

10

THE GENERIC COMPETENCES IN THE INITIAL TEACHER TRAINING. A COMPARATIVE STUDY AMONG STUDENTS, TEACHERS AND GRADUATES OF UNIVERSITY EDUCATION DEGREE

(LAS COMPETENCIAS GENERALES EN LA FORMACIÓN INICIAL DEL PROFESORADO. UN ESTUDIO COMPARATIVO ENTRE ESTUDIANTES, DOCENTES Y GRADUADOS DE LOS TÍTULOS UNIVERSITARIOS DE EDUCACIÓN)

María Isabel Amor Almedina
Rocío Serrano Rodríguez
Universidad de Córdoba

DOI: 10.5944/educXX1.21341

How to reference this article/Cómo referenciar este artículo:

Amor, M.I. y Serrano Rodríguez, R. (2019). The generic competences the initial teacher training. A comparative study among students, teachers and graduates of university education degree. *Educación XXI*, 22(1), 239-261, doi: 10.5944/educXX1.21341

Amor, M.I.& Serrano Rodríguez, R. (2019). The generic competences the initial teacher training. A comparative study among students, teachers and graduates of university education degree. [Las competencias generales en la formación inicial del profesorado. Un estudio comparativo entre estudiantes, docentes y graduados de los títulos universitarios de educación]. *Educación XXI*, 22(1), 239-261, doi: 10.5944/educXX1.21341

ABSTRACT

The principal objective of this study is to evaluate the level of development of the Generic Competences in the professors, students and graduates of the university Education degrees, using the *Teacher Competence Evaluation (TCE)* scale. The sample was formed of 1,243 Students, 491 Graduates and 351 Teachers from 23 Spanish universities. This study was carried out as part of the other R&D research project. The statistical analyses employed in order to achieve the objectives of this study were carried out using the following procedure: we first carried out a Conformational Factorial Analysis (CFA) of the TCE scale in order to compare the factorial structure of the instrument used and we went on to calculate the basic descriptive statistical analyses of the items of which the scale is composed. We subsequently carried out a variance analysis (ANOVA) with the objective of analysing the differences

among the groups. The results obtained from the group of students and the groups comprising graduates and teaching staff demonstrate that certain competences from the Instrumental Competences, i.e. competence in a foreign language and technological competency, are perceived to be less developed. We noted that there were significant differences in the three groups as regards the questionnaire as a whole. It concludes with the need to encourage the development of these competences in Initial Teacher Training. Between the instrumental competences, the domination of a second language and technological ability continue to play a very relevant role as regards to guaranteeing a quality education. This study is useful for curricular reform in the European Higher Education's study plans.

KEY WORDS

Teacher competences; initial teacher training; university; generic competences; assessment.

RESUMEN

El objetivo principal de este estudio es evaluar el nivel de desarrollo de las Competencias Genéricas en profesores, estudiantes y egresados de los títulos universitarios de educación, utilizando la escala de *Evaluación de Competencia Docentes (ECD)*. La muestra estuvo conformada por 1.243 estudiantes, 491 egresados y 351 docentes, provenientes de 23 universidades españolas. Este estudio forma parte de un proyecto de investigación de I + D + i. Los análisis estadísticos empleados para alcanzar los objetivos planteados se realizaron con el siguiente procedimiento: en primer lugar se realizó un Análisis Factorial Confirmatorio (AFC) de la escala ECD para comprobar la estructura factorial del instrumento y en segundo lugar, se calcularon los análisis estadísticos descriptivos básicos de los elementos de los que se compone la escala. Posteriormente, realizamos un análisis de varianza (ANOVA) con el objetivo de analizar las diferencias entre los grupos. Los resultados obtenidos en los tres grupos: estudiantes, graduados y docentes, demuestran que se sienten poco capacitados en las competencias instrumentales, concretamente en la competencia para hablar en un idioma extranjero y la competencia tecnológica. También observamos que existen diferencias significativas entre los tres grupos en lo que respecta al cuestionario en su conjunto. Se concluye con la necesidad de fomentar el desarrollo de estas competencias en la Formación Inicial del Profesorado. Entre las competencias instrumentales, la dominación de una segunda lengua y la habilidad tecnológica siguen jugando un papel muy relevante en la garantía de una educación de calidad. Este estudio es útil para ayudar a la reforma curricular en los planes de estudio de la educación superior europea.

PALABRAS CLAVE

Competencias docentes; formación inicial del profesorado; universidad; competencias genéricas; evaluación.

INTRODUCTION

The general goal of this study is to focus on discovering the level of development of generic educational competences and to verify whether there are differences among the perceptions of the teaching profession, students and graduates from Teacher Training (specialised in Physical Education), Primary Education (with a mention in Physical Education) and the Science in Physical Activity and Sports Bachelor's degrees. The Teacher Competence Evaluation (TCE) scale was used to verify whether the perception regarding the development acquired in these competences when initially studied, after studying them or as a teacher of them, differs or is the same, and to obtain each of these groups' evaluation of them. This concerns education in the case of students, professional implications in the case of graduates and working as an educator in the case of the teaching profession.

The interest in researching educational competences in Higher Education continues to increase at a considerable rate in all countries (UNESCO, 2011, 2012), and all results obtained coincide as regards the importance of having certain abilities and skills in order to attain a quality education. Some of these abilities and skills are: the practical application of knowledge, adaptation to change and complexity, and the capacity to resolve problems and to act in an efficient manner (Kember, 2009; Perrenoud, 2001). As is stated by Mérida (2007), competences suppose the development of cognitive, affective, socio-emotional and physical capacities for one's professional, social and personal life. Zabalza's (2011) interest, meanwhile, lies in defining a profile for university education and has determined that the following educational competences are required in order to confront the current reality:

- Planning the teaching-learning process.
- Choosing and preparing the contents of each discipline.
- Providing understandable and well-organised information and explanations.
- The handling of new technologies.
- Designing a methodology and organising activities.
- Communicating with/relating to students.
- Tutoring.
- Evaluate.
- Reflecting upon and researching teaching.
- Identifying with the institution and working in a team.

In the same respect, Gairín (2011:100) is of the opinion that an education based on competences supposes determining a university

education in accordance with the EHES and that an educator's profile should include the following competences:

- The cognitive competences appropriate to the professor of a particular discipline, which implies a suitable education, i.e. a broad knowledge of specific and pedagogic disciplinary sphere that will enable him/her to develop the pertinent educative actions with which to support the students' learning.
- Meta-cognitive competences that will convert him/her into a reflexive and self-critical professor as regards his/her teaching with the objective of systematically reviewing and improving it.
- Communicative competences, which are closely linked to the appropriate use of scientific languages (numeric, alphabetic, graphic, etc.) and of different registers (papers, reports, essays, conferences, lessons, etc.).
- Managerial competences, linked to the efficient management of teaching and of its resources in diverse learning environments and settings.
- Social competencies that will enable actions related to leadership, cooperation, persuasion, teamwork, etc. to be taken, thus favouring the students' education and disposition in this sphere, along with their own professional development, principally within the European Higher Education Space.
- Affective competences that will ensure attitudes, motivation and conduct that will favour responsible teaching and commitment to the achievement of the desirable educational objectives.

In the Tuning Project, which was the driving force behind the curricular reforms in Higher Education in Europe, and during which information was obtained from employers, graduates and academics regarding the results of the learning and competences of a group of degrees, competencies are defined as a dynamic combination of attributes related to knowledge, skills, attitudes and responsibilities that describe the results of learning of an educative programme (González & Wagenaar, 2003).

In the OECD (The Organization for Economic Cooperation and Development) report (2000), competences are defined as the capacity to respond to demands and carry out tasks in an appropriate manner. Each competency is constructed by means of a combination of cognitive and practical skills, knowledge, motivation, values, attitudes, emotions and other social and behavioural components.

According to Zabalza (2011), the inclusion of generic competences that are transversal to all university educational itineraries, although they

may at first appear to have nothing in common with being educated in a particular discipline, has proved to be tremendously valuable for the integral education of students and implies great relevance for professionals, since it facilitates their integration into and participation in the labour market. All professional and personal development is, therefore, associated with different dimensions related to the four pillars of education: being, knowing learning to learn and coexistence (Delors, 1996).

One of the objectives of the Tuning Educational Structures in Europe project (González & Wagenaar, 2003) as regards the curricular reform process was to attempt to determine certain common competences and skills in the study plans of all degrees, with the intention of favouring mobility, increasing the competitiveness and improving the employability of students and graduates in an initiative to encourage them to complete their studies and/or seek employment in other countries in the European Union. From that moment on, degrees were considered in terms of the results of learning and, more specifically, in terms of competences, which can be differentiated as follows: generic (instrumental, interpersonal and systematic) and specific (the knowledge and skills appropriate to each degree).

The generic competences on a degree can be identified as the common elements that may exist in that and any other degree, i.e. competencies such as the capacity to learn, make decisions, design projects, analyse and synthesise, skills in interpersonal relationships, etc. These abilities and skills are necessary in any sort of education, regardless of the specific education provided on each degree. The specific competences are crucial for any degree, but the generic competences shared on all degrees are becoming increasingly more important, since we are immersed in a society that is characterised by its dynamism and constant change. Determining the professional profile of a degree defines its identity and orients us as regards the nature of the learning that should be prioritised if professionals are to be competent in their activities, but the development of generic competences will enable the attainment of learning that is valid in any situation in the social reality.

The Tuning Project presented, at a European level, thirty generic competences divided into three categories: Instrumental, Interpersonal and Systemic, which are those that enable university degree holders to attain higher levels of employability and citizenship. This selection was made on the basis of a study carried out with graduates, employers and academics in which they were requested to provide their opinions regarding their degree of development of competencies and skills during their university studies (González & Wagenaar, 2003).

The Instrumental Competences, as their name suggests, have an instrumental function. They are identified with capacities of a cognitive, methodological, technological, and linguistic nature that make the university student's basic academic development possible. They are related to the following abilities and skills (García-Sanz, 2014; Zabalza, 2011):

- a) Cognitive abilities, the capacity to learn and manage thoughts and ideas.
- b) Methodological capacities, in order to manage the environment: organise time, make decisions, resolve problems and put learning strategies into practice.
- c) Technological abilities, related to the use of information and communication technologies.
- d) Linguistic skills, such as oral and written communication and the knowledge of a second language.

The Interpersonal Competences have the objective of facilitating social interaction and cooperation, and are those related to communicative and critical skills. They include competencies related to the skill to relate with others, work in a team, express one's own feelings and be socially and ethically compromised. These are subdivided into (Bartram & Roe, 2005):

- Individual: related to the capacity to express feelings, and critical and self-critical skills.
- Social: related to the capacity to work in a team, or the expression of social or ethical commitment.

The Systemic Competences require the prior acquisition of the aforementioned (instrumental and interpersonal) competencies as a basis and make it possible to approach reality as regards the complexity of its relationships and not as a set of isolated facts. They suppose a combination of comprehension, sensitivity and knowledge, thus allowing all an individual's parts to be related and grouped together. This type of competencies includes abilities and skills related to autonomous learning, the development of creativity and the capacity to adapt to new situations.

The competences that each of these groups considered to be important were very different in each area of knowledge, but it was possible to find some important similarities among all the responses. All of them state that the most important competencies are those related to analysis and synthesis

(Westera, 2001; Zabala & Arnau, 2008) and the capacity to learn and solve problems.

Of the three groups, the graduates and the employers were those whose opinions were most similar, and opined that the capacity to apply knowledge in practice, adapt to new situations, work both autonomously and in a team, the ability to manage information, the capacity to plan and organise and communication in a language other than one's own were very important competencies as regards finding employment. Both groups also coincided on the fact that it was more important to develop some competencies than others in order to educate students and prepare them for their work duties. Some of these studies include those by Vargas, Casanova and Montanero (2002); Pozo and Monereo, (2001); Fallows and Steven, (2000) and the OECD (2000).

The REFLEX study (The Flexible Professional in the Knowledge Society, 2000), which took place within the 6th European Union Framework Programme, shows comparative data regarding the work situation of graduates from thirteen countries and indicates a high level of agreement among them as regards those competencies that are priority requirements in a job: the capacity to make oneself understood, the capacity to use one's time effectively, the capacity to work in a team and the capacity to work well under pressure.

Tejada (2009) similarly showed the importance of an education that is constantly connected to practical aspects, since this will have repercussions in both the initial and continuous education, and is a direct consequence of learning by means of competencies. This would imply an education based on alternating between academic and work-related integration, particularly in the last years of education, since this is highly relevant to professional development and obtaining employment.

Later studies (Sánchez-Elvira; López-González & Fernández-Sánchez, 2010) showed the importance of generic competencies on all degrees, since they were selected according to the academic and professional profile, which provides the educative content of each degree with consistency and coherence. The generic competences should be developed during the academic period with the intention of the students incorporating them into their behaviour and being able to extend them further than their initial education. It is the teachers' duty to integrate the generic competencies corresponding to each subject into their educative activities in order to facilitate their students' development (Villa & Poblete, 2011).

According to Arribas, Manrique and Tabernero (2016), the students on Teacher Training degrees, and particularly those in the final years of their degrees and graduates, consider that the practices developed in the various subjects have been those that have enabled them to develop the professional competencies required to function as educators. In the opinion of these authors, a university is an educational institution that should supply students, for whom attending university is an important aspect of their educational itinerary as professionals, with various types of responses. In this respect, it is vital to carry out an in-depth analysis of the competencies acquired by students and recent graduates during their time at university in order to be able to evaluate and improve graduates' employability. The same authors also point out that the most significant lacks in future primary and secondary school teachers as regards the acquisition of competencies are: working with disruptive pupils, maintaining discipline, carrying out the function of tutor, working with the pupils' families and with the team of teachers, and controlling anxiety, stress and frustration.

The study carried out by Fernández-Santander, García-García, Sáez-Pizarro and Terrón-López (2012), with a group of employers shows that they give priority to organisational and management capacities, along with abilities related to proactivity (autonomy and personal initiative), when selecting a candidate for a job. This contrasts with the study by Sánchez-Elvira; López-González and Fernández-Sánchez, (2010), which was carried out with a group of educators who showed interest in developing the generic competences related to the capacity to analyse, synthesise and resolve problems, along with expression and communication in one's own language. Both groups considered that the competence to work in a team took third place while only the group of academics considered that ethical compromise was important.

As stated previously, in this study we wish to discover the importance that university Physical Education students, graduates and the teaching staff place on the generic competences, and to verify whether the perception that they have of the development and acquisition of each of them differs or coincides among the three groups. We specifically wish to know, with regard to the groups of students (St) and graduates (Gr), what their level of competences is and to what extent their university studies contribute or have contributed to the development of these competences. In the case of the teachers (T), we wish to discover to what extent their teaching contributes to the development of these competencies in their students.

METHOD

Objectives

The principal objective of this study is to evaluate the level of development of the generic educative competences in the professors, students and graduates of the following university degrees: Teacher Training (specialising in Physical Education), Primary School Education (with a mention in Physical Education) and the Science of Physical Activity and Sports degree, using the *Teacher Competency Evaluation (TCE)* scale. We, more concretely, established the following specific objectives:

- To analyse the factorial structure of the TCE scale and its appropriateness as regards evaluating the generic educative competences of students, professors and graduates of the following university degrees: Teacher Training (specialising in Physical Education), Primary School Education (with a mention in Physical Education) and the Science of Physical Activity and Sports degree.
- To discover which competencies are most developed in each of the groups of which the sample is formed.
- To verify whether there are differences among the three groups.

Participants

With regard to the selection of participants, the procedure established was that of simple random sampling. The size of the sample was evaluated by using the data concerning the academic year 2014/15 provided by the secretaries at the centres studied in order to obtain a reference population. The participants were grouped by considering the following criteria: Students (St) (enrolled in the third year and studying at least three main courses), Graduates (Gr) (had completed the entire degree in the five years prior to the study) and Teachers (T) (taught classes for at least one of the degree subjects studied).

The sample eventually obtained was, therefore, formed of 1,243 Students, 491 Graduates and 351 Teachers appertaining to the university degrees of Teacher Training (specialising in Physical Education), Primary School Education (with a mention in Physical Education) and the Science of Physical Activity and Sports degree, from 23 Spanish universities distributed in three zones: the northern zone (Universities of Valladolid, León, Burgos Cantabria, Salamanca, País Vasco and La Coruña), the eastern zone (Universities of Zaragoza, Lleida, Barcelona, Ramón Llull, Vic Valencia and the Autonomous University of Barcelona), and the central and southern

zones and that of the Canary Islands (Universities of La Laguna, Alcalá, Murcia, Castilla-la Mancha, Granada, Seville and Córdoba, the Catholic University of Murcia and the Autonomous University of Madrid).

Instrument

In order to attain the objectives of this research, we created a questionnaire structured within the more extensive research project². This questionnaire contained 12 questions (72 items) on a five-point Likert-type variation scale of 0-4 (Not at all, Little, Average, A lot and Very much).

The different Teacher Competencies Evaluation (TCE) scale for the three groups (Students, Graduates and Teachers) were created in an identical manner in three stages.

In the first phase, we compiled a broad set of questions obtained after analysing previous works related to this theme, which provided us with a first version consisting of 89 questions (Martínez, Castejón & Santos, 2012; Muros & Luis-Pascual, 2012; Ruíz-Gallardo, Ruíz & Ureña, 2013). In the second phase, this initial rough draft was evaluated by nine experts in Didactics of Corporal Expression and in Physical Education. The data obtained from these evaluations enabled us to select the most pertinent questions as regards their *relevance* (those items most closely related to the study object) and *clarity* (easily understandable, with simple statements). The third phase consisted of carrying out the first pre-test with subjects who were similar to those being studied, with the objective of ensuring understanding. After refining those questions that were unreliable and which were unclearly defined, we created the final scale, which was formed of 46 items divided into three dimensions: educational competencies in Physical Education, generic educational competencies and competencies for the teaching of Physical Education.

The items included in the final version of the instrument were the same in the three questionnaires, although the wording was changed according to the population group for which it was intended (Students, Graduates or Teachers).

Of the 12 questions contained in the questionnaire, we have selected and analysed the results of 18 items (shown in Table 1), which describe the transversal competences that students are able to develop in their studies, and which are the objective of this work. We therefore asked some of the participants Students (St) and Graduates (Gr) to what extent they believed that the subjects studied while at university had helped them to develop the capacities shown in Table 1. The Teachers (T) were, meanwhile, asked to

what extent they believed that they had helped their students to develop the same capacities by means of their subjects.

Table 1
Items on the TCE scale

Competences	N.º	Items
Instrumental	p125	Capacity for analysis and synthesis
	p126	Capacity for organisation and planning
	p127	Oral and written communication in native language
	p128	Knowledge of a foreign language
	p129	Knowledge of computing relative to study area
	p28	Use of information and communication technologies
Personal	p130	Teamwork
	p131	Interpersonal relationship skills
	p132	Critical reasoning
	p133	Ethical compromise
	p25	Working in a team with other professors
	p29	Confronting duties and the ethical dilemmas associated with the profession
Systemic	p134	Autonomous learning
	p135	Adaptation to new situations
	p136	Creativity
	p210	Organising one's own continuous training
	p21	Organising and encouraging situations in which learning can take place
	p22	Managing the progression of learning

The reliability of the questionnaire was analysed using the Cronbach Alpha coefficient, which attained very high values for all three groups (Table 2).

Table 2
Cronbach's Alpha of scale

Status	Cronbach's Alpha	N.º of elements
Teachers	.911	18
Students	.914	18
Graduates	.921	18

Procedure

The data were collected using a simple random process during the months of March and April of the 2014/15 academic year. The questionnaire was applied online in order to provide easy access, increase participation and facilitate the collection of information.

Analysis

The statistical analyses employed in order to achieve the objectives of this study were carried out using the following procedure: we first carried out a Conformational Factorial Analysis (CFA) of the TCE scale in order to compare the factorial structure of the instrument used. This was done by employing basic descriptive statistical analyses and calculating the reliability of the scale (Cronbach Alpha .93).

The recommendations of Hu and Bentler (1999) were borne in mind while doing this. These recommendations are that the model be adjusted by paying the appropriate attention to the RMSEA (Root Mean Square Error of Approximation) and SRMR (Standardised Root Mean Square Residual) indices, whose recommended values are $< .08$, and the NNFI (Non-Normed Fit Index), IFI (Incremental Fit Index) and CFI (Comparative Fit Index) indices, whose recommended values are $> .95$ (Jöreskog & Sörbom, 1993). The estimation method employed was the robust maximum likelihood method, which enabled us to employ polychoric correlations, which are ideally used with variables of the aforementioned characteristics with high indices of normality and multivariate Kurtosis, and which are of a clearly ordinal nature (Flora & Curran, 2004).

The reliability of the dimensions of the scale as regards the optimum factorial structure proposed was also examined by calculating Cronbach's Alpha.

We specifically chose the Games-Howell method, since it does not require the sample sizes to be the same, as each group in our sample contains a different number of subjects. In order to calculate the magnitude of the differences observed, if any existed, we therefore calculated the effect size, i.e. the typified mean difference, or the d index (Cohen, 1988), which is interpreted as: $d \leq .50$ when supposing a small effect size; $d \leq .79$ when supposing a medium effect size, and $d \geq .80$ when the effect is large.

The computer programmes used to carry out the aforementioned analyses were the SPSS 22 for the reliability analysis and version 6.2 of the EQS statistical programme for the confirmatory factorial analyses.

RESULTS

The estimation used for the CFA was a maximum likelihood robust (MLR) estimation, since the normality and multivariate Kurtosis are very high. In fact, the Mardia Coefficient value is 78.79.

The factorial solution obtained (Figure 1) shows three dimensions (Instrumental Competences, Personal Competences and Systemic Competences) correlated with an optimum adjustment with values of χ^2 of the Satorra Bentler = 2025.18; $p = 0.00$; NNFI = .95; CFI = .96; IFI = .96; RMSA = .08; SRMR = .06. As will be noted in Figure 1, the greatest correlation occurs between the Personal Cs and the Systemic Cs (.94), while the smallest are between the Instrumental Cs and the Systemic Cs (.83).

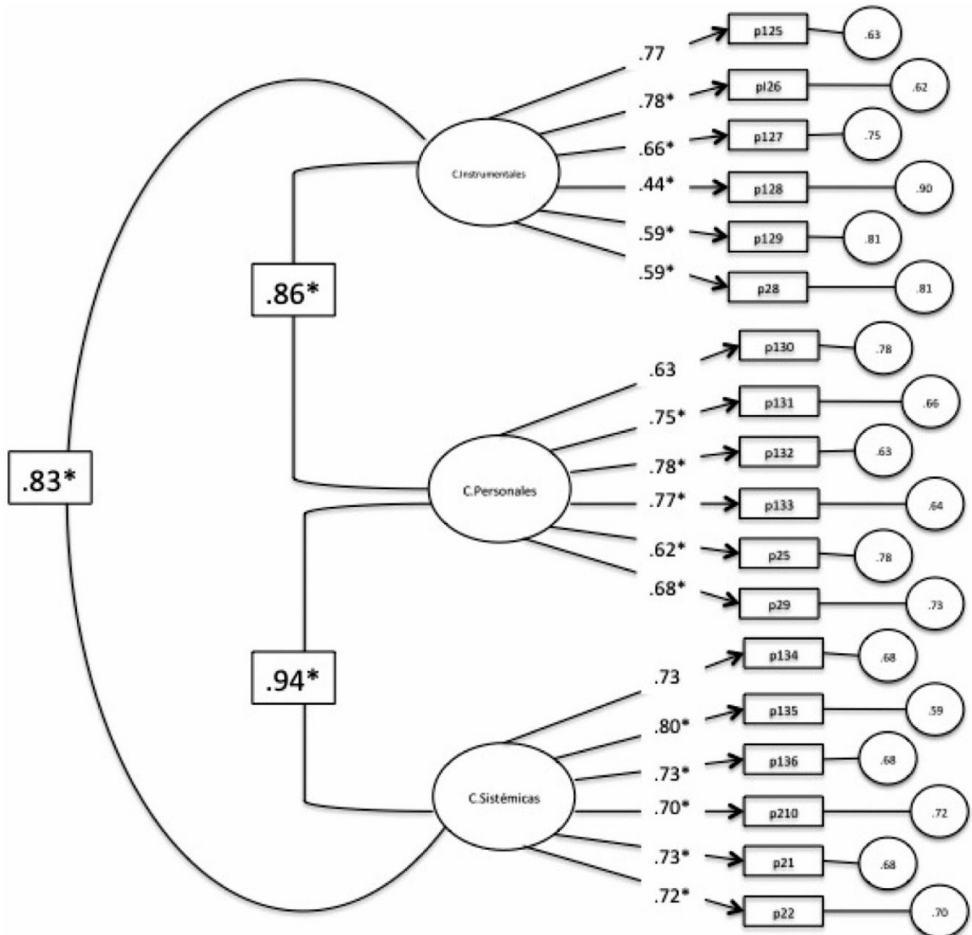


Figure 1. Factorial solution of the Teacher Competence Evaluation (TCE) scale

The item that has most adjustment, with a value of .78, in the first dimension that groups the Instrumental Competencies together according to the CFA, is (p126), «Capacity for organisation and planning», as opposed to item (p128) «Knowledge of a foreign language», which has the lowest correlation value in this dimension (.44). This is followed by items p129 and p28 (Knowledge of computing relative to study area and Use of information and communication technologies), both of which obtained a value of (.59).

The items with the highest level of correlation in the second dimension, Personal Competencies, were «Critical reasoning» (p132) followed by «Ethical compromise» (p133). The lowest level of correlation in this dimension was capacity to work in a team with other educators (.62), followed by working in a team (.63).

The highest value of the sample in the third dimension, which concerns Systemic Competencies, was item (p135), regarding the capacity to adapt to new situations (.80). That with the lowest value was «Organise one's own continuous training» (.70).

We then went on to calculate the basic descriptive statistical analyses (Table 3) of the items of which the scale is composed.

Table 3
Descriptive statistics of TCE

	Items	Students			Graduates			Teachers		
		M	Sk	K	M	Sk	K	M	Sk	K
Instrumental	p125	2.40	-.253	-.262	2.57	-.518	.092	2.97	-.506	-.052
	p126	2.63	-.374	.118	2.81	-.649	.288	2.85	-.727	.722
	p127	2.48	-.452	-.247	2.64	-.702	.147	2.72	-.809	.305
	p128	1.27	.487	-.660	1.12	.779	-.142	1.07	.990	.245
	p129	1.78	.145	-.559	1.86	.086	-.667	2.03	-.118	-.714
	p28	2.26	-.185	-.556	2.30	-.215	-.673	2.57	-.455	-.291
	Personal	p130	3.27	-1.00	.857	3.34	-1.22	1.320	3.12	-1.11
p131		2.83	-.615	.360	3.00	-.943	.746	2.90	-.760	.277
p132		2.69	-.369	-.305	2.84	-.698	.441	3.08	-.617	-.145
p133		2.55	-.348	-.371	2.75	-.730	.180	2.83	-.770	-.031
p25		2.48	-.466	-.377	2.66	-.550	-.392	2.27	-.375	-.827
p29		2.16	-.184	-.355	2.26	-.299	-.466	2.34	-.323	-.827
Systemic		p134	2.86	-.474	-.204	2.92	-.866	.681	2.92	-.557
	p135	2.63	-.338	-.269	2.84	-.655	.250	2.77	-.434	-.214
	p136	2.61	-.376	-.432	2.75	-.702	.032	2.77	-.674	-.026
	p210	2.32	-.274	-.343	2.46	-.500	-.325	2.09	-.195	-.724
	p21	2.50	-.208	-.133	2.74	-.773	.875	2.57	-.629	-.009
	p22	2.40	-.217	-.029	2.64	-.590	.430	2.47	-.443	-.023

Table 3 shows that the item in the Instrumental Competences that is most highly evaluated (2.63 and 2.81) by the Students and the Graduates is p126 «Capacity for organisation and planning». The item most valued by the Teachers is, however, p125, «Capacity for analysis and synthesis» (2.97).

In the second dimension, which groups the abilities related to the development of personal competences, the item given the highest value by all three groups (St, Gr and T) is p130, which concerns the ability to work in a team (3.27, 3.34 and 3.12).

In the third dimension (Systemic Competences), the item given the highest value is p134, «Autonomous learning», which receives 2.92 from the Graduates and Teachers, and 2.86 from the Students.

The coefficients of skewness (Sk) were between -1.00 (item p130: Personal Competence) and $.487$ (item p128: Instrumental Competence) and the Kurtosis (K) between $-.660$ (p128: Instrumental Competence) and $.857$ (p13: Personal Competence) for the group of Students (St). In the group of the Graduates (Gr) the coefficients of skewness (Sk) were between -1.22 (p130: Personal Competence) and $.779$ (p128: Instrumental Competence) and the Kurtosis (K) between 1.32 and $-.673$ (p130: Personal Competence and p128: Instrumental Competence, respectively). In the group of Teachers (T), the coefficients of skewness (Sk) were between -1.11 (Sk) in the item p130 (Personal Competence) and $.990$ (Sk) in the item p128 (Instrumental Competence) and the indices of Kurtosis (K) between 1.40 (p130) and $-.827$ (p25 and p29) of the Personal Competence.

We subsequently carried out a variance analysis (ANOVA) with the objective of analysing the differences among the groups (Table 4). It will be noted that the level of education in Instrumental Competences is greater for the Teachers (2.37) and lower for the Students (2.13). With regard to Personal Competences, the highest value was obtained by the Graduates, with 2.81, followed by the Teachers with 2.76, and finally the Students (2.66). The highest level of education in the Systemic Competences was, once again, attained by the Graduates, with a value of 2.73, as opposed to the Students who considered that they had attained a much lower level in these competences (2.55).

In those groups in which the differences proved to be statistically significant, we carried out post hoc tests (Games-Howell), with the objective of exploring the existing differences in even greater depth. In this respect, and with regard to the group variable, we noted that there were significant differences ($p < .05$) among the three groups as regards the questionnaire as a whole. There were specifically differences between the groups of

Students (St) and Graduates (Gr) as regards the Personal Competences and the Systemic Competences. However, the only differences found between the groups of Students (St) and Teachers (T) concerned the Instrumental Competences. Finally, the differences between the groups of Graduates (Gr) and Teachers (T) concerned the Systemic Competences.

The typified mean difference (d-Cohen) produced a small effect size in all of the groups ($d \leq .50$).

Table 4
ANOVA in the three groups in each of the dimensions of the TCE

		N	M	SD	gl	F	P	G-H	d Cohen
Total Questionnaire	St	1198	2.45	.610	2 1972	11.74	<.00	St≠Gr	.23
	Gr	443	2.59	.645					
	T	332	2.58	.650					
Instrumental	St	1212	2.13	.699	2 2011	15.89	<.00	St≠T	.35
	Gr	463	2.22	.703					
	T	337	2.37	.665					
Personal	St	1224	2.66	.665	2 2046	8.21	<.00	Gr≠St	.22
	Gr	482	2.81	.724					
	T	341	2.76	.775					
Systemic	St	1226	2.55	.671	2 2037	11.53	<.00	St≠Gr	.26
	Gr	473	2.73	.724					
	T	339	2.60	.740					

The mean difference is significant to a level of .05

CONCLUSIONS/DISCUSSION

Firstly, and in concordance with the first objective proposed, the TCE has proved to be highly valuable and reliable as regards both the design of the items and the construction of the dimensions, as supported by theory and previous research (Sánchez-Elvira; López-González & Fernández-Sánchez, 2010).

The classification of the competencies obtained in the Confirmatory Factorial Analysis (CFA) provides empirical support that it is very similar to the theoretical model proposed previously and based on the *Tuning Project in Europe* (González & Wagenaar, 2003).

With regard to the second objective proposed, the results obtained from the group of students and the groups comprising graduates and teaching staff do not demonstrate that certain competences from the Instrumental Competences, i.e. competence in a foreign language and technological competence are perceived to be less developed. The Accenture (2007), study was carried out, in an attempt to identify the professional competencies most valued by employers, recent university graduates and academics, showed the development of instrumental competencies, and particularly the ability to use information and communication technologies, to be a primordial factor for entrance into the labour market. The same study also concluded that 50% of university graduates are satisfied with their education and do not consider that languages are a key competences, unlike the opinion of teaching professionals and companies.

In the case of the third objective, we were able to verify that the lowest value as regards knowledge of a foreign language was obtained from the group composed of teaching professionals. The initial education received by those in the teaching profession is, in this respect, fundamental as regards developing bilingual competences. There can be no doubt that numerous efforts have been made by the teaching profession, generally with positive results (Lova, Bolarín & Porto, 2013; Travé, 2013; Lahuerta, 2015). Many members of this profession are, however, concerned about the bilingual competencies required to acquire an education within the framework of a quality education system (Ramos, 2007; Rodríguez Esteban & Vieira, 2009; Rubio & Hermosín, 2010; Fernández-Costales & González-Riaño, 2015). The development of bilingual competences is, in turn, a proposal whose relevance is not simply limited to improving the level of English, or even to attaining specific skills in that language, but rather to developing the competences required to «teach and learn in English». It is not, therefore, simply a question of a linguistic education, but also of a pedagogic education, along with the acquisition and development of generic competences.

It is noteworthy that the value given to Personal Competences by all three groups was above average. According to the REFLEX research (2000) (*The Flexible Professional in the Knowledge Society*) from the 4th Framework Programme of the European Union, whose objective was to discover the competences most demanded by the labour market and those acquired in Higher Education, companies have shown that responsibility and personal honesty are more highly valued than academic prowess, and state that it is necessary to have good professional and personal training for a successful

insertion into the labour market. The competency best developed in the three groups is teamwork. However, with regard to the group comprising teaching professionals, the competency that implies working in a group with other teaching professionals is that with the lowest mean.

The results for Systemic Competencies obtained from the three groups were all above average. Promoting autonomous learning and adaptation to new situations was very positively evaluated by the Students and the Graduates (Solanes, Núñez & Rodríguez, 2008), thus reinforcing the interest shown by studies on assisting the management of progression in learning and increasing personal motivation, while simultaneously facilitating integration into society and the labour market, by learning to be more demanding of oneself and of one's education. The development of creativity was, therefore, very positively evaluated by all three groups. In a study carried out on the evaluation and education of creativity, Porto (2008) stated that it is not very notably present in the study plans of Spanish universities, and other international research also concurs with this author, by showing the reduced contribution made by the Spanish university education system to the development of this competency (Soler, 2003). Furthermore, we evaluated the contributions made by De la Torre and Violant (2006) to the education of teaching professionals, as regards the evaluation and development of this competency.

According to Rodríguez Esteban (2007), university teaching is currently increasingly concerned about extending its students' education by means of transversal or generic competences. Society, the labour market, and students themselves, are demanding teaching that is not as focused on disciplinary content and on the traditional education based principally on the specific competences proper to each degree.

The information collected in this study regarding the perceptions of these three population groups has allowed us to analyse possible imbalances and lacks in university education. We have obtained results that could lead to proposals concerning the adaptation of higher education to the demands of the labour market, thus favouring employability. This information could, therefore, prove fundamental in the system of guaranteeing the quality of degrees, and our participants' opinions may contribute to the continuous improvement of teaching, and even to the reformulation of new objectives.

With regard to future work, we believe that the results obtained from this study could orient the increasing need to develop generic competencies for the teaching and quality of university studies. It is necessary to reinforce the training of teaching professionals as regards both the design of their subjects and, more specifically, the incorporation of generic competencies into their educational guidelines. An education in personal competencies,

such as teamwork, the capacity to lead, abilities in communication and an innovative spirit, continues to be a challenge for universities, whilst of the instrumental competences, the domination of a second language continues to play a very relevant role as regards guaranteeing a quality education.

This study is closely related to the specification of curricular reform in the European Higher Education's study plans. The definition of generic and specific competences is, therefore, a key element that should be specified when new degrees are proposed. In order to carry out this proposal in Spain, it is necessary to have external references that will help universities to both justify the degree itself and define objectives and competences or the planning and organization of the teaching. Upon obtaining the perceptions of graduates themselves regarding their training in competences that they received once they had completed their studies and had even become part of the working world, we obtained one of these external references, which will enable us to analyse possible faults or lacks as regards university education. We, therefore, have a proposal that will assist us with this objective of making higher education appropriate for the demands of the labour market and definitively providing students with the abilities required to favour their employability.

As has been shown, the information provided by the three groups of participants (students, teachers and graduates) may, therefore be of great use when defining and designing proposals for new degrees. This information is also fundamental for the system of guaranteeing the quality of degrees. The participants' opinions could assist in the continual improvement of the setting up of teaching and the reformulation of new objectives.

One of the limitations of this work is that it was impossible to reach clear conclusions when comparing the differences in the same population group, be it students, graduates or teachers, owing to the need to consider other variables that may have influenced the results. And particularly the fact that the results obtained were fundamentally based on the participants' perceptions. It would, therefore, be appropriate to carry out further studies consisting of a more specific analysis of the results obtained and taking into consideration other study variables.

NOTES

- 1 This study was carried out as part of the following R+D+i project: «*The educative competencies involved in the initial training of physical education teachers*», convened in November 2013 as part of the State Research, Development and Innovation Programme Oriented towards Challenges in Society, within the framework of the State Plan for Scientific and Technical Research and Innovation 2013-2016. Reference: EDU 2013-42024-R. Duration: 3 years (2014-2016).

REFERENCES

- Arribas, J.M., Manrique, J.C., y Tabernero, B. (2016). Instrumentos de evaluación utilizados en la formación inicial del profesorado y su coherencia para el desarrollo de competencias profesionales en los estudiantes: visión del alumnado, egresados y profesorado [Evaluation instruments used in initial teacher training and their coherence for the development of professional competences in students: students' vision, graduates and teachers]. doi: http://dx.doi.org/10.5209/rev_RCED.2016.v27.n1.45724
- Bartram, D., & Roe, R. (2005). Definition and assessment of competences in the context of the European Diploma in Psychology. *European Psychologist*, 10, 93-102. Retrieved from <https://goo.gl/AWcwe4>
- Delors, J. (1996). *La educación encierra un tesoro* [Education is a treasure]. Madrid: Santillana.
- De la Torre, S. y Violant, V. (2006). Comprender y evaluar la creatividad. Cómo investigar y evaluar la creatividad [Understand and evaluate creativity. How to research and evaluate creativity]. Málaga, Spain: Aljibe.
- Fallows, S., & Steven, C. (2000). *Integrating key skills in higher education; employability, transferable skills and learning for life*. London: Kogan Page.
- Fernández-Costales, A., & González-Riaño, X.A. (2015). Teacher Satisfaction Concerning the Implementation of Bilingual Programmes in a Spanish University. *Porta Linguarum*, 23, 93-108.
- Fernández-Santander, A., García-García, M.J., Sáez-Pizarro, B., & Terrón-López, M.J. (2012). Development and assessment of key skills in undergraduate students: An action-research experience. *Higher Learning Research Communications*, 2(1), 32-49.
- Flora, D.B., & Curran, P.J. (2004). An empirical evaluation of alternative methods of estimation for confirmatory factor analysis with ordinal data. doi: <https://dx.doi.org/10.1037%2F1082-989X.9.4.466>
- García-Sanz, M.P. (2014). *La evaluación de competencias en la Educación Superior mediante rúbricas: un caso práctico*. doi: <http://dx.doi.org/10.6018/reifop.17.1.19886>
- Gairín, J. (2011) Formación de profesores basada en competencias. (Competency-Based Training of teachers). *Bordón. Revista de Pedagogía*, 63(1), 93-108.
- González, J., & Wagenaar, R. (2003). *Tuning Educational Structures in Europe I. Final Report*. Bilbao: Universidad de Deusto. Retrieved from <https://goo.gl/WDHDxN>
- Hu, L., & Bentler, P.M. (1999). *Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives*. doi: <http://dx.doi.org/10.1080/10705519909540118>
- Jöreskog, K.G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Hillsdale, NJ: Lawrence Erlbaum Associates Publishers.
- Kember, D. (2009). Promoting student-centred forms of learning across an entire university. *Higher Education*, 58, 1-13.

- Lahuerta, A.C. (2015). The Written Competence of Spanish Secondary Education Students in Bilingual and Non-Bilingual Programs. *Porta Linguarum*, 24, 7-61.
- Lova, M., Bolarín, M.J., & Porto, M. (2013). Programas bilingües en Educación Primaria: Valoraciones de docentes [Bilingual Programs in Primary Education: valuations of Teachers]. *Porta Linguarum*, 20, 253-268.
- Martínez, L.F., Castejón, F.J., y Santos, M.L. (2012). Diferentes percepciones sobre evaluación formativa entre profesorado y alumnado en formación inicial en educación física [Different perceptions of formative assessment between teachers and students in initial training in physical education]. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 15(4), 57-67.
- Mérida, R. (2007). Hacia la Convergencia Europea: los proyectos de trabajo en la docencia universitaria [Towards the European Convergence: the projects of work in the university teaching]. *Revista Electrónica de Investigación Psicoeducativa* 13(5), 825-852.
- Muros, B. y Luis-Pascual, J.C. (2012). Aprendizaje, capacidades cognitivas y evaluación formativa en formación inicial del profesorado. *Revista de Ciencias de la Educación*, 230, 171-182.
- OECD [The Organization for Economic Cooperation and Development] (2000). *Measuring student Knowledge and Skills: The PISA 2000 assessment of Reading, Mathematical and Scientific Literacy*. Retrieved from <https://goo.gl/dR1ANX>
- Perrenoud, P. (2001). *The key to social fields: Competencies of an autonomous actor*. In D.S. Rychen & L.H. Salganik (eds.). *Definition and selection key competencies*, (pp. 121-149) Germany: Hogrefe & Huber.
- Porto, M. (2008). Evaluación para la competencia creativa en la educación universitaria [Evaluation for creative competence in university education] *Cuadernos Facultad de Humanidades y Ciencias Sociales*, 35. Retrieved from <https://goo.gl/zYy8D6>
- Pozo, J.I., y Monereo, C. (2001). ¿En qué siglo vive la escuela? El reto de la nueva cultura educativa [In which century does the school live? The challenge of the new educational culture]. *Cuadernos de Pedagogía*, 298, 50-55.
- Ramos, F. (2007). Programas bilingües y formación de profesores en Andalucía [Bilingual programs and teacher training in Andalusia]. *Revista Iberoamericana de Educación*, 44, 133-146.
- REFLEX [The Flexible Professional in the Knowledge Society] (2000). *Higher Education as a Generator of Strategic Competences*. Retrieved from <https://goo.gl/kEjftS>
- Rodríguez Esteban, A. y Vieira M.J. (2009). La formación en competencias en la universidad: un estudio empírico sobre su tipología [Skills training at the university: an empirical study on its typology]. *Revista de Investigación Educativa*, 27(1), 27-47.
- Rodríguez Esteban, A. (2007). Las competencias en el Espacio Europeo de Educación Superior: Tipologías [Competences in the European Higher Education Area: Typologies]. *Humanismo y Trabajo Social*, 6, 83-91.
- Rubio, F.D., y Hermosín, M.J. (2010). Implantación de un programa de plurilingüismo en el espacio europeo de educación superior: Análisis de

- contexto y detección de necesidades [Implementation of a multilingualism program in the European Higher Education Space: Context analysis and detection of needs]. *Revista de Educación*, 12, 107-128.
- Ruíz-Gallardo, J.R., Ruíz, E., y Ureña, N. (2013). La evaluación en la Formación Inicial del Profesorado: Qué creemos hacer y qué perciben los alumnos [Evaluation in the Initial Teacher Training: What we believe to do and what the students perceive]. doi: <http://dx.doi.org/10.12800/ccd.v8i22.220>
- Sánchez-Elvira, A., López-González, M.A., y Fernández-Sánchez, M. V. (2010). Análisis de las competencias genéricas en los nuevos títulos de grado del EEES en las universidades españolas [Analysis of the generic competences in the new degrees of degree of the ESEA in the Spanish universities]. *Revista de Docencia Universitaria*, 8(1), 35-73.
- Solanes, A., Núñez, R., y Rodríguez J. (2008). Elaboración de un cuestionario para la evaluación de competencias genéricas en estudiantes universitarios [Elaboration of a questionnaire for the evaluation of generic competences in university students]. *Apuntes de Psicología*, 26(1), 35-49.
- Soler, M.I. (2003). Creatividad en el ámbito universitario: la experiencia de Chile [Creativity in the university field: the experience of Chile]. *Creatividad y Sociedad*, 3, 39-45.
- Travé, G. (2013). Un estudio sobre las representaciones del profesorado de Educación Primaria acerca de la enseñanza bilingüe [A Study of Primary School Teachers' Representations Regarding Bilingual Teaching]. doi: 10.4438/1988-592X-RE-2011-361-149
- Tejada, J. (2009). Competencias docentes [Teaching competences]. *Profesorado. Revista de Curriculum y Formación del profesorado*, 13(2), 1-15.
- UNESCO [United Nations Organization for Education, Science and Culture] (2012) Los jóvenes y las competencias: trabajar con la educación [Youth and skills: work with education]. Luxembourg: UNESCO. Retrieved from <https://goo.gl/vYMUqF>
- UNESCO [United Nations Organization for Education, Science and Culture] (2011). La UNESCO y la Educación «Toda persona tiene derecho a la educación» [UNESCO and Education «Everyone has the right to education»]. Retrieved from <https://goo.gl/ngfS2Q>
- Vargas, F., Casanova, F., y Montanero, L. (2001). *El enfoque de competencia laboral: manual de formación* [The labor competency approach: training manual]. Montevideo, Uruguay: Cinterfor.
- Villa, A., y Poblete, M. (2011). Evaluación de competencias genéricas: principios, oportunidades y limitaciones [Evaluation of generic competences: principles, opportunities and limitations]. *Revista Borden. Revista de Pedagogía*, 63 (1), 147-170.
- Westera, W. (2001). Competences in education: A confusion of tongues. doi: <http://dx.doi.org/10.1080/00220270120625>
- Zabala, A., y Arnau, L. (2008). *Once ideas clave. Cómo aprender y enseñar competencias* [Eleven key ideas. How to learn and teach skills]. Barcelona: Graó.
- Zabalza, M.A. (2011). Evaluación de los planes de formación docente de las universidades [Evaluation of teacher training plans of universities]. doi: <https://doi.org/10.5565/rev/educar.77>

PERFIL ACADÉMICO Y PROFESIONAL DE LAS AUTORAS

María Isabel Amor. Doctora en Psicopedagogía y máster en Terapia de Conducta por la UNED. Profesora Ayudante Doctora del departamento de Educación de la Universidad de Córdoba. Promotora y secretaria de la Red de Investigación Iberoamericana de la Profesión Docente (RIPRO).

Rocío Serrano Rodríguez. Doctora en Psicopedagogía y Profesora Ayudante Doctora del departamento de Educación de la Universidad de Córdoba. Presidenta de la Red de Investigación Iberoamericana de la Profesión Docente (RIPRO)

Dirección de las autoras: Universidad de Córdoba
Facultad de Ciencias de la Educación
Av. San Alberto Magno s/n
14006 - Córdoba
E-mail: m.amor@uco.es
rocio.serrano@uco.es

Fecha recepción del artículo: 15. Febrero. 2018
Fecha modificación del artículo: 05. Abril. 2018
Fecha aceptación del artículo: 09. Abril. 2018
Fecha revisión para publicación: 20. Junio. 2018