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ORIGINAL

PERCEPTION QUESTIONNAIRE OF TEACHING COMPETENCIES IN PHYSICAL EDUCATION

CUESTIONARIO DE PERCEPCIÓN DE COMPETENCIAS DOCENTES DE EDUCACIÓN FÍSICA

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ABSTRACT

The incorporation of competencies in Spain is a key element of its quality. However, there are no assessment tools available to assess them in the specific field of the pre-service PE Teacher Education. The main objective of this study is to design and validate a scale to assess the perception of the teaching competencies of these students. For its creation and validation, a methodology based on the Classical Test Theory was followed, with special emphasis on the calculation of the reliability and validity of the scale. The sample for its validation is of 1713 undergraduates and graduates (1240 undergraduates, 473 graduates), who belong to 20 different Spanish universities. The final scale presents a factorial structure of four main factors

and 22 items with which high reliability and adequate content and construct validity are achieved.

KEY WORDS: Teaching competencies, Pre-service teacher education, Physical Education, Scales validation, Factorial Confirmatory Analysis.

RESUMEN

La incorporación de las competencias en la universidad española es un elemento clave de su calidad. Sin embargo, no se dispone de instrumentos adecuados ni suficientes para su medida en el campo concreto de la formación inicial del profesorado de Educación Física. El principal objetivo de este trabajo es diseñar y validar una escala para medir la percepción de competencias docentes de este alumnado. Para su construcción y validación, se ha seguido una metodología fundamentada en la Teoría Clásica de Test incidiendo especialmente en el cálculo de la fiabilidad y de la validez de la escala. La muestra para su validación es de 1713 estudiantes y egresados (1240 estudiantes, 473 egresados), pertenecientes a 20 universidades españolas. La escala final presenta una estructura factorial de cuatro factores principales y 22 ítems con los que se alcanza una alta fiabilidad y una adecuada validez de contenido y de constructo.

PALABRAS CLAVE: Competencias Docentes, Formación Inicial del Profesorado, Educación Física, Validación de Escalas, Análisis Factorial Confirmatorio.

INTRODUCTION

The new knowledge society requires innovations and changes in the traditional methods of training, production, communication and information (Delors, 1996). The well-being of citizens, the dynamism of the economy and the deepening of the democratic participation depend largely on the way in which societies incorporate these changes and assume the social transformations that they entail, being essential for this to start from teacher's own welfare (Marchesi, 2005).

The European Higher Education Area (EHEA) aims to develop policies that promotes an education in constant change, as well as a transcendent transformation of the design of the new teacher training undergraduate studies. The university reform that arises from the Bologna process requires a new organisation of the academic activity in order to address, within the social framework of information and knowledge, the challenges resulting from innovation (Garmendia, 2009). As a consequence of this process of convergence towards the EHEA, the incorporation of competencies in university studies is a basic element for the education in a changing society. A society that constantly reformulates its demands and which, in turn, aspires to professionalise university education, bringing the University closer to society

and the world of work (Palmer, Montaño y Palou, 2009). On the other hand, as pointed out in the Delors Report (1996), instead of *qualification*, society increasingly demands competence. This one combine the training and qualification acquired by technical and professional training, with the social behavior, aptitude for teamwork, initiative, taste for risk... The term of competence integrates the knowledge, the know-how and the know how to be (Delors, 1996).

The concept of competence has several references (Le Boterf, 2000; Martín and Moreno, 2007; Perrenoud, 2004; Zabalza, 2003), that consider that this term refers to the selection and relevant combination of knowledge, abilities, skills, attitudes, values and rules that make it possible to answer to a complex situation in a given context. For Tejada (2005) “a competence represents a set of knowledge, procedures and attitudes combined, coordinated and integrated, in the sense that the individuals must have the know-how and the know-how-to-be for their professional practice”, (p.7). It refers to the four areas of knowledge of the definition of competencies: theoretical knowledge of an academic field of the professional field ("to know"), applying knowledge to specific professional situations ("know-how"), personal characteristics and attitudes towards oneself, towards others and towards the profession ("to know how to think") and the set of attitudes and interpersonal skills that allow to interact in the professional environment ("to know how to be") ". Being professionally competent is equivalent to being able to efficiently and appropriately perform different professional tasks related to these competencies. Likewise, to have the competence means to have the capacity to successfully respond to the personal and social demands that an activity or any task poses us in the context of professional practice (Rué, 2007).

The objectives of the new curricula must provide a university education in which the basic generic competencies, the transversal competencies related to the comprehensive training and the more specific competencies are integrated in a harmonic way, which enables a professional guidance so that graduates can integrate into the labour market (Ministrty of Education, Culture and Sports - MECD, 2003). There are different models that group the core competencies from the point of view of professional performance. For this study, we have considered the proposals made by Pereda and Berrocal (1999) and Solanes, Núñez and Rodríguez (2008), which differentiate between two types of competencies: (a) Generic or transversal competencies: those that may be common and refer to general characteristics of people; (b) Specific competencies: those related to a specific work area (such as the case of Physical Education teachers).

In the specific field of Physical Education teacher training, the future teacher must acquire a set of competencies that allow him/her to attend and solve problematic situations related to a practice that generates change, through a professional improvement, with the possible reconstruction of the reality and of an effective personal and professional stance. For this purpose, it is necessary to overcome a type of academic and efficiency and market-based perspective of the teaching work by promoting a teaching-learning model based on reflection and self-criticism on praxis, which leads the teacher to question his/her own professional practice (Fraile,

2004). In the "specific teaching competencies", the teacher must know his/her subject and must know how he/she should teach it. Therefore, he/she must have some epistemological knowledge of Physical Education. Consequently, it requires technical-scientific and educational knowledge of his/her professional activity, as well as analytical and reflective skills, comprehension skills and the ability to apply the process (Fraile y Aparicio, 2015a, 2015b).

Research on professional competencies began in the 70s, within the technological and behavioural approaches of teacher training, according to trends in models such as the CBTE (Competency Based Teacher Education) (Navio, 2005). Likewise, in developed countries, they have designed documents which describe and structure the skills and abilities for several professional groups or families that the worker must acquire, as well as they have created criteria to assess the level of improvement achieved. Some examples include: "USA National Skills Standards" in the United States; “General National Vocational Qualifications” in the United Kingdom; “National Competency Standards at Technical and Further Education” in Australia (Corominas, 2001). Similarly, in the international context, one of the most outstanding works on teaching competencies is the one carried out by the teachers Bourgonje and Tromp (OXFAM NOVID, 2011), researchers in the field of education and development at the University of Amsterdam (The Netherlands). The study focused on quality educators and they analysed the competencies and standards for teachers from different countries.

The field of the assessment of teaching competencies is novel in Spain, both in relation to the general competencies and to the specific teaching competencies of Physical Education. En este último campo, los estudios de evaluación de competencias se han centrado fundamentalmente en la revisión de qué tipo de competencias están presentes en la formación del profesorado de Educación Física (Baena y Granero, 2012; Boned, Rodríguez-Romo, Mayorga y Merino, 2006; Díaz del Cueto, 2009; Gallardo, 2006; Gallego-Ortega y Rodríguez-Fuentes, 2017; Hernández, 2007; Lleixá, Robert y Batalla, 2010; Lleixá, Torralba, Abrhao, 2010; Romero, 2009). As a specific contribution on competencies assessment, we can mention the work of Baena, Granero and Martínez (2015) on the Spanish validation of the Evaluation of Teaching competencies Scale (ETCS), carried out with the objective of measuring the competencies of the Secondary School Physical Education teachers. It is also worth mentioning the work of Martínez-Mínguez (2016), whose objectives are focused on analysing the influence of the development of a tutored learning project, with mixed teams of professors and teachers and on the elaboration of good practices concerning the perception of teaching competencies. The instrument used for the assessment is called: "*Scale of Self-perception of Psychomotor Professional Competencies*" (EAACPP, for its Spanish initials), which analyses five competencies: organisation, assessment, teamwork, planning, environment and dissemination.

In the university educational levels, Salcines-Talledo, González-Fernández, Ramírez-García and Martínez-Mínguez (2017) have developed and validated a

scale of self-perception of transversal and professional competencies for students, in which a specific scale is included for the pre-service PE teacher Education. Apart from that, Moreno-Murcia, Silveira and Belando (2015) have developed a questionnaire to assess the performance and competencies of the university teaching staff (Questionnaire of the Teaching Performance Assessment -CEID, for its Spanish initals). This questionnaire applies to a sample of university students. Its results show a factorial structure of three dimensions (planning, development and result) with an adequate reliability and validity. As for Castejón-Oliva, Santos-Pastor and Palacios-Picos (2015), they validated a questionnaire to assess the perceptions of the students in relation to the participative methodology and the assessment of the training received.

Finally, Aparicio and Fraile (2015) analyse the acquisition of interpersonal teaching competencies thanks to the development of a programme of corporal expression carried out with future teachers of Physical Education. For the assessment of perception of students' competencies, the authors use the "Scale of assessment of interpersonal competencies of the Physical Education teacher" (EcoiDEF, for its Spanish initials). Its purpose was to assess the generic competencies of university students, for which they used 33 items that correspond to the following interpersonal competencies: teamwork, communication with experts from other areas, skills in interpersonal relationships, appreciation of diversity and multiculturalism, capacity for self-criticism, criticism and ethical commitment. For the creation of said instrument, Solanes et al, (2008) and Corominas et al, (2006) were taken as references.

OBJECTIVES

The purpose of this study is to develop an assessment tool of the perception of specific teaching competencies of Physical Education, to be applied in students in training. Specifically, our objectives are:

1- To design a scale to assess the perception of competencies of the students carrying out the degree to be a PE teacher (FIPEF, for its Spanish initials).

2- To test their psychometric properties, with special emphasis on the confirmation of their content validity and their construct validity.

METHOD

SAMPLE

The sample used to validate this questionnaire consists of 1713 undergraduates and graduates (1240 undergraduates, 473 graduates), who belong to 20 different university centres of 20 Spanish cities (Table 1).

Table 1. *Place of origin of the University Centres*

	Frequencies	Percentage

Seville	220	12.8
Murcia	173	103
Albacete	164	9.6
Barcelona	158	9.2
Lleida	124	7.2
Segovia	119	6.9
Granada	99	5.8
León	93	5.4
Huesca	93	5.4
Vitoria-Gasteiz	89	5.2
Valencia	82	4.8
Valladolid	69	4.0
Santander	64	3.7
Madrid	52	3.0
Córdoba	44	2.6
La Laguna	42	2.5
Zamora	23	1.3
Salamanca	3	0.2
Zaragoza or Saragossa	2	0.1
Total	1713	100

The selection of the participants was made through a non-probabilistic sample, taking as a reference the universities belonging to a National Network of Formative Evaluation in Higher Education. The data collection was carried out by properly trained teachers and with the express permission of all the participants.

Out of 1240 students, 793 (64%) were enrolled in the Bachelor's Degree in Primary Education (concentration in Physical Education) and the remaining 447 (36%) were enrolled in the Bachelor's Degree in Physical Activity and Sports Science (CAFYD). In all cases, at the time of the data collection, they were in the last year of the degree, at the end of the second semester. As for the graduates, 137 out of 473 (29%) worked as teachers in public or state-funded schools, being their teaching experience of one year long on average; the remaining 71% either did not work or did it in other jobs not related to teaching; 83% had completed their higher education in the last three school years. 76% of respondents are under 30 years old, 14% between 31 and 35 years old and only 9% are more than 36 years old. Out of the total, 57% are men and 43% women.

Furthermore, 8 judges-assessors from different Spanish universities participated in the validation of the content of the test. Their average age is of 43 years old and their professional experience on average is of 15 years in different professional categories. All of them are university professors who teach in areas related to the competencies that are intended to be assessed.

PROCEDURE

First phase: Experts Validation of the contents of the questionnaire

Following the instructions of Carretero-Dios and Pérez (2005), a group of researchers from the National Network of Assessment in Physical Education prepared the first drafts of the questionnaire in a first stage. In previous paragraphs, the differences between two major types of competencies have been pointed out: (a) generic or transversal, those that are common and refer to general characteristics of people; (b) specific, those related to a specific work area; in this case they refer to the field of Physical Education teachers. Therefore, in a second step, the specific competencies to be taken into account in the initial training of Physical Education teachers have been broken down into two main types: (1) the general teaching competencies; and, (2) the teaching competencies of Physical Education. In a first version of the questionnaire, the list of competencies common to all the Primary Education Degrees was used, as well as the specific competencies of the teacher with the concentration in Physical Education of the White Book (ANECA, 2005b). On top of that, the list of competencies collected in the White Paper for the degree of Physical Activity and Sports Science (CAFYD, for its Spanish initials) was also used (ANECA, 2005a).

With the first version of the questionnaire, a review of 8 expert judges was carried out. They were specialised in the FIPEF (pre-service PE Teacher Education), either with concentration in Physical Education in Primary or with the Bachelor's degree in Physical activity and Sports Science (CAFYD, for its Spanish initials), with a minimum of 15 years of experience in FIPEF and with recognised reputation as teachers and researchers. After the process of reviewing and analysing the assessments provided by the expert judges, a second version of the questionnaire was obtained, after grouping, eliminating, refining and modifying items, leaving a total of 27 items, out of the initial 38.

Second phase: refinement of the initial scale

The second version of the questionnaire was applied to a random sample of 85 final year students of the two specific degrees, from four different universities. In each one of the degrees, the responsible researchers handed out a questionnaire to each student, asking them to indicate the items whose meaning they did not understand well or could generate problems or errors of understanding. They were also asked to mark the expressions that were confusing and could be better understood if they were put in another way. After carrying out that individual review process, a group interview was conducted. In that interview, they talked about the comprehension problems encountered and they triangulated the assessments of each student with those of the others. Based on all the reviews and assessments provided, the questionnaire was revised and a new version was obtained, composed of 22 items, which was considered the final scale.

Third phase: Psychometric analysis of the final scale

The statistical programme SPSS v.23 and the programme Lisrel 8.8 were used to calculate the psychometric values of this final scale of 22 items. With the first programme, the corresponding exploratory analysis of the items were carried out while looking for possible out-of-range values. These values, together with the missing values (both those defined by the system and those defined by the user) were scarce and never exceeded 1% of the total. In addition, a first matrix of factors was obtained. After this first Exploratory Factor Analysis (EFA), its factors underwent a Confirmatory Factor Analysis (CFA) with the Lisrel programme 8.8. For this calculation, the polychoric correlations were obtained, considering the ordinal nature of the intervening variables according to the Olsson criterion. (1979). The estimation method of the model parameters was the asymptotically distribution free method, which makes it efficient for any distribution of the variables, not being necessary the assumption of multivariate normality (Batista y Coenders, 2000). After these calculations, the final reliability values of the different scales, product of this CFA and of the total scale, were obtained.

RESULTS

CONSTRUCTION VALIDITY AND FINAL RELIABILITY

In a first EFA, four main factors that explained 53% of the total variance were obtained (Table 2). The indicators of the relevance and validity of this analysis presented adequate values (KMO=,95; Chi-square=12492,2; p=,00).

Table 2. *Rotated Component Matrix*

	Component 1	2	3	4	Factor
1.3.- To design, create and assess the teaching and learning processes associated with physical activity and sports in relation to specific and contextual characteristics of individuals	0.698				F1 Teaching-learning processes of the PE
1.20.- To design, create and assess the teaching and learning processes associated with the motor competence in relation to specific and contextual characteristics of individuals	0.665				
1.1.- Degree of help in the development of the teaching competence: To Design, apply and analyse didactic interventions in the subject of Physical Education	0660				
1.2.- Degree of help in the development of the teaching competence: To develop and implement physical education programmes that promote the effective inclusion of students with special educational needs	0.650				
1.17.- To be able to reflect on the teaching/learning process, on the different organisational types and the different methodologies within Physical Education classes	0.605				
1.16.- To be able to respond to diversity in Physical Education practices	0.584				
1.19.- To design, modify and/or adapt to the educational context motor situations oriented to the development and improvement of motor skills	0.561	,			
1.14.- To know how to use assessment tools in the subject of Physical Education	0.556				
1.5.- To know the psychomotor development and its evolving stages of maturity		0.731			F2 Fundamentals of physical and psychomotor development
1.6.- To know the physical capacities and the factors that determine their evolution and to know how to apply their specific technical foundations		0.683			
1.18.- To know and understand the evolutionary processes of the body and of the motor skills		0.607			
1.7.- To know the biological and physiological fundamentals of the human body in relation to physical activity		0.525			
1.4.- To know and promote the different motor manifestations that are part of the traditional culture		0.487			
1.13.- To know how to apply the fundamentals (techniques) of physical activities in the natural environment			0.615		F3 Learning contents and physical activities
1.12.- To know how to use the game as a teaching resource and as teaching content			0.563		
1.8.- To know the elements and foundations of the body language and of the non-verbal communication and its formative and cultural value			0.552		
1.9.- To know the basics of sports initiation at school and to design specific tasks for use in the field of education			0.435		
1.15.- To promote complementary activities related to physical activity and sports inside and outside the educational field			0.538		
1.22.- To identify and prevent the health risks that result from the practice of inappropriate physical activities				0.775	F4 Body hygiene and healthy habits
1.21.- To analyse and communicate, in a critical but grounded way, the value of physical activity and sport and its possibilities to contribute to the development and well-being of people.				0.619	
1.10.- To have strategies to apply the health elements on hygiene and nutrition in the educational practice				0.512	
1.11.- To have teaching strategies that promote the acquisition of regular physical activity habits				0.493	
Eigenvalues	8.15	1.28	1.24	1.00	

% Variance Explained	37.08	5.82	5.66	4.56
% Cumulative Variance Explained	37.08	42.91	48.58	53.14
KMO	0.95			
Bartlett's test of sphericity	Chi-squared test = 12492,67; df= 231; sig=0,00			

The first factor (F1) explains 37% of the total variance of the test and is important in aspects related to the design, development and assessment of the teaching-learning processes, taking into consideration the characteristics of the students and their special educational needs. Therefore, this factor has been named "Competencies related to the teaching-learning processes of Physical Education". The second factor (F2), related to the foundations of the physical and psychomotor development, explains 6% of the total variance. Moreover, it has important correlations with the knowledge of physical and psychomotor development from an evolutionary perspective and in relation to physical activity. The third factor (F3) has been called "Learning contents and physical activities" due to the importance of the items related to those contents such as: sports initiation at school, physical activities in the natural environment, body language, games and organised physical activities, either in the educational field in general or in an extracurricular context. The fourth and last of the factors (F4) is related to aspects such as the identification and prevention of health risks that result from the practice of physical activity, the relationships between physical activity, food, health and personal well-being, as well as the application of acquisition strategies of regular physical activity habits. Therefore, it has been called: "Competencies related to body hygiene and healthy habits".

Additionally, the existence of a general factor ("Specific Teaching Competencies of the Physical Education Teacher") that would include these four factors was considered. Assumptions that have been contrasted by a CFA whose adjustment values are summarised in the Table 3.

Table 3. *Assessment of the factorial structure of the questionnaire (CFA)*

Model	S-B(Chi-squared test) (df) (p)	RMSEA	NFI	NNFI	CFI	AGFI	AIC
Four subfactors and one main factor	1458.54 (200) (p = 0,00)	0,068	0,97	0,97	0,98	0,89	1617.93

The model presents an adequate adjustment with values of the Normed Fit Index (NFI) and of the Non-Normed Fit Index (NNFI), above the minimum established for this type of calculation (Bentler y Bonnett; 1980). Likewise, the Comparative Fit index (CFI) of Bentler (1990) and the AIC index (Akaike, 1987) showed adequate values. Finally, the Root Mean Square Area (RMSA) also shows values equally suitable for this type of models (Browne and Cudeck, 1993). Figure 1 shows the particular values of the adjustment of all items and of each one of the factors of said model (Figure 1).

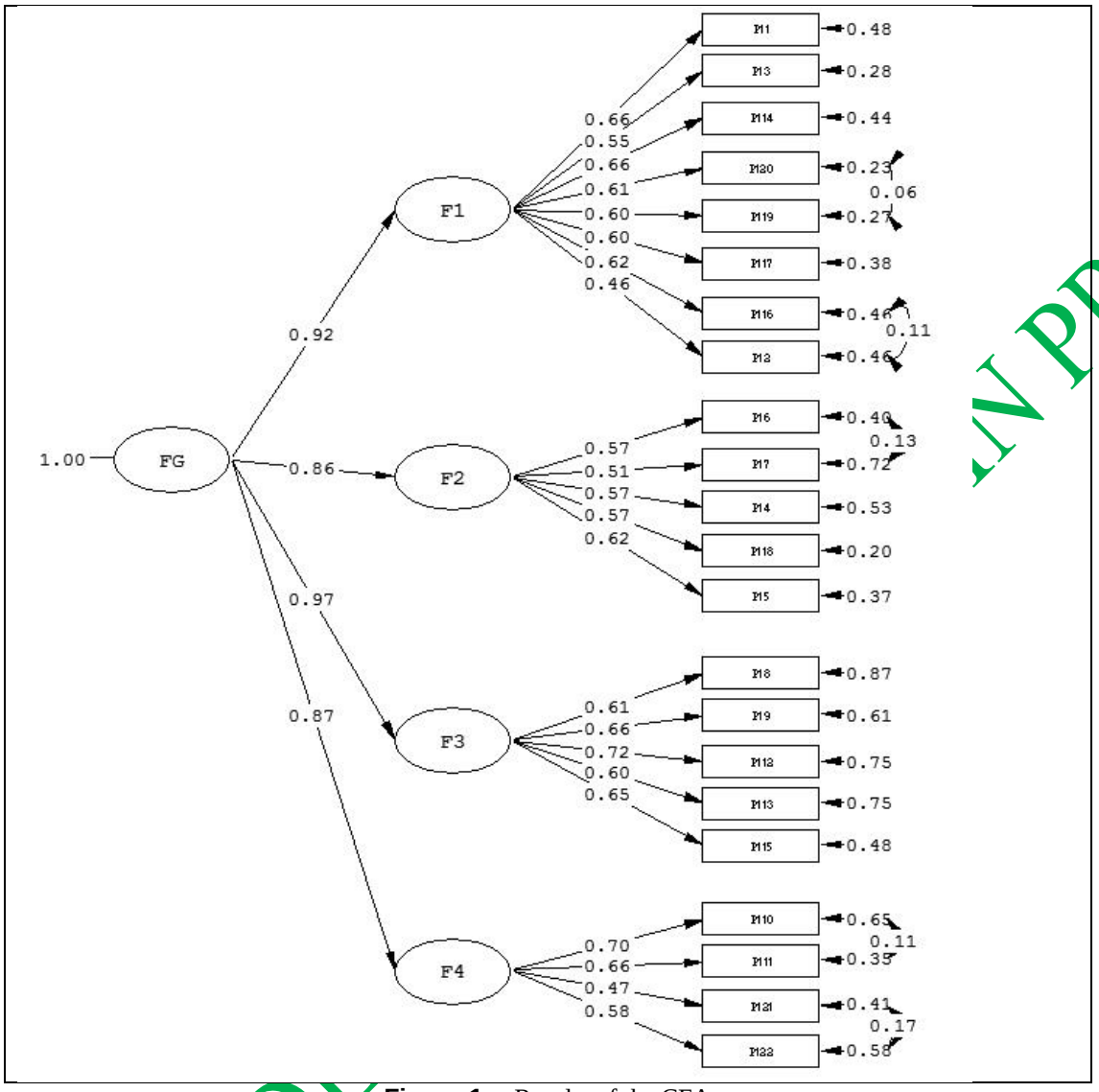

Figure 1.- Results of the CFA

As it can be seen, the 7 items that make up the F1 have significant coefficients; in addition, the reliability of the factor (of the subscale) is high (Table 4). Results that we find again with the other factors: all the coefficients are significant and with adequate reliability values. All values of the test are noteworthy (g factor), with a high Cronbach's alpha and with the four factors with equally high and significant factor loads.

Table 4. Factorial structure of the questionnaire and analysis of its reliability

Items	Factor	Regression coefficients	t	Sig.	Coefficient of determination	Cronbach's alpha
P11		0.66	240.16	0.02	0.48	
P12		0.46	190.61	0.02	0.31	
P13		0.55	240.96	0.02	0.52	
P114	F1	0.66	240.51	0.02	0.50	0.859
P116		0.62	230.41	0.02	0.45	
P117		0.60	240.19	0.02	0.49	
P119		0.60	250.85	0.02	0.57	

P120		0.61	260.83	0.02	0.62	
P14		0.57	230.92	0.02	0.38	
P15		0.62	210.03	0.02	0.51	
P16	F2	0.57	20.20	0.02	0.45	0.760
P17		0.51	160.31	0.03	0.27	
P118		0.57	220.42	0.02	0.62	
P18		0.61	240.95	0.03	0.30	
P19	F3	0.66	180.09	0.03	0.42	
P112		0.72	170.93	0.04	0.41	0.702
P113		0.60	160.70	0.03	0.33	
P115		0.65	180.76	0.03	0.47	
P110		0.70	20.16	0.03	0.43	
P111	F4	0.66	250.18	0.02	0.56	0.741
P121		0.47	170.64	0.02	0.35	
P122		0.58	180.00	0.03	0.37	
Factors	Factor	Regression coefficients	T	Sig.	Coefficient of determination	Cronbach's alpha
F1		0.92	260.51	0.03	0.85	
F2	FG	0.86	210.72	0.04	0.74	0.917
F3		0.97	20.58	0.04	0.93	
F4		0.87	220.49	0.03	0.76	

The reliability of the four subscales was acceptable in all cases and the indexes of discrimination and the item-scale correlation were higher than required in this type of studies. Considering the total scale of competencies, there are also adequate correlations among all the items and, in no case, the elimination of any item improved the reliability of the test.

CONCLUSIONS

The implementation of the EHEA has been a challenge and an important opportunity for the improvement in the universities. This implementation entails a leading position of the concept of "competence", and its relationship with the four types of knowledge (to know, to know how, to know how to think and to know how to be). The new curricula of the degrees integrate different types of competencies. In the degrees focused on the pre-service Teacher Education, the general and specific teaching competencies stand out. In the FIPEF (pre-service PE Teacher Education), both types of competencies have been sufficiently defined and developed at the legal level, but we cannot say the same thing about their assessment. We know what to assess, but we do not know how to assess them. In this regard, having an assessment tool that allows us to assess competencies is an important need. Having a valid and reliable instrument to the extent of the perception of teaching competencies of FIPEF (pre-service PE Teacher Education) students covers this need and fills the existing gap.

After a proper content validation process carried out by experts who teach at university and after a pilot phase of comprehension of the items, the final scale was created with 22 items. The first Exploratory Factor Analysis (EFA) showed a structure of four factors of second order and a factor of first order. This factor

structure is later ratified by the Confirmatory Factor Analysis (CFA), which showed adequate indicators of the adjustment of the proposed model.

The first of the factors ("Competencies related to the teaching-learning processes of Physical Education") highlights the importance for the future teacher of the knowledge of the teaching-learning processes in physical education and the acquisition of the reflexive abilities of these processes. All of the foregoing within a context of educational inclusion in which attention to diversity acquires special relevance. The second component is related to the "Fundamentals of physical and psychomotor development". It is a set of competencies focused on knowledge as a component of the competence. This set is composed of aspects related to the knowledge of psychomotor development and to the processes of the evolving stages of maturity including both the body and motor processes. Likewise, those aspects are associated with the biological and physiological fundamentals of the human body in relation to physical activity. The third factor ("Learning contents and physical activities") refers to the learning contents of physical education and to the organised physical activities that are considered relevant social activities at this time and that therefore, they should be part of the physical culture of the students. The fourth and last factor ("Body hygiene and healthy habits") highlights the importance for the future PE teacher of aspects related to body hygiene, nutrition, the promotion of healthy habits and the importance of these and other aspects in the development and personal well-being.

Once the validity of the content and of the construct were verified, the reliability values of both the scale as a whole and of each one of its factors were analysed. With regard to the whole scale, the reliability index obtained allows us to ensure that the instrument has high reliability. High reliability that we also find in the subscale of competencies related to the teaching-learning processes of Physical Education. The other subscales show lower values of reliability but, in all the cases, within the limits admitted for this type of scales. All the items of the scale and of the subscales showed values of statistical significance in the structural model; on top of that, the elimination of none of them produced a significant increase in reliability, which ensures the relevance of their presence in the final scale. Likewise, the correlations of all the items with their corresponding scales showed statistically significant values.

These data ensure the psychometric consistency of the final scale and allow us to have a solid and firm instrument for the assessment of the competencies that students must acquire during their training as a teacher of Physical Education. Therefore, the instrument could be useful for several reasons: (a) to carry out studies on the degree of perception of the competencies that students have at the end of their pre-service teacher education; (b) to help to develop more detailed assessment tools to be able to assess and encourage the development of these professional competencies in the different subjects that are involved in their development; (c) to help to regulate the competencies that should be considered in the development and defense of the Final University Project, since it is obvious that the student must present it at the end of the pre-service

teacher education. The student must demonstrate the acquisition of the professional competencies required; (d) to establish coordinations among the subjects responsible for the general and specific training throughout the pre-service PE teacher education; and (e) so that said university centres can revise their curricula and thereby, be able to increase the levels of academic success of their students.

Similarly, it could be very useful for conducting assessments in the processes of public examinations and in the selection of PE teachers in the stages of Primary and Secondary. This can be especially relevant at a time when the Ministry of Education is proposing to radically change the processes of selection of teachers of the compulsory stages, establishing the so-called in some forums as: "Educational MIR (supervised practice)" (López-Rupérez, 2015; Marina, Pellicer and Manso, 2015).

We would not want to finish without pointing out some limitations that our proposal has. Some questions of the scale may not be adequately stated, since the interpretation that the undergraduates and graduates have shown does not match what was expected. In particular, the question To know and promote the different motor manifestations that are part of your traditional culture, that the factor analysis assigned to F2, one would have expected that, due to its content, it would have been assigned to the F3 factor. It should also be noted the need to increase the reliability of the subscales corresponding to the factors F2, F3 and F4, because, despite being within the psychometric allowable values, they are below those obtained by the test as a whole or in the subscale of the F1 factor. The guidelines to be followed in order to solve this problem will be to add competencies that complement these three factors.

Finally, we mention some of the future lines of action, among which it is worth mentioning the solution of the limitations indicated in the previous paragraph. Likewise, whenever a solid instrument is available, an interesting line of research is opened in the comparison of the perception of competencies of the newly admitted students and of the recent graduates.

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