takes the initiative when performing in the classroom	3.2	.95	3.42	.69	3.66	0.61	3.27	.87	3.45	.78	3.39	.81
PROFESSIONAL COMPETENCE	PEDAGOGICAL	14. Is capable of making creative proposals	2.94	1.06	3.55	.70	3.74	.53	3.30	.89	3.35	.93	3.33	.91
		15. Knows how to make decisions	2.71	.98	3.52	.64	3.64	.60	3.16	.89	3.23	.91	3.21	.90
		16. Is constant and perseveres in the work undertaken	2.86	1.03	3.56	.65	3.77	.52	3.39	.81	3.28	.94	3.31	.90
		17. Prepares teaching materials	3.00	.95	3.65	.63	3.77	.50	3.40	.82	3.41	.85	3.41	.84
		18. Has authority to lead the group	2.90	1.03	3.60	.65	3.76	.52	3.38	.82	3.33	.94	3.35	.90
	LEADERSHIP	19. Maintains emotional balance in all situations	2.42	.89	2.85	.78	3.78	.49	2.90	.94	2.91	.94	2.91	.94
		20. Recognizes diversity in the classroom	2.54	.94	2.68	.68	3.68	.60	2.87	.92	2.88	.91	2.88	.91
		21. Enhances the integral development of every student	2.52	1.06	2.77	.76	3.74	.56	2.74	1.02	3.00	.97	2.91	1.00
		22. Has an entrepreneurial spirit	2.53	.90	2.70	.70	3.75	.52	2.89	.90	2.90	.91	2.89	.91
	CI	23. Takes charge of incidents that happen in the classroom	2.13	.69	3.55	.70	3.74	.56	3.03	1.03	2.97	.98	2.99	1.00

Item	Course/TP Period						Degree				*Global*	
	2nd year TP-I		3rd year TP-II		4th year TP-III		Early Childhood Education (EC)		Primary Education (PE)			
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
24. Resolves discipline problems	3.15	.91	3.49	.68	3.73	.51	3.31	.87	3.45	.74	3.41	.79
25. Knows how to deal maturely with different situations	3.04	.98	3.49	.74	3.77	.44	3.26	.88	3.42	.83	3.37	.85
26. Is well disposed to work as part of a team	3.11	1.02	3.66	.62	3.79	.44	3.32	.87	3.53	.81	3.46	.84

A disaggregated analysis considering TP period shows that 2nd-year bachelor's students, who completed TP-I, were assessed with the highest scores by their school mentors in personal competences, with mean values ranging from *M* = 3.51 to *M* = 3.64 (see Table 3, Figure 1). At the end of the TP-II (third year), the average mean values increased (from *M* = 3.76 to *M* = 3.94), and also at the end of the TP-III (fourth year) the increase was shown to have continued, although to a lesser extent (from *M* = 3.85 to *M* = 3.94). Lower assessments given by the mentors, considering TP period, were related to the leadership professional competence (Items 19-22), especially in the case of the 2nd-year students (after TP-I) and also for students who finished TP-II (third year). After the TP-III period (fourth year), the lowest scores from the school mentors' assessments were distributed among the four competency groups (see Table 3, Figure 1). Also, it was observed that following TP-I, the mentors assessments gave the lowest values by far for the social professional competence ("takes charge of incidents that happen in the classroom," *M* = 2.13; *SD* = .69).

Figure 1 illustrates the student´s competences development profile, as assessed by the school mentors, considering the three TP periods. The results show that the most developed competences were the pedagogical, leadership, and social professional competences, whereas the personal competences were evaluated as highly developed from the first to the last period of practice (see Figure 1).

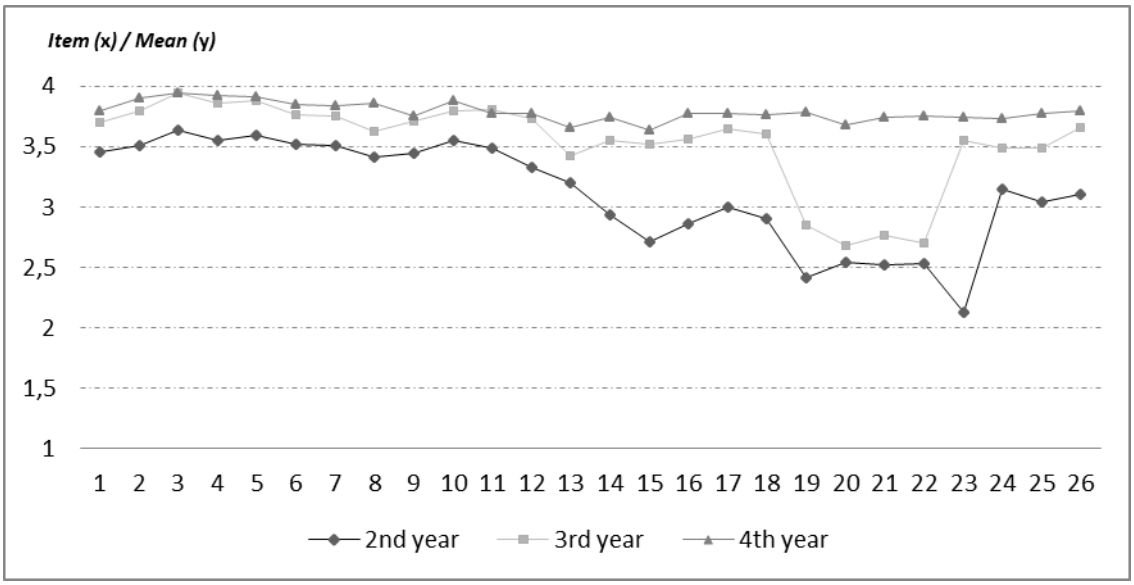

Figure 1. Development of competences by course/practicum period

The disaggregated results considering the degree variable show that the school mentors assessed personal competences with higher scores and the professional leadership competence with lower scores, for both degree types (Early Childhood Education, Primary Education) (see Table 3, Figure 2).

Figure 2 illustrates the competency development profile of the preservice teachers, according to the assessments of their school mentors, considering the degree type. Even though a similar pattern of development was observed for both years, the assessments were shown to be higher for students from the Primary Education degree program for all competences, except for Items 16, 18, and 23.

The descriptive results reported in this section summarize an interesting overview. However, it is also prudent to conduct an inferential study in order to contrast these findings, which is presented in the following section.

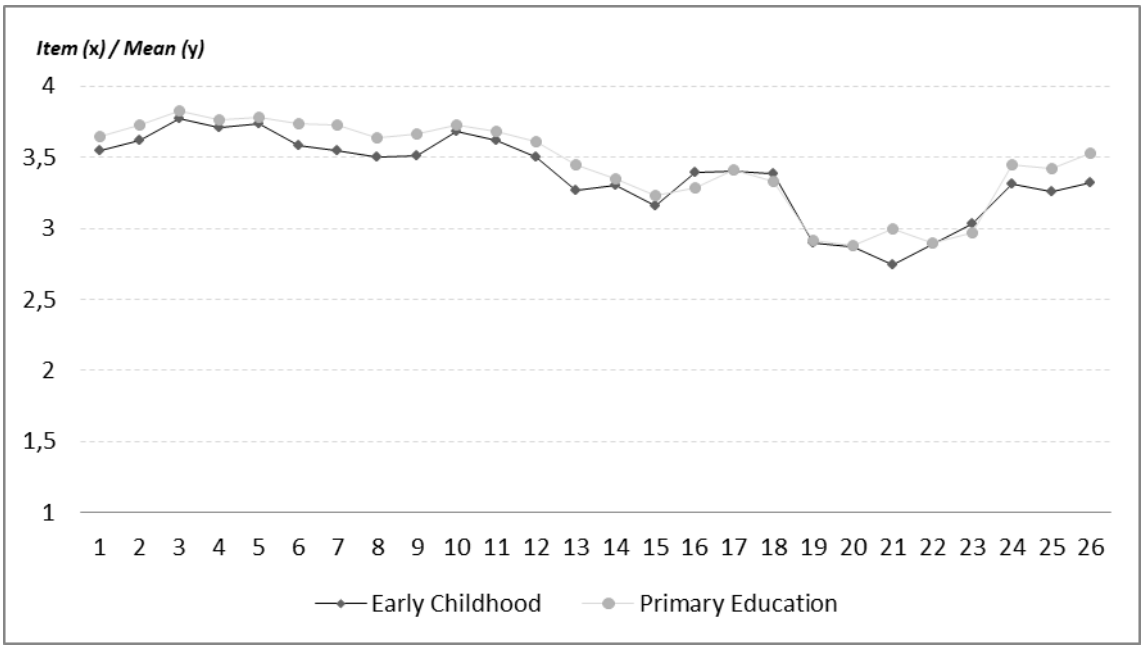

Figure 2. Development of competences by degree

4.3 Development of competences assessed by school mentors: Inferential study by TP period and degree

According to the second research question, an inferential analysis was developed so as to explore significant differences in the development of competences based on the school mentors' assessments, according to degree type and TP period (see Tables 4-5).

Table 4 shows that the mentor´s assessment had significantly lower averages for most competences for the 2nd-year students (after TP-I) when compared to the other groups, with averages ranging from 2.13 to 3.64. In contrast, the 4th-year students (after TP-III) achieved the highest scores to a significant level ($p < .001$) when compared to the other groups, as previously explained in the global descriptive analysis. These results are considered coherent if it is understood that the development of competences is part of a formative continuum that takes place as the degree program progresses along its structured course.

In addition, after applying the Bonferroni procedure, significant values were obtained for all competences, with measures for the effect size (eta score η^2), with the following reference values (Cárdenas & Arancibia, 2014, p. 215): "small" (< .10) for personal

competence and also for Item 24 ("resolves discipline problems), "medium" (< 10, > .25) for pedagogical competence and two items (Item 25, "knows how to deal maturely with different situations"; Item 26, "Is well disposed to work as part of a team"), and large (> .25) for leadership competence and also Item 23 ("takes charge of incidents that happen in the classroom," .56) and Item 19 ("maintains emotional balance in all situations," .33) also having stood out. All of this enables it to be deduced that the differences between the courses are less relevant for the personal competences, moderately relevant for the pedagogical competence, and significantly relevant for leadership competence.

Table 4. Analysis of Variance (ANOVA): personal and professional competences developed by TP period

N = 989		***ANOVA***			
		TP period			
		(P-I, P-II & TP-III)			
	Item	*F*	Sig	*p*	η^2
Personal competence	1	21.89	TP-I < TP-II & TP-III	.000**	.043
	2	35.849	TP-I < TP-II & TP-III	.000**	.068
	3	42.565	TP-I < TP-II & TP-III	.000**	.079
	4	34.422	TP-I < TP-II & TP-III	.000**	.065
	5	30.171	TP-I < TP-II & TP-III	.000**	.058
	6	25.649	TP-I < TP-II & TP-III	.000**	.049
	7	24.653	TP-I < TP-II & TP-III	.000**	.048
	8	35.343	TP-I < TP-II & TP-III	.000**	.067
	9	22.621	TP-I < TP-II & TP-III	.000**	.044
	10	31.799	TP-I < TP-II & TP-III	.000**	.061
	11	23.933	TP-I < TP-II & TP-III	.000**	.046
	12	45.051	TP-I < TP-II & TP-III	.000**	.084
	13	21.89	TP-I < TP-II & TP-III	.000**	.051
	Grouping	*43.915*	*TP-I < TP-II & TP-III*	*.000***	.080
Pedagogical competence	14	84.610	TP-I < TP-II & TP-III	.000**	.146
	15	141.951	TP-I < TP-II & TP-III	.000**	.224
	16	118.456	TP-I < TP-II & TP-III	.000**	.194
	17	102.460	TP-I < TP-II & TP-III	.000**	.172
	18	109.584	TP-I < TP-II & TP-III	.000**	.182
	Grouping	*147.6*	*TP-I < TP-II & TP-III*	*.000***	.230
Leadership competence	19	247.404	TP-I < TP-II & TP-III	.000**	.334
	20	178.647	TP-I < TP-II & TP-III	.000**	.266
	21	164.453	TP-I < TP-II & TP-III	.000**	.250
	22	219.310	TP-I < TP-II & TP-III	.000**	.308
	Grouping	*323.66*	*TP-I < TP-II & TP-III*	*.000***	.400
Social competence	23	629.673	TP-I < TP-II & TP-III	.000**	.561
	24	49.820	TP-I < TP-II & TP-III	.000**	.092
	25	71.274	TP-I < TP-II & TP-III	.000**	.126
	26	74.171	TP-I < TP-II & TP-III	.000**	.131
	Grouping	*224.44*	*TP-I < TP-II & TP-III*	*.000***	.310

Professional competence	*Grouping*	*287.83*	*TP-I < TP-II & TP-III*	*.000***	.370

The comparative analysis, for two independent samples, grouping students by degree type (Early Childhood Education, Primary Education) revealed a significant difference in the mean values of seven of the 13 personal competences, and in four of the professional competences (see Table 5). The lowest scores in all cases corresponded to the students taking a bachelor's degree in Early Childhood Education (see Table 3). The effect size was also calculated (Cohen's d), with small reference values (< .12), so the differences between the groups were not seen to be very relevant (see Table 4).

Table 5. Student´s *t*-test: personal and professional competences developed by degree

N = 989		***Student´s t-test***			
		Early Childhood Education (EC) / Primary Education (PE)			
	Item	*t*	*p*	Sig	*d* Cohen
Personal competence	1	-2.127	.034		
	2	-2.530	.012**	EC < PE	0.08
	3	-1.699	.090		
	4	-1.090	.276		
	5	-1.046	.296		
	6	-3.650	.000**	EC < PE	0.12
	7	-4.079	.000**	EC < PE	0.13
	8	-2.845	.005**	EC < PE	0.09
	9	-3.159	.002**	EC < PE	0.10
	10	-1.071	.085		
	11	-1.199	.231		
	12	-2.179	.030**	EC < PE	0.07
	13	-3.324	.001**	EC < PE	0.11
	Grouping	6.370	.005**	EC < PE	0.08
Pedagogical competence	14	-0.915	.360		
	15	-1.220	.223		
	16	1.831	.067		
	17	-0.145	.885		
	18	0.889	.374		
	Grouping	9.910	.922		
Leadership competence	19	-0.236	.814		
	20	-0.291	.771		
	21	-3.777	.000**	EC < PE	0.12
	22	-0.145	.884		
	Grouping	0.360	.172		
Social competence	23	0.853	.394		
	24	-2.666	.008**	EC < PE	0.08
	25	-2.909	.004**	EC < PE	0.09
	26	-3.630	.000**	EC < PE	0.11
	Grouping	7.380	.017**	EC < PE	0.06
Professional competence	Grouping	0.185	.178		

5. DISCUSSION AND CONCLUSION

The current study aimed to identify the competences developed by preservice teachers during teaching practicum for bachelor degrees in Early Childhood Education and Primary Education, considering the perspective of school mentors as assessors. Additionally, the study also analyzed differences in the competences developed according to the degree taken and the TP period. In order to achieve this aim, a questionnaire was applied that included appropriate psychometric properties in terms of validity and reliability (see Table 2). Four factors emerged that explained 73.26% of the variance (F1: 35.39%, F2: 15.59%, F3: 11.98%, F4: 10.30%), and which directed the data analysis.

This study set out to overcome some of the limitations highlighted in a previous systematic review conducted by Lawson et al. (2015), which revealed that many of the studies developed on TP consider student´s teachers as the primary participants, and most have been contextualized on a small scale and applied a qualitative approach. Thus, the approach in the current study was to consider school mentors' (N = 373) assessments about the development of preservice teachers' competences after finishing each of the requisite three TP periods during bachelor's degree studies for Early Childhood Education and Primary Education, with data from 2013 to 2018.

The school mentors' views that emerged from the data analysis of the competence assessment questionnaire confirmed that TP provides progressive and continuous learning outcomes as the students work through their teaching degree program, and may be said to be in accordance with the existing literature (Poveda et al., 2021; Rodríguez-Gómez et al., 2017). In other words, the current study has shown that mentors perceive continuity in the development of student teachers' competences from the TP applied during the second year (TP-I), third year (TP-II), and the final fourth year (TP-III) (see Figure 1). This confirms the position put forwards by various researchers (Domínguez et al., 2021; Gil-Galván et al., 2021; Holmes et al., 2021; López-Gómez, 2016; Tejada & Ruiz, 2016), that competences develop according to a process rather than a result, which involves the curriculum as a whole within a general training framework.

In order to achieve competence, not only are content and skills needed (knowledge and ability), but competences are developed by way of applying them (by doing) in the formative experience that happens in a particular context during the TP. In doing this, TP provides a pertinent context that enables theory to be linked with practice, in coordination with and complementary to the academic training applied at the university, which provides for a more integrated approach to teacher education (Sanderson, 2016). Thus, the competence achieved during TP goes beyond task-centered learning, due to the highly relevant value to the experience –knowing how to apply existing knowledge within the current situation– and to the activity, because it is the "pretext for" and the "context where" knowledge is integrated (knowledge, skills, and attitudes-values), in its double dimension, theory and practice (López-Gómez, 2016). The results of the current research, contextualized within a model that alternates training at the university and within operational schools, may be said to be coherent with the research by Liesa Orús (2009), who suggested establishing such a model to better organize the delivery of effective preservice teacher education. According to Egido and López-Martín (2016), alternating TP periods can be more beneficial than one longer and more intensive TP (i.e., a longer time, but applied as a single period).

The current study has shown that personal competences obtained the highest scores in the assessments conducted by the student teachers' school mentors, with significant

differences seen by course and some also by the degree being studied. These results identify competences that should be reinforced from the first TP period. In this way, the competences with the lowest score, both in their distribution by course and by degree, are those professional competences with a greater connection to leadership. This fact may be connected with a lower development of such competences during initial teacher education, both in the formative periods at university and during periods of TP, as previous studies have also pointed out (Campbell-Evans et al., 2014). By the time that student teachers undertake TP-III during their fourth and final year of their bachelor studies, there is a greater diversity seen within those competences with lower scores. This shows that by the end of the TP periods and nearing the end of undergraduate studies, the competences with the lowest scores are those where the student, as future teachers, are in need of more intense practical training that facilitates their decision-making, initiative, recognition of diversity, and problem-solving disciplines (see Figure 1). It should be considered, therefore, that developing these competences requires professional learning. On the other hand, the current study highlights that students seeking a degree in Early Childhood Education presented lower scores in terms of their school mentors' assessments, comparatively, than those studying for a degree in Primary Education. This finding suggests the designing of a qualitative study approach is needed in order to investigate the reasons for this.

Future research suggested as a result of the current study could focus on integrating these results by considering other key agents (university supervisor, school coordinator, degree coordinator, etc.), whilst continuing to give voice to school mentors through qualitative research designs focused on improving feedback, and to function as a role model (Choy et al., 2014). Finally, some recommendations arising from this research are related with developing –starting at the initial teacher education stage– those competences that in this case have repeatedly been shown to be assessed as less developed in each of the different TP periods and for different programs of study (see Figures 1-2). Here especially, initiatives should be considered that link theory and practice, before, during, and after the completion of teaching practicum (Nesje & Lejonberg, 2022), through levels of reflection, increasing complexity, and that further describe, analyze, and propose, so as to develop the emerging theory-practice nexus.

DECLARATIONS

Author Contributions: The authors contributed equally to the current research with both data collection and data analysis. All authors have read and approved the published final version of the article.

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

Ethical Approval: No ethical approval was sought as the research process was conducted considering voluntariness, anonymity and informed consent.

Data Availability Statement: The datasets generated and/or analyzed during the current study are available upon reasonable request. The data are not publicly available due to privacy or ethical restrictions.

Acknowledgments: This study was funded by the Villanueva University Research Program in the context of Character Education Research Group, and also was supported by the Research Group ForInterMed (UNED/Ref.125).

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