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Acquisition of professional competences through the curricular practices of the initial teachers training

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Abstract

Internships are an essential element of initial teacher training programmes, contributing not only to student teachers' skill development, but also to their career guidance and job placement. However, there is little empirical evidence about both the factors affecting skills acquisition during in-school internships and the required conditions for assuring the quality of these training periods. The aim of the study presented here is to identify factors promoting better skills development during the internship period within the Early Childhood Education and Primary Education Bachelor's degrees. Factors included are students' sociodemographic characteristics, school ownership, practicum organizational characteristics, students' satisfaction and the perceived impact of internships. The methodology involved applying a questionnaire to a sample of 567 student teachers from primary education (n = 276) and early childhood education (n = 291) degrees in four Catalan universities (two public and two private). The first approach to the available data starts with a univariate and bivariate descriptive

⁽¹⁾ This research was conducted as part of the project "Evaluation of the effects and impact of internships on teacher training and on training centres" (ref. 2014ARMIF00023).

analysis, and then three multiple regression models are developed to determine the relationship between the three types of competencies identified (i.e., relationships and ways of working, classroom management and application of knowledge in practice) and each independent variable. Results confirm not only the perception of a positive impact of internships on the professional development of future teachers, but also that, in addition to the type and period set for the practicum in Bachelor's degrees, the identification of suitable "training schools" and the consolidation of effective school-university cooperative structures are key elements.

Keywords: teachers, initial training, internships, competencies, satisfaction, impact

Resumen

Las prácticas profesionales constituyen un elemento esencial en los planes de formación inicial de maestros, contribuyendo no sólo al desarrollo de competencias, sino también a su orientación profesional y posterior inserción laboral. No obstante, son escasas las evidencias empíricas sobre los factores que propician una mejor adquisición de competencias durante el periodo de prácticas curriculares, así como de las condiciones que se precisan para que estos periodos de formación se den con las máximas garantías. El propósito del estudio que aquí se presenta es identificar los factores que contribuyen a una mejor adquisición de competencias durante el periodo de prácticas curriculares en los Grados de Maestro de Educación Infantil y Maestro de Educación Primaria. Los factores considerados son las características sociodemográficas del alumnado, titularidad de la escuela de prácticas, características básicas del programa de prácticas, satisfacción del alumnado y la percepción de impacto de las prácticas. La metodología utilizada ha consistido en la aplicación de un cuestionario a una muestra de 567 estudiantes de magisterio en educación primaria (n= 276) y educación infantil (n=291) de cuatro universidades catalanas (dos públicas y dos privadas). La primera aproximación a los datos disponibles se inicia con un análisis descriptivo univariante y bivariante y, a continuación, se desarrollan tres modelos de regresión múltiple para determinar la relación entre los tres tipos de competencia identificados (i.e., relaciones y formas de trabajo, gestión del aula y aplicación de conocimientos en la práctica) y cada variable independiente. Los resultados obtenidos confirman no sólo la percepción de impacto positivo de las prácticas sobre el desarrollo profesional de los futuros maestros, sino también que, más allá de la modalidad y situación del practicum en los estudios de grado, la identificación de "centros formadores" adecuados y la consolidación de estructuras de cooperación escuela-universidad eficaces, constituyen elementos claves.

Palabras clave: maestros, formación inicial, prácticas, competencias, satisfacción, impacto

Introduction

One of the main objectives of any training proposal is to facilitate the transfer of knowledge in the professional practice, thereby narrowing the gap between the academic world and the professional world (Correa, 2015; Salmerón, 2013). An analysis of the elements that determine an efficient transfer of knowledge has been and continues to be a constant in research in the field of both initial and continuous training (Grover, 2015; Van den Bossche & Segers, 2013). Many of these studies point to competency-based learning and training as one of the methodological options that most facilitates the transfer of knowledge (Boahin & Hofman, 2014; Grossman & Salas, 2011). For this reason, as indicated by Mendoza and Covarrubias (2014), the adoption of competency-based learning has become one of the core themes in the reconfiguration of the European, and consequently the Spanish university educational system (Chisvert, Palomares & Soto, 2015).

In addition to the discussion about the type of competencies that should be developed in university (Freire, Álvarez & Montes, 2013; Gilbert, Balatti, Tunner & Whitehouse, 2004) and the determination of the factors conditioning their development (Velasco, 2014; Villa, Arranz, Villa & García, 2013), the study of competency-based learning in higher education from a didactic perspective has focused, essentially, on the strategies and activities facilitating its development (Biggs, 2011; Navarro, González, López & Botella, 2015) and on the ways of assessing them (Tejada & Ruiz, 2016; Zlatkin-Troitschanskaia, Shavelson, & Kuhn, 2015).

In the specific case of teacher training, as pointed out by Rosales (2013), competency-based learning must be a factor that fosters professional improvement throughout their career, since it would be utopic to think that in the initial training period each and every one of the skills listed in the specifications of the study plans of the different universities in the Spanish context could be developed in-depth. In this regard, both Rodicio and Iglesias (2011), like Rosales (2013), reveal that the internship is an opportune time to work on the skills that are increasingly required by the labour market.

Although various studies have examined the importance of curricular and professional internships, both for the development of skills and the consolidation of knowledge (Bretones, 2012; Egido & López, 2016; Kilgo, Sheets, & Pascarella, 2015) and for subsequent professional integration

(Helyer & Lee, 2014; Pineda, Agud & Ciraso, 2016), in the case of teacher training, there is practically no research that provides empirical proof of the factors that lead to a better acquisition of skills during the internship period, or the conditions needed so that these training periods take place with the fullest guarantees.

Thus, the aim of the present study is to identify the factors contributing to a greater acquisition of skills during the internship period in the Early Childhood Education and Primary Education Bachelor's degrees. Based on the literature review, the study focuses on the organizational characteristics of the *practicum*, on the satisfaction expressed by the students and, lastly, on the perceived impact on the institutions and people involved in the internship programmes.

Background

Organizational characteristics of the *practicum*

The first action performed by the student in relation to the subject of *practicum*, from the organizational point of view, is to choose the centre where they will do their internship. Although students tend to choose public centres, as pointed out by Bretones (2013), the selection of private and state-subsidised centres is increasing. This change in trend has a certain logic if the internship is understood as pre-employment or as the possibility of obtaining a job once the internship is over. However, some authorized voices believe that the internship should not be linked, at least preferentially, to the job, but to the training, and that therefore, the debate between public and private is a sterile debate (Zabalza, 2004). It would be preferable to offer the school that provides a training plus (e.g., the technology used there, the methodologies employed, the projects undertaken, etc.) over others in which these circumstances are not present even though, on the other hand, employment possibilities may be higher there.

A second aspect that gives rise to controversy in relation to the *practicum* is the way in which it is distributed throughout the training sequence. Several European reports (Caena, 2014; European Commission, 2013) observe that it has mainly been divided across the semesters of the different years with the idea of incorporating the experience acquired in

the schools into the theoretical knowledge acquired at university. This fact pushes into the background the recurrent debate about intensive practices that were being undertaken and that, in some contexts, are still performed continuously in the last semester of the studies.

Zabalza (2011) states that these new proposals for internships, interspersed throughout the degrees, also favour the rest of the subjects since better conditions are provided to foster the development of the subjects and enrich them. At the same time, he points out that the *practicum* will not be beneficial on its own, but in accordance with the coherence between the practical activity performed in the schools and the other elements of the training programme (Zabalza, 2011).

Satisfaction of the students involved

The internship will fulfil its mission if the agents involved (i.e., students, tutors, universities and schools where the internship is taking place) are satisfied with the task and feel that they are duly informed as regards the educational proposal of same and the functions that each agent must develop (D'abate, Youndt & Wenzel, 2009).

Satisfaction regarding the relationship between the institutions (i.e., internship centre or school and university) is, in turn, an important element to take into account (Zeichner, 2010). The schools where the internships are carried out must be able to collaborate, as much as possible, in the organization of the subject, the planning of the intervention, the training contents to be developed and the evaluation and supervision systems, especially if a balance between the institutions is sought, in which both feel participative and committed to the process. For this, it will also be necessary that the group of internship centres be in close coordination with the university institutions, thus facilitating the continuous improvement of academic tutors, school tutors and internship students (Artime & Riaño, 2012; Burguera & Arias, 2011).

Impact of the *practicum* on the institutions and people involved

With the internships as an excuse, collaboration between the school and the university can take place in several spheres, generating a mutual

benefit. On the one hand, the university will have the opportunity to develop educational research adapted to the real needs of current schools, even contextualized to a specific school or to a wider context (Anderson & Shattuck, 2012; Cook, Cook & Landrum, 2013). On the other hand, Selfa (2015) believes that the internships facilitate the construction of knowledge and become a tool to show the complexity of schools. Likewise, the results of the research can guide permanent teacher training processes and support educational innovation projects that emerge from the educational centres themselves.

The role adopted by the school teacher forces them to assume a responsibility that necessarily impacts on their own practice, since it heightens their awareness of their role as teacher and influencer of the behaviour of the student undertaking their internship. We could discuss a bottom-up ascending impact, where the figure of the intern forces the school teacher to be even better in their professional practice, something that will result in an improvement of the host school. If we thus assume that the person who spends more time with the university student and who transfers their knowledge in the practical actions is the tutor of the host school, we must assume that an essential element for this impact is the communication and coordination between the tutors and the university, guaranteeing information in relation to the study plan and respecting the conditions of the *practicum* (Novella, 2011).

Last but not least, we must consider the impact on the students' professional development. Pérez García (2008) corroborates this idea, indicating that students in the Early Childhood Education and Primary Education Bachelor's degrees acquire the professional skills both at university and in the school, although the greater percentage of competency-based knowledge is acquired in the internship period in the school.

Method

The field study of this research took place during the 2014-2015 academic year and consisted of applying a questionnaire to a sample of 567 students from the Primary Education (n=276) and Early Childhood Education (n=291) Bachelor's degrees in four Catalan universities (two public and two private) that cover a wide network of both public and

state-subsidised private internship centres. As regards the distribution of students across the years, although there is a higher presence of students in third year (55.80% in the Primary Education degree and 34.71% in the Early Childhood degree), the sample considers students from the four years of both degrees, affording us a more complete view of the *practicum* over the whole degree.

Measures

Sociodemographic characteristics and characteristics of the internship school. Basic information is requested from the students, about their age, sex, degree in which they are enrolled (i.e., Bachelor's degree in Primary Education and Bachelor's degree in Early Childhood Education), as well as the way they have entered their studies (i.e., secondary education [*Bachillerato*] and university entrance test [*PAU*], vocational training, mature students (over 25 years of age), other qualifications, transfer of records, over 40, over 45). The age variable is recodified in 4 categories (i.e., 20 years more or less, between 21 and 22 years, between 23 and 24 years and 25 years or more, and the variable of how they entered the degree is broken down into three categories (i.e., secondary education [*Bachillerato*] and university entrance test [*PAU*], vocational training and others). Likewise, information about the ownership of the internship schools (i.e., public and private/state-subsidised) is also included.

Characterization of the internship programme. The participants provide information about two basic elements that help to characterize, from a structural point of view, the type of internships that they are undertaking: placement of the *practicum* in the degree studies (i.e., distributed evenly across all the degree studies or in the last two years of the degree); type of *practicum* performed (i.e., extensive, intensive, above types).

Satisfaction with the internship. The students' satisfaction during the teaching-learning process is one of the variables that is usually associated with the development of skills (Gil & Ibáñez, 2013; Morales, Trianes & Casado, 2013). In this regard, a Likert-type scale is generated to reflect the students' satisfaction regarding four aspects: (1) the *practicum* as a subject, (2) the relationship established with the internship centres, (3) the organization of the *practicum* and (4) the information and advertising

of the *practicum*. The principal component analysis (PCA) shows an acceptable factorial structure of the scale (KMO= 0.862 and a significant Barlett test, $p=0.000$) in which the four components observed explain an adequate percentage of the total variance (57.14%). Likewise, the reliability analysis of the four components shows an acceptable Cronbach's α oscillating between 0.695 and 0.840.

Perceived impact of the internship. The participants assess the impact of their internship using another Likert-type scale that takes three aspects into account: (1) the classroom and school activity, (2) the professional development and (3) the school-university relationship. The PCA shows an acceptable factorial structure of the scale (KMO= 0.909 and a significant Barlett test, $p=0.000$) in which the three components observed explain a total variance percentage somewhat higher than in the previous case (64.07%). Likewise, the reliability analysis of the three factors shows an acceptable Cronbach's α oscillating between 0.763 and 0.889.

Skill development. With the aim of assessing the students' skill development, a third Likert-type scale is generated which seeks to reflect the self-assessment of the students in relation to the skills linked to three fields: (1) relations and ways of working, (2) classroom management and (3) the application of knowledge in practice. Once again, the PCA shows an acceptable factorial structure of the scale (KMO= 0.906 and a significant Barlett test, $p=0.000$) in which the three components observed explain an adequate percentage of the total variance (64.74%). Likewise, the reliability analysis of the three factors shows an acceptable Cronbach's α oscillating between 0.827 and 0.841.

Analysis

As indicated, this study analyses the relation between the characteristics of the internship programme, satisfaction with the internship and the perceived impact of the internship and the skill development perceived by the students themselves, controlling for the sociodemographic characteristics and the characteristics of the internship school.

The first approach to the data obtained begins with a univariate and bivariate descriptive analysis of the previous measures (see table 1). Bearing in mind the nature of the variables, appropriate association measures and the corresponding significance tests are used.

Below, three multiple regression models are developed to determine the relation between the internship students' degree of acquisition of the three types of skills identified (i.e., relationships and ways of working, classroom management and the application of knowledge in practice) and each of the independent variables, thereby verifying the independent effects via the statistic control of the rest of the measures considered in the models (see table 2).

The regression coefficients (B), standard errors (S.E.), the t significance test and its corresponding standardised version (Beta) are calculated. The F test and the R² values are used to determine the significance and the global adjustment of the three multiple regression models. No violation of the main assumptions is observed in the development of the regression models. The variance inflation factor (VIF) does not show any evidence of multicollinearity between the variables considered in the models, and the residual analysis can be used to check the hypothesis of multivariate normality.

Results

Table 1 shows that those skills associated with classroom management (i.e., development of interaction and communication processes in the classroom, organization of students, time and spaces, and the fostering of an atmosphere that encourages learning and coexistence) are the most developed skills during the internships in schools ($m=3.46$, $sd=0.57$, on a scale of 1 to 4). However, although the skills linked to relationships and ways of working (i.e., participation in improvement processes, regulating groups' interaction and communication processes, tutorial action and collaboration between different sectors of the educational community and the social setting) present a good assessment ($m=3.06$, $sd=0.65$), they seem to be the ones that benefit the least from the development of the *practicum*.

As regards satisfaction, we observe that the students are very satisfied ($m=3.41$, $sd=0.69$) with the relationship established with the internship centres (i.e., tutorial performed by the school teachers, welcome given by the school) and, on the contrary, the assessment of the organization of the *practicum* (i.e. system of choosing internship centres and information about these, design of the type of *practicum*, placement of

the *practicum* in the framework of the qualification) is not as high ($m=2.64$, $sd=0.61$).

Nevertheless, the perceived impact of the *practicum* on the students' development as future educational professionals seems clear (i.e. identification of the teaching task, professional identity, personal growth, linking theory and practice), with an average assessment of 3.79 ($sd=0.43$) on a scale that oscillates between 1 and 4. From the students' point of view, however, the *practicum* seems to have a low contribution ($m=2.91$, $sd=0.72$) to the improvement or intensification of relationships between the internship schools and the university (i.e., linking school and university staff, developing educational initiatives, incorporating new work practices, keeping university tutors up-to-date, school teacher's reflection on their own teaching practice).

TABLE I. Means, standard deviation and correlations between the variables observed (N=567)

	M	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Skills related to relationships and ways of working (1)	3.06	0.65	-																
Skills related to classroom management (2)	3.46	0.57	0.51 ^d	-															
Skills related to the application of knowledge in practice (3)	3.11	0.62	0.57 ^a	0.35 ^b	-														
Satisfaction with the practicum as a subject (4)	2.91	0.51	0.35 ^b	0.33 ^b	0.39 ^d	-													
Satisfaction with the relationship established with the internship centres (5)	3.41	0.69	0.29 ^a	0.40 ^c	0.27 ^d	0.31 ^d	-												
Satisfaction with the organization of the practicum (6)	2.64	0.61	0.30 ^b	0.21 ^d	0.27 ^d	0.40 ^c	0.14 ^c	-											
Satisfaction with the information about the practicum (7)	2.73	0.58	0.23 ^b	0.25 ^b	0.32 ^d	0.62 ^d	0.13 ^c	0.48 ^d	-										
Perceived impact on the classroom and school activity (8)	3.11	0.64	0.50 ^a	0.40 ^c	0.42 ^d	0.32 ^d	0.28 ^d	0.24 ^d	0.27 ^d	-									
Perceived impact on professional development (9)	3.79	0.43	0.34 ^d	0.47 ^b	0.34 ^d	0.32 ^d	0.28 ^d	0.21 ^d	0.26 ^d	0.36 ^d	-								
Perceived impact on the school-university relationship (10)	2.91	0.72	0.46 ^d	0.33 ^a	0.46 ^d	0.44 ^d	0.27 ^d	0.24 ^d	0.35 ^d	0.71 ^d	0.34 ^d	-							
Age ^a (11)	2.29	1.10	0.08	0.01	0.09 ^a	0.02	-0.08	0.04	0.08	0.03	-0.02	0.06	-						
Sex ^b (12)	0.92	0.27	-0.06	-0.02	-0.04	-0.02	0.01	-0.01	0.04	-0.05	-0.07	-0.05	-0.11 ^a	-					
Degree studies ^c (13)	1.49	0.50	-0.05	-0.03	-0.12 ^b	-0.11 ^b	0.07	-0.19 ^d	-0.20 ^d	-0.04	0.02	-0.11 ^b	-0.17 ^d	-0.26 ^d	-				
Entrance to the degree ^b (14)	1.55	0.63	0.05	-0.02	0.07	-0.01	-0.07	0.04	0.10 ^a	0.03	-0.03	0.11 ^b	0.68 ^d	-0.03	-0.23 ^d	-			
Ownership of the internship school ^b (15)	0.24	0.43	0.02	-0.03	-0.01	-0.01	-0.06	0.10 ^a	0.08	0.01	-0.11 ^a	-0.03	0.08	-0.03	0.10 ^a	0.01	-		
Placement of the practicum in the degree studies ^b (16)	1.48	0.50	0.01	0.03	-0.03	-0.07	0.05	-0.17 ^d	-0.16 ^d	0.01	0.03	-0.06	-0.10 ^a	-0.09 ^a	0.47 ^d	-0.17 ^d	0.14 ^c	-	
Type of practicum performed ^d (17)	2.14	0.75	-0.01	0.07	0.03	0.12 ^a	-0.02	-0.06	0.01	-0.04	0.04	0.01	0.14 ^c	0.03	-0.06	0.04	-0.06	-0.07	-

a p < 0.05; b p < 0.01; c p < 0.001; d p = 0.000.
 e. 1 = "<=20"; 2 = "21-22"; 3 = "23-24"; 4 = ">25"; f. 1 = female, 2 = male; g. 1 = Bachelor's degree in Early Childhood Education, 2 = Bachelor's degree in Primary Education; h. 1 = Bachillerato and PAU, 2 = Vocational qualifications, 3 = Others (Over 25 years of age, other qualifications, transfer of records, over 40 years of age, over 45 years of age, etc.); i. 1 = Public, 2 = Private/State-subsidised; j. 1 = Evenly across all the degree years, 2 = In the last two years of the degree; k. 1 = Extensive, 2 = Intensive, 3 = The two previous types.

If we observe the relations between the different variables presented in table 1, as was to be expected, there is a slightly higher correlation between the three types of skills studied in this research (with values oscillating between 0.51 and 0.57, $p=0.000$).

As regards the explanatory or independent variables, in general, we can observe a weak relation between the different types of satisfaction considered and the dependent variables, with correlations oscillating between 0.21 and 0.40 ($p=0.000$). The relation between the perceived impact of the *practicum* and the skills developed is slightly higher, with values oscillating between 0.33 and 0.50 ($p=0.000$), with the relation between the perceived impact of the *practicum* on the classroom and school activity and the skills linked to relationships and ways of working being more notable ($r=0.50$, $p=0.000$).

The other independent variables considered show very weak relations with the variables related to skill development. Thus, for example, as regards the sociodemographic characteristics of the students, although the relations with skills are extremely weak and not significant in the majority of cases, we can appreciate how the older students ($r=0.09$, $p<0.05$) and those coming from the Early Childhood Education degree ($r=-0.12$, $p<0.01$) consider that, as a result of the *practicum*, more theoretical knowledge is applied in the practice. Lastly, the measures characterising the school (i.e. ownership) and the internship programme (i.e. placement of the *practicum* in the degree studies and type of *practicum* performed) do not show any relation with the students' skill development.

With a view to overcoming the limitations of the bivariate analysis, table 2 shows three parallel multiple regression models, one for each type of skill considered in the study: (1) relationships and ways of working, (2) classroom management and (3) the application of knowledge in practice. As regards global behaviour, the results show that the three models are significant ($F=15.057$, $F=17.559$ and $F=13.528$, all with $p=0.000$) and they have acceptable adjustment levels ($R^2=0.346$, $R^2=0.381$ and $R^2=0.322$, respectively).

If we further explore the analysis of the abovementioned bivariate relations, the multiple regression models show that, in general, the sociodemographic variables and the ownership of the school are not associated with the development of skills during the internship periods. Exceptionally, it can be observed that those students who are in the

natural age to finish their degree studies (between 21 and 22 years of age) develop more skills associated with relationships and ways of working (Beta=0.124, $p<0.01$) in particular. Likewise, once the effects of the other variables considered in the models have been controlled for, we can observe how, in relation to the characterization of the *practicum*, only the type of *practicum* performed and, specifically, those *practicum* programmes that combine intensive and extensive periods seem to be statistically associated, although weakly, with a greater development of the skill of application of knowledge in practice (Beta=0.012, $p<0.05$). In any case, as we will see below, if we observe the relative size of the standardised coefficients, it is important to highlight that, bearing in mind the three parallel regression models, the satisfaction and the perceived impact of the *practicum* by the students are the factors that show greater effects.

In this regard, the increase in the satisfaction levels reported by the students, both in relation to the *practicum* as a subject (Beta=0.099, $p<0.05$), in the relationship established with the internship centres (Beta=0.116, $p<0.01$) and in the organization of the *practicum* (Beta=0.114, $p<0.001$), is a significant predictor of the development of skills liked to relationships and ways of working. On the contrary, in relation to classroom management, only satisfaction with the relationship established with the internship centres is significantly associated (Beta=0.226, $p=0.000$). Lastly, as regards the students' satisfaction, we can observe that, once again, a positive assessment of the *practicum* as a subject (Beta=0.104, $p<0.05$) and of the relationships with the internships centres (Beta=0.092, $p<0.05$) is significantly associated with a greater application of knowledge in practice.

TABLE II. Multiple regression models for the skills developed by the students during the practicum

	Relationships and ways of working (1)			Classroom management (2)			Application of knowledge in practice (3)		
	B (S.E.)	Beta	t	B (S.E.)	Beta	t	B (S.E.)	Beta	t
Constant	0.215 (0.236)	-	0.914	0.298 (0.202)	-	1.480	0.386 (0.239)	-	1.690
Age									
20 years or younger	0.174 (0.066)	0.124	2.629b	0.004 (0.057)	0.004	0.079	0.066 (0.064)	0.049	1.020
Between 21 and 24 years	0.123 (0.088)	0.074	1.393	0.027 (0.075)	0.018	0.354	0.129 (0.086)	0.082	1.506
25 or older	0.129 (0.096)	0.080	1.393	0.031 (0.082)	0.022	0.383	0.094 (0.093)	0.061	1.010
Sex									
Female	0.111 (0.095)	0.045	1.178	0.038 (0.081)	0.017	0.467	0.007 (0.092)	0.003	0.075
Male	-	-	-	-	-	-	-	-	-
Degree studies									
Bachelor's degree in Early Childhood Education	-0.046 (0.060)	-0.036	-0.772	-0.036 (0.051)	-0.031	-0.699	-0.069 (0.058)	-0.056	-1.199
Bachelor's degree in Primary Education	-	-	-	-	-	-	-	-	-
Entrance to the degree									
Bachillerato and PAU	-0.030 (0.073)	-0.023	-0.409	0.017 (0.063)	0.015	0.270	0.023 (0.071)	0.018	0.327
Vocational training	-0.049 (0.115)	-0.019	-0.426	-0.129 (0.099)	-0.056	-1.302	-0.088 (0.112)	-0.036	-0.789
Other (mature students (over 25 years of age), other qualifications, transfer of record, over 40 years of age, over 40 years of age, etc.)	-	-	-	-	-	-	-	-	-
Ownership of the internship school									
Public	0.043 (0.057)	0.029	0.761	0.019 (0.049)	0.014	0.393	0.018 (0.055)	0.012	0.323
Private/ Statesubsidised	-	-	-	-	-	-	-	-	-
Placement of the practicum in degree studies									
Distributed evenly across all the degree studies	0.067 (0.056)	0.052	1.199	0.093 (0.048)	0.081	1.942	0.040 (0.054)	0.033	0.744
In the last two years of the degree	-	-	-	-	-	-	-	-	-
Type of practicum performed									
Extensive	-0.086 (0.065)	-0.066	-1.328	0.088 (0.056)	0.007	0.151	0.012 (0.063)	0.010	0.249
Intensive	-0.033 (0.066)	-0.024	-0.496	0.097 (0.056)	0.082	1.733	0.016 (0.064)	0.012	2.025a
Both (extensive and intensive)	-	-	-	-	-	-	-	-	-
Satisfaction with the practicum as a subject									
Public	0.129 (0.065)	0.099	1.965a	0.038 (0.056)	0.033	0.681	0.129 (0.064)	0.104	2.025*
Private	-	-	-	-	-	-	-	-	-
Satisfaction with the relationship established with the internship centres									
Public	0.108 (0.037)	0.116	2.911b	0.217 (0.032)	0.266	6.850d	0.082 (0.036)	0.092	2.268*
Private	-	-	-	-	-	-	-	-	-
Satisfaction with the organization of the practicum									
Public	0.151 (0.045)	0.144	3.333c	0.051 (0.039)	0.055	1.314	0.068 (0.044)	0.068	1.550
Private	-	-	-	-	-	-	-	-	-
Satisfaction with the information about the practicum									
Public	-0.074 (0.055)	-0.065	-1.330	0.040 (0.047)	0.040	0.838	0.056 (0.054)	0.052	1.047
Private	-	-	-	-	-	-	-	-	-
Perceived impact on the classroom and school activity									
Public	0.242 (0.053)	0.240	4.548d	0.159 (0.046)	0.179	3.486c	0.136 (0.052)	0.142	2.640b
Private	-	-	-	-	-	-	-	-	-
Perceived impact on professional development									
Public	0.176 (0.061)	0.120	2.883b	0.399 (0.052)	0.308	7.651d	0.191 (0.059)	0.136	3.229c
Private	-	-	-	-	-	-	-	-	-
Perceived impact on the school-university relationship									
Public	0.135 (0.049)	0.150	2.739b	-0.004 (0.042)	-0.006	-0.103	0.177 (0.048)	0.206	3.695d
Private	-	-	-	-	-	-	-	-	-
Summary of the model									
R ² (R ² -adjusted)	0.346 (0.323)			0.381 (0.360)			0.322 (0.298)		
F for the model	15.057 ^a			17.559 ^a			15.528 ^a		
Sample size	567			567			567		

a p< 0.05; b p< 0.01; c p< 0.001; d p=0.000.

If we look at the lower part of table 2, we can observe that the relation between the perceived impact of the *practicum* and the development of skills is more consistent. Once the effects of the other variables included in the analysis have been statistically controlled for, we observe a similar behaviour among the regression models 1 and 3, where a higher perception of the impact of the *practicum* on the classroom and school activity (Beta=0.240, $p=0.000$ and Beta=0.142, $p<0.01$), the students' professional development (Beta=0.120, $p<0.01$ and Beta=0.136, $p<0.001$) and the school-university relationship (Beta=0.150, $p<0.01$ and Beta=0.206, $p=0.000$) is associated with the development of the skills associated with relationships and ways of working, as well as a greater application of knowledge in practice. Lastly in relation to the skills concerning classroom management, we observe that they are more developed among those students who perceive a greater impact of the internship on the classroom and school activity (Beta=0.179, $p<0.001$) and, particularly, on their own professional development (Beta=0.308, $p=0.000$).

Discussion and conclusions

Teacher training is a fundamental element in the improvement of the quality of our educational system. Although there is no doubt surrounding the importance of considering curricular internship periods, professional practice and field experience in initial teacher training programmes, the way in which this field practice should be organised and incorporated generates a certain amount of controversy between politicians, practitioners and theorists.

In this article the skill development of students from the Early Childhood Education and Primary Education degrees were studied during their internship periods in educational centres. As pointed out by several authors (Arnold, Groschner & Hascher, 2014; Egado & López, 2016), the *practicum* periods are fundamental for the skill and professional development of future teachers and, therefore, a deeper understanding of those elements that condition their success is essential to guarantee the quality of our initial teacher training programmes. The results of this study suggest that the undertaking of a satisfactory internship, in terms of its approach as a subject, as well as the organization and relationships

established with the schools, the perception of a positive impact of the internship on the classroom and school activity, the professional development of the students and the relationship between the school and the university, predicts, from the perspective of the students themselves, a greater development of skills that may be useful for the subsequent carrying out of the teaching profession.

Although several studies have highlighted the importance of personal characteristics in the development of professional skills (e.g. Biermann, Karbach, Spinath & Brünken, 2015), both during the internship period and during the execution of the profession, our study observes that, in general, the sociodemographic variables do not condition the development of skills during the internship.

In accordance with other studies (Garland, Garland & Vasquez, 2013) those skills linked to classroom management, despite being the ones that usually generate more insecurity among professionals, from the point of view of the students themselves, were the skills most developed during the internship. Likewise, from the students' perspective, the good relationships established with the internship centres, and the greater perception of impact of their activity on the classroom and school contribute to developing skills associated with classroom management, such as the development of interaction and communication processes in the classroom, the organization of students, time and spaces and the fostering of an atmosphere that favours learning and coexistence. In this regard, several authors highlight the importance of the internship centre (Kyndt et al., 2014), the involvement of the tutor from the centre or the mentor (Jaspers, Meijer, Prins y Wubbels, 2014) or, more specifically, the psychological and emotional support received during their internship (Sorensen, 2014).

In short, all these elements contribute to highlighting the importance of that which some authors have called "training centres" (e.g., Conroy, Hulme & Menter, 2013). Building the loyalty of the internship centres takes on a special meaning with this idea, and opens up a dilemma. On the one hand, the possibility of providing the option—sought and requested by students—of choosing the internship centre that most suits them. On the other hand, the possibility of establishing a stable network of centres over time, which teachers and principals are happy to be a part of, and the university is guaranteed that said centres meet the necessary conditions to promote student learning.

As regards the skills linked to relationships and ways of working, although the bivariate analysis indicates that it is the set of skills that is least developed during the internship period, we observe that they are a type of skills that, due probably to their complexity and the need for good knowledge of the context and the reality of the schools, are worked on, especially, in the final stages of the initial training. Likewise, bearing in mind the results of the multivariate analysis, a good planning of the *practicum* as a subject (e.g., support materials, follow-up mechanisms, feedback, clarity of assessment, tutorials), and a good organization of same (e.g., system of choosing the internship centre, information about the centres available, type of *practicum*, placement of the *practicum* in the curricular structure of the degree) would be associated with an increase in the possibilities of developing skills associated with relationships and ways of working. Certainly, as mentioned by Zabalza (2004), internships themselves will not be beneficial if they are not duly planned. As occurred in the previous case, this set of skills is conditioned both by the relationship that the student establishes with the internship centre, and the relationship existing between the school and the university. Various studies highlight the importance of promoting and researching how the collaboration and cooperation established between the schools and the university centres contribute to the professional development of the teaching staff being trained (Cohen, Hoz & Kaplan, 2013). In this regard, Harrison (2006) underlines the great challenge represented by continuing to gather evidence about different types of collaboration that help to develop policies and structures that foster more effective relationships between schools and higher education institutions.

As regards the skills associated with the application of knowledge in real practice (i.e., mastery of theoretical knowledge about the reality of the school and the classroom, relating good teaching practices with the theoretical knowledge acquired, mastery of techniques and strategies for the follow-up and monitoring of the teaching-learning process), the results suggest that, in addition to some determining factors common to the two above sets of skills (i.e. the planning of the *practicum* as a subject, the relationship between students and the internship centre and the collaboration between schools and universities), those types of *practicum* that combine intensive and extensive periods in the centres are associated with a slight increase in the possibilities of developing this type of skills. These results once again confirm the importance of a

suitable cooperation between schools and universities, where the former help to develop the teaching skills in a real context, and the latter not only provide students with access to relevant research in their professional field, but they also promote a critical reflection of the practice (Burn, 2006).

Nevertheless, the study carried out has some limitations that suggest interpreting the results as an initial exploration of the factors linked to the development of skills during the internships of the teaching students. Although—as a common link between the school and the university and protagonists of the *practicum*— students' perception of their skill development is essential, access to institutional microdata about the unique profile of the internship tutor and the performance of the students or the assessment of their skills would help us to create a more complete image of the functioning of the *practicum*. An approach using a mixed methodology, combining questionnaires and surveys, would give us a deeper understanding of the phenomenon (Creswell, 2009). The qualitative data could help us to corroborate and further explore some of our results such as, for example, the characteristics of the type of school-university collaboration that best contributes to the initial teacher training. Likewise, the results shown here prove the need to continue conducting research about the relationships established between schools and university centres within the framework of the *practicum* programmes, as well as the impact the *practicum* has on schools and universities.

In short, and by way of conclusion, the results of this study enable us to confirm that, in addition to the type (intensive or extensive) and the placement of the *practicum* in the degree studies (distributed evenly throughout the programme, or concentrated in the last two years), the identification of suitable “training centres” and the consolidation of effective cooperation structures between all the agents involved, are key elements. The university and school are responsible for preparing the students to professionally execute their role as teachers. To do so, a debate is required about the relationship between the university and the schools, giving rise to new spaces and ways of collaboration and training that result in an improvement in our educational system.

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