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Physical Education Teachers' Competencies and Assessment in Professional Practice

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Abstract

Pre-service Physical Education teacher training should develop key competencies that guide graduates in their professional work. The application of the formative assessment at this stage is presented as a way for them to acquire these competencies. This research assesses graduates' perception of the development of key teaching competencies and whether there are significant differences depending on whether or not they are working as teachers. The relationship between some elements of assessment and grading and the development of competencies is also studied. Four hundred and eighty-seven graduates from seventeen Spanish universities participated. The results show that (a) there are no differences in the perception of the competencies acquired depending on whether or not graduates are working; (b) graduates who are working as teachers positively relate the assessment items to two of the three sets of competencies studied, and participative forms of grading to the competencies of development, application and assessment of teaching and learning processes in physical education; and (c) those who are working believe that using formative assessment during their pre-service training has helped them put the teaching competencies into practice in their professional work.

Keywords: pedagogical knowledge, pre-service training, physical education, formative assessment, key competency

Introduction

One of the main goals of the European Higher Education Area (EHEA) is to adapt university degrees to employment demands. Universities should provide training that guarantees jobs for graduates, facilitates their inclusion in the working world and is adapted to its demands (Cardona-Rodríguez et al., 2016). Graduates should positively perceive the suitability of their training to successfully meet employment demands (Elias 7 Purcell, 2004); however, in many cases, the training received is deemed insufficient for this purpose (Gil et al., 2009).

This gap would appear to exist in teacher training (Towers, 2013). The development of the key teaching competencies is fundamental for the teachers' future employability, not only in terms of job opportunities but also in the capacity that they acquire to adapt to the requirements of the educational setting. The reality of the classrooms where they will teach calls for a set of factors and strategies to ensure quality teaching.

The key competencies in teaching are viewed as a convergence of applied knowledge which encompasses content, the way it is taught, the use of technologies, the type of learning, the emotions involved, the organisation of students and other factors. Competencies that fit this context (Zabala & Arnau, 2014) constitute key information that includes the different kinds of knowledge identified by Shulman (1987): knowledge of the content, pedagogical (didactic) knowledge of the content, curricular knowledge, knowledge of the learners, knowledge of the educational objectives, knowledge of other objectives and general pedagogical knowledge. Thus, the key competencies which are limited to knowledge of the content and pedagogical knowledge of the content are expanded to include assessment, the organisation of learning, active student participation, the use of ICT and intercultural communication and the management of feelings and emotions for professional development. However, although these competencies tend to be justified in the university's academic environment, they do not always meet the requirements needed in professional employment. A linear training model is implemented which stands in contrast to the complexity found in education (Lo, 2010). Professional development is systematic and deals with uncertain changes which need adaptive competencies addressed at the university, but without any guarantee that they will be valid for teachers.

In Spain, the competencies that must be developed in the different degree programmes are defined in white papers (National Quality Assessment and Accreditation Agency, 2004a, 2004b). In the case of physical education (PE) teachers, they comprise knowledge related to physical conditioning, body expression, motricity and motor skills, the rules and values of sport, the technical and tactical elements of sports skills, and the transversal knowledge of teaching that is common in pre-service training (Cañadas et al., 2019).

Knowledge of the content and its pedagogical knowledge cannot be understood without referring to the interactive context, in which assessment plays a key role. If we consider that a participative methodology improves students' competencies and is conducive to their professional development, then the assessment component should involve a formative assessment (Magro & Wilson, 2013). The application of formative assessment in teacher training is one possible way for students to acquire the key competencies which lead to better training and professional development, and subsequently to improvements in their teaching, as they are more likely to suit the needs of their job.

Formative assessment is a type of assessment which demonstrates what has been learnt and provides information on what can be learnt (Black & William, 2006). In the case of the assessment and its relationship with the key competencies in pre-service training in PE, there has been a patent trend towards formative assessment in some studies which have demonstrated this shift (Cañadas et al., 2018; Gutiérrez-García et al., 2013). They reveal that key competencies such as mastery of the teaching process, the use of ICT, organisational skills or learning to learn are related to the use of formative assessment (Romero-Martín et al., 2017).

However, there are very few studies comparing the perception after pre-service training of working graduates with those of graduates who are not working regarding the teaching competencies they developed during their degree programme. The studies by Campos et al. (2011) and Gallardo (2006) examine graduates' assessment of the key competencies acquired and their opinion at the end of their degree programmes, asking them about both situations once they are working. However, these studies have only been conducted in small samples of graduates ($n < 105$) and have focused on Teacher Training PE graduates, without including Physical Education and Sport Sciences (PESS) graduates. With regard to assessment, no studies have been found with graduates that assess whether more interaction with the faculty in the assessment, as well as greater participation in establishing the assessment system and tests, or a more active role in the grading process, are perceived as helping to develop professional competencies. Therefore, it seems necessary to establish the influence of the

assessment, and more specifically formative assessment, on the acquisition of the competencies which are developed in pre-service teacher training and whether these competencies are positively assessed by the graduates because of their impact on their professional development.

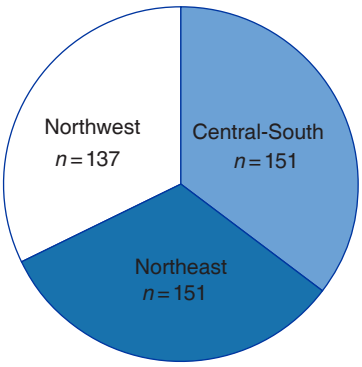
For this reason, the objectives of this study are: a) to assess whether there are differences in the perception of the acquisition of the key competencies between graduates of PE Education and PESS according to whether or not they are working; b) to assess the relationship between the assessment received and the acquisition of teaching competencies according to whether or not they are working; c) to assess the relationship between participation in grading and the acquisition of teaching competencies according to whether or not they are working; and d) to ascertain whether those who are currently working believe that the use of formative assessment during their pre-service training helped them to put teaching competencies into practice.

Methodology

Participants

Non-probabilistic incidental sampling was used to select the participants. A total of 487 graduates participated (40.6% females; 59.4% males) from PE Education degrees at 17 universities all over Spain. To collect the information, three geographic zones were established: a) the Central-South zone (Madrid, Tenerife, Albacete, Córdoba, Granada and Murcia); b) the Northeast zone (Valencia, Barcelona, Huesca, Zaragoza and Lleida); and c) the Northwest zone (Segovia, Valladolid, León, Vitoria and Zamora) (Figure 1). A total of 53.7% of the participants are under the age of 25, 38% are between 26 and 30, 5.7% are between 31 and 35 and 2.7% are 36 or older.

Figure 1
Distribution of graduates by location



Instrument

To collect the information, a questionnaire was used with items referring to the key competencies for PE teachers developed during pre-service training. The participants were also asked about the form of assessment and grading they received during this period and its repercussions on their acquisition of these key competencies. All the questions were answered on a Likert scale from 0 (*not at all*) to 4 (*a lot*). The questionnaire underwent a validation process entailing the following steps (Romero-Martín et al., 2017): a) possible items were selected based on the white papers on the Teaching Primary School and PESS degrees and the creation of a preliminary version of the questionnaire; b) the preliminary version was revised by a group of 10 university instructors who are experts in PE Education with extensive careers in research and publications in Spanish and international journals specialising in this field; c) an initial pre-test was administered to check the degree of relevancy and comprehensibility of the questionnaire; and finally d) reliability was calculated with the Cronbach's , yielding a value of 0.89. Other data were also requested of the participants, such as the degree programmes completed, whether or not they were currently working at a school and how many years of work experience they had.

For this research, specifically the following items were used:

(1) The key competencies: comprised of 22 items with the competencies to be developed during pre-service training of PE teachers.

(2) The usefulness of assessment in acquiring teaching competencies during pre-service training (When formative and continuous assessment was used in your subjects, do you think it helped you to acquire teaching competencies?); on their knowledge of the assessment system and student participation in any aspect of the assessment;

2.a) Interaction between professors and students fosters the assessment process

2.b) Assessment tests were announced sufficiently in advance

2.c) Assessment tests were based on an agreement with the students

2.d) Previous knowledge of the assessment system fostered the learning process

(3) The usefulness of formative and continuous assessment during pre-service training for putting

teaching competencies into practice in active employment (When your professors used formative and continuous assessment in your classes, do you think this helped you to develop teaching competencies in your active practice?).

(4) The forms of grading used by professors during their pre-service training: heterograding, self-grading, dialogued grading and co-grading.

Procedure

The questionnaire used for this study was emailed to the graduates of each one of the degree programmes of the different universities for which data were available. They were asked to participate and were informed of the objective of the study and data confidentiality and anonymity were guaranteed. They were sent the link to the questionnaire. This study follows the ethical guidelines of the American Psychological Association (2010).

Statistical Analysis

The analysis was performed using the SPSS v. 21 statistical package. First of all, a confirmatory factor analysis was performed to find the possible factors that might be grouping the 22 teaching competencies. The principal components method with Varimax rotation was used. To extract the factors, those with eigenvalues over 0.3 were retained (Pallant, 2013). Subsequently, a Student t-test was performed to see the differences between the graduates who are working as teachers and those who are not in the variables studied. To determine the relationship between assessment and grading and teaching competencies, a Pearson's correlation was performed with the sample broken down according to whether or not they are working as PE teachers. A partial correlation was made between these variables, adjusting for "previous work experience". Finally, with the population that said that they are currently working at a school as a PE teacher, a Pearson's correlation was performed between the question "When your professors used formative and continuous assessment in your classes, do you think this helped you to develop teaching competencies in your active practice?" and the specific teaching competencies. The level of significance for all the analyses was set at $p < .05$.

Results

Table 1 presents the results of the factor analysis. The KMO test yields a result of 0.94 (very high), indicating that the correlations between pairs of items can be explained by the remaining items chosen, and Bartlett's sphericity test shows that the items are not independent (4930, 449; *df*. 231 $p < .001$) and therefore that this analysis is appropriate.

The competencies related to the design, development/application, analysis and assessment of teaching intervention and learning processes in PE are clustered around factor 1. We have named this factor "Design, application and assessment of teaching-learning processes in PE". The second factor is related to the contents of motor and sports skills and is defined as "Motor and sport contents". The third factor is associated with physical activity, physical conditioning and health, and it will be called "Physical conditioning and health contents".

Table 2 contains the descriptive statistics of the teaching competencies and the assessment and grading received according to whether or not the respondents are working as teachers. No differences appear in any of the grouping factors of the competencies. In the questions referring to assessment, differences only appear in the "The assessment tests were based on an agreement with the students" item, with a higher rate reported by those who are working. Differences in grading only appear in self- and co-grading, with higher values among those who are working.

Table 3 shows the relationship between the assessment items studied and the teaching competencies factors according to whether or not the respondents are working (model 1, M1) and adjusted according to whether or not they have work experience as teachers (model 2, M2). Model 1 shows that those who are not working find a positive relationship among all the assessment items and the three factors, with the exception of the "Previous knowledge of the assessment system fostered the learning process" item and the factor on physical conditioning contents. However, the relationships are minor (all $r < .400$). Among those who are working, a positive relationship was found between the application of the aspects of formative assessment studied and the factor of "Design, development and assessment of teaching-learning PE" and "Motor and sport contents", with the exception of the "The assessment tests were based on an agreement with the students" item. When the values were adjusted in relation to work experience, the results found in model 1 do not change. Generally speaking, we can say that the design, application and assessment of teaching-learning processes in PE, which would be the subject most closely related to teaching (didactics), has a greater relationship with both models, 1 and 2, while the two columns of contents are, also generally speaking, less related.

Table 1
Results of the factor analysis

Specific competencies	Components			Factors
Designing, applying and analysing teaching interventions in the PE class	.604			Design, application and assessment of teaching-learning processes in PE
Developing and putting PE programmes that facilitate the effective inclusion of students with special educational needs into practice	.667			
Designing, developing and assessing the teaching-learning processes related to physical activity and sport with attention to the individual and contextual characteristics of each person	.685			
Knowing how to use assessment instruments in the PE class	.710			
Promoting complementary activities related to physical activity and sport inside and outside school	.550			
Responding to diversity in PE practices	.693			
Having the capacity to reflect on the teaching-learning process, the different organisational types and the different methodologies within PE classes	.639			
Designing, modifying and/or adapting motor situations geared towards developing and fine-tuning the motor skills to the educational context	.576			
Designing, developing and assessing teaching-learning processes related to motor competency, with attention to the individual and contextual characteristics of each person	.756			
Knowing and promoting the different motor manifestations that are part of your traditional culture		.605		Motor and sport contents
Knowing psychomotor development and its developmental maturation		.777		
Knowing the elements and fundamentals of body expression and non-verbal communication and its formative and cultural value		.672		
Knowing the basic principles of introduction to school sports and designing specific tasks to use them in teaching		.601		
Knowing how to use play as a teaching resource and educational content		.408		
Knowing and understanding body and motor developmental processes		.561		
Knowing the physical capacities and factors that determine their evolution and knowing how to apply the specific technical underpinnings			.537	Physical conditioning and health contents
Knowing the basic biological and physiological principles of the human body in relation to physical activity			.621	
Having strategies to apply the elements of health on hygiene and diet in educational practice			.581	
Having teaching strategies that promote the acquisition of regular physical activity habits			.544	
Knowing how to apply the basic principles (techniques) of physical activities in nature			.439	
Analysing and communicating, critically and with solid foundations, the value of physical education and sport and their possibilities of contributing to people's development and wellbeing			.667	
Identifying and preventing the health risks stemming from the practice of inappropriate physical activities			.768	
Eigenvalues % cumulative explained variance	40.82	47.96	54.26	
KMO: 0.94. Bartlett's sphericity test: 4930, 449; df. 231. $p < .001$.				

Table 2
Competencies developed and forms of assessment and grading received during pre-service training according to whether or not the respondent is working as a teacher

	Is working *M (SD)*	Is not working *M (SD)*	*p*
Competencies	143	344	
Design, application and assessment of teaching-learning processes in PE	–0.12 (1.09)	0.05 (0.96)	.101
Motor and sport contents	0.11 (1.03)	–0.04 (0.99)	.134
Physical conditioning and health contents	0.08 (0.93)	–0.03 (1.03)	.232
Assessment			
The use of formative assessment has helped you to acquire teaching competencies	2.80 (0.95)	2.81 (0.90)	.904
Interaction with professors fosters the assessment process	3.59 (0.65)	3.47 (0.79)	.119
Assessment tests were announced sufficiently in advance	3.17 (0.81)	3.12 (0.82)	.493
The assessment tests were based on an agreement with the students	1.89 (1.31)	1.58 (1.20)	**.013**
Previous knowledge of the assessment system fostered the learning process	3.31 (0.81)	3.22 (0.89)	.330
Grading			
Heterograding	3.22 (0.86)	3.26 (0.80)	.667
Self-grading	1.52 (1.12)	1.22 (1.08)	**.006**
Dialogued grading	1.17 (1.19)	0.99 (1.10)	.116
Co-grading	1.50 (1.05)	1.15 (0.99)	**.001**

Note. The significant differences appear in **bold**.

Table 3
Relationship between the use of formative assessment and the specific competencies developed in pre-service training according to whether or not the respondent is working as a teacher

	Is working			Is not working		
	Design, application and assessment of teaching-learning processes in PE	Motor and sport contents	Physical conditioning and health contents	Design, application and assessment of teaching-learning processes in PE	Motor and sport contents	Physical conditioning and health contents
Model 1						
Assessment						
The use of formative assessment has helped you to acquire teaching competencies	0.341**	0.195*	0.062	0.353**	0.220**	0.176*
Interaction with professors fosters the assessment process	0.197*	0.186*	0.091	0.252**	0.143*	0.132*
Assessment tests were announced sufficiently in advance	0.185*	0.184*	–0.001	0.130*	0.194**	0.131*
The assessment tests were based on an agreement with the students	0.434**	0.101	0.072	0.282**	0.136*	0.221**
Previous knowledge of the assessment system fostered the learning process	0.227*	0.278*	0.039	0.119*	0.159*	0.102
Model 2 (adjusted by teaching experience)						
Assessment						
The use of formative assessment has helped you to acquire teaching competencies	0.341**	0.196*	0.062	0.374**	0.231**	0.187*
Interaction with professors fosters the assessment process	0.200*	0.178*	0.074	0.256**	0.145*	0.134*
Assessment tests were announced sufficiently in advance	0.187*	0.176*	-0.017	0.130*	0.194**	0.132*
The assessment tests were based on an agreement with the students	0.438**	0.093	0.060	0.278**	0.134*	0.219**
Previous knowledge of the assessment system fostered the learning process	0.227*	0.278*	0.038	0.125*	0.162*	0.105

**$p < .001$; *$p < .05$.

Table 4
Relationship between the use of different forms of grading and the specific competencies developed in pre-service training according to whether or not the respondents are working

	Is working			Is not working		
	Design, application and assessment of teaching-learning processes in PE	Motor and sport contents	Physical conditioning and health contents	Design, application and assessment of teaching-learning processes in PE	Motor and sport contents	Physical conditioning and health contents
Model 1						
Grading						
Heterograding	0.059	0.167*	0.035	0.037	0.015	0.037
Self-grading	0.504**	0.146	0.110	0.293**	0.187**	0.031
Dialogued grading	0.431**	0.128	0.055	0.256**	0.140*	0.055
Co-grading	0.442**	0.227*	0.111	0.240**	0.147*	0.084
Model 2 (adjusted by teaching experience)						
Grading						
Heterograding	0.059	0.168*	0.036	0.035	0.014	0.035
Self-grading	0.507**	0.140	0.100	0.298**	0.189*	0.033
Dialogued grading	0.432**	0.124	0.048	0.260**	0.141*	0.056
Co-grading	0.462**	0.218*	0.088	0.246**	0.149*	0.087

**$p < .001$; *$p < .05$.

Table 4 shows the relationship between the different forms of grading used and the factors into which the teaching competencies are grouped. In M1, heterograding is only directly related to "Motor and sport contents" among those who are working, albeit only slightly ($r = .167$). Among both those who are and are not working, participative forms of grading are positively related to "Design, application and assessment of teaching-learning processes in PE", with higher values among those who are working. In terms of "Motor and sport contents", those who are working as teachers only relate it to co-grading, while those who are not working relate it to all three forms of participative assessment, albeit only slightly ($r < .200$). These results remain the same in M2. Once again, generally speaking, there is a greater relationship between the Design column and models 1 and 2 than the contents columns for both populations of graduates.

Finally, a correlation was performed between the "When your professors used formative and continuous assessment in your classes, do you think this helped you develop teaching competencies in your active practice?" item and the teaching competencies only among those graduates who are working. The goal is to assess whether the pre-service training has been useful for professional practice, since only in practice can one truly assess whether the training received is practically helpful in meeting the demands of the working world. A positive correlation was found between the question and the "Design, application and assessment of teaching-learning processes in PE" and "Motor and sport contents" factors ($r = .355$ and $r = .270$; $p < .002$, respectively).

Discussion

The results of this study show that: a) there are no differences in the graduates' perception of the acquisition of teaching competencies according to whether or not they are working; b) the assessment items studied are positively related to the "Design, application and assessment of teaching-learning processes in PE" and "Motor and sport contents" competencies, and for graduates who are not working with "Physical conditioning and health contents" as well; c) among those who are not working, participative forms of grading are related to "Design, application and assessment of teaching-learning processes in PE" and "Motor and sport contents" and, among those who are working, it is only related to "Design, application and assessment of teaching-learning processes in PE"; d) graduates who are working believe that the use of formative assessment during their pre-service training has helped them put the specific teaching competencies into practice in their job.

Given the lack of studies mentioned in the theoretical framework, this study is limited in terms of comparing it to other similar studies. However, the study by Campos et al. (2011), for example, focused specifically on comparing the differences detected by 104 PE

Teaching graduates at the University of Seville in the competencies acquired after completing their university degrees and the use made of them in the job market. Of the 17 specific competencies they studied, significant differences were found in 16, with higher values after graduation. The only competency which showed similar values both after completing pre-service training and in application as a teacher was "detecting anatomical-functional, cognitive and social interaction difficulties". These results do not match those found in this study, in which no significant differences are observed in any of the three factors of the questionnaire among graduates who are not working and those who are. These differences may be due to the authors' small sample size or to the fact that they only used graduates from one degree programme at one university. Gallardo (2006) also focuses on Teacher Training PE graduates, in this case at the University of Granada ($n = 72$). However, in this case the competencies studied are general ones.

Other studies have focused on assessing the competencies of graduates when they are already working as PE professionals in primary and secondary schools (Kovac et al., 2008), and some assess the perceptions of students who are still studying for their PESS degrees (López-Varas, 2015) or compare the perceptions of competencies of students, university faculty and graduates of the Teacher Training and PE degrees (Pazo & Tejada, 2012; Romero, 2009). However, this type of study does not bear in mind the discrepancies which may exist in the assessment among graduates who have completed their degrees and those who have to put the entire set of knowledge and skills used as a teacher into practice, which is when they can really assess whether or not their pre-service training has been useful in their professional development and its impact on their search for employment. In this study, the fact that no differences were found between both groups may indicate that the graduates working as teachers find that their pre-service training helped them to perform their job, just as those who are not working perceive it.

Despite the importance attached to the creation of the EHEA and the changes that its implementation have brought about in higher education in different European countries, it should be noted that there are still only a handful of research studies that seek to ascertain the repercussions of the changes in the training of graduates who have studied in the new degree programmes. It is essential to assess university graduates' opinions of the training they receive with the goal of adjusting the curriculum based on the challenge of employability, both to adapt to the job market and in terms of their ability to meet its requirements and demands. Most importantly, we should acknowledge that there are few studies addressing graduates' perception of their training in competencies and the usefulness of these competencies in their future professional employment.

In pre-service training, university graduates should also learn the key professional competencies that they will need to find employment. Training should be adapted to the requirements of specific areas, in our case PE, and be directly related to key competencies in order to cater to demands from education. Assessment plays a crucial role in this regard, and more specifically the application of formative assessment in the different subjects in the degree programme, leading to more meaningful and profound learning of the subject matter, helping students to develop key professional competencies to adapt the assessment of their students to prevailing needs. In this pre-service training, students' participation in their own assessment and in that of their peers is extremely important, but so too is participation in grading, since such an involvement in this process would herald a transfer of responsibility. However, in this study, as in others conducted previously (Gutiérrez-García et al., 2013; Gutiérrez-García et al., 2011; Hamodi et al., 2015), both graduates and faculty report that forms of grading in which the teaching staff take the decisions continue to prevail at the expense of other alternative approaches related to participative grading.

Conclusion

This study has demonstrated that there is no difference in PE teachers' perception of the competencies acquired according to whether or not they are teaching, which indicates that both at the end of their pre-service training and when embarking upon their professional career they feel that their training is sufficient to rise to the demands of the educational setting; however, this result does not mean that in the future they should not continue to seek training to deal with the challenges that may arise. On the other hand, aspects such as being familiar with the assessment system, how they are going to be assessed before beginning the learning units or being able to interact and dialogue with the faculty on aspects of the assessment, are all positively related to the development of competencies. These aspects are also related to the use of participative forms of assessment. Furthermore, the graduates report that the use of formative assessment during their pre-service training has helped them to develop these competencies and to put them into practice in their professional work. Therefore, according to this

study, it may be concluded that: a) pre-service training of PE teachers helps satisfactorily develop key teaching competencies, and b) the use of formative assessment at this stage seems appropriate for helping them acquire the key teaching competencies and later applying them in the job world.

However, further studies which explore this topic more deeply are needed, assessing the usefulness of the specific competencies developed when they are actually applied in teaching practice, and assessing the repercussions of the application of active methodologies and formative assessment systems during pre-service training on the teacher's professional competencies.

References

American Psychological Association. (2010). *Publication manual of the American Psychological Association*. American Psychological Association.

National Quality Assessment and Accreditation Agency (2004a). *Libro Blanco. Título de grado en Magisterio* (Vol. 1). National Quality Assessment and Accreditation Agency.

National Quality Assessment and Accreditation Agency (2004b). *Libro Blanco. Título de grado en Ciencias de la Actividad Física y del Deporte*. National Quality Assessment and Accreditation Agency.

Black, P., & Wiliam, D. (2006). Assessment for learning in the classroom. In J. Gardner (Ed.), *Assessment and learning* (pp. 9-25). Sage.

Campos, M. C., Ries, F., & Del Castillo, O. (2011). Análisis de las competencias adquiridas y utilizadas por los egresados maestros en educación física. *Revista Internacional de Ciencias del Deporte, 24*(7), 216-229. https://doi.org/10.5232/ricyde2011.02405

Cañadas, L., Castejón, F. J., & Santos-Pastor, M. L. (2018). Relación entre la participación del alumnado en la evaluación y la calificación en la formación inicial del profesorado de educación física. *Cultura, Ciencia y Deporte, 13*(39), 291-300.

Cañadas, L., Santos-Pastor, M. L., & Castejón, F. J. (2019). Competencias docentes en la formación inicial del profesorado de educación física. *Retos. Nuevas Tendencias en Educación Física, Deportes y Recreación, 35*, 284-288.

Cardona-Rodríguez, A., Unceta-Satrustegui, K., & Barandiaran-Galdós, M. (2016). Comprehensive pertinence in the quality assessment of higher education / La pertinencia integral en la evaluación de la calidad de la educación superior. *Cultura y Educación, 28*(2), 344-358. https://doi.org/10.1080/11356405.2016.1158446

Elias, P., & Purcell, K. (2004). Is mass higher education working? Evidence from the labour market experiences of recent graduates. *National Institute Economic Review*, *190*, 60-74. https://doi.org/10.1177/002795010419000107

Gallardo, M. A. (2006). La evaluación de competencias profesionales para la inserción de los maestros de educación física. *Revista Electrónica de Investigación Psicoeducativa, 4*(3), 469-492.

Gil, J., García, E., & Santos, C. (2009). Miradas retrospectivas de los egresados sobre la educación superior. *Revista de Investigación Educativa, 27*(2), 371-393.

Gutiérrez-García, C., Pérez-Pueyo, A., & Pérez-Gutiérrez, M. (2013). Percepciones de profesores, alumnos y egresados sobre los sistemas de evaluación en estudios universitarios de formación del profesorado de educación física. *Ágora para la Educación Física y el Deporte, 15*(2), 130-151.

Gutiérrez-García, C., Pérez-Pueyo, A., Pérez-Gutiérrez, M., & Palacios-Picos, A. (2011). Percepciones de profesores y alumnos sobre la enseñanza, evaluación y desarrollo de competencias en estudios universitarios de formación de profesorado. *Cultura y Educación, 23*(4), 499-514. https://doi.org/10.1174/113564011798392451

Hamodi, C., López-Pastor, A. T., & López-Pastor, V. M. (2015). Percepciones de alumnos, egresados y profesores sobre los sistemas de evaluación del aprendizaje. *Revista d'innvació educativa, 15,* 1-11. https://doi.org/10.7203/attic.14.4175

Kovac, M., Sloan, S., & Starc, G. (2008). Competencies in physical education teaching, Slovenian teachers' views and future perspectives. *European Physical Education Review,* 14(3), 299-323. https://doi.org/10.1177/1356336X08095668

Lo, C. (2010). Student learning and student satisfaction in an interactive classroom. *Journal of General Education, 59*(4), 238-263. https://doi.org/10.1353/jge.2010.0025

López-Varas, F. (2015). *Relaciones entre competencias, inteligencia y rendimiento académico en alumnos de grado en Ciencias de la Actividad Física y el Deporte* (Doctoral dissertation, Universidad Europea de Madrid).

Magro, E., & Wilson, J. R. (2013). Complex innovation policy systems: Towards an evaluation mix. *Research Policy, 42*(9), 1647-1656. https://doi.org/10.1016/j.respol.2013.06.005

Pallant, J. (2013). *SPSS survival guide*. Open University Press.

Pazo, C. I., & Tejada, J. (2012). Las competencias profesionales en educación física. *Retos: Nuevas Tendencias en Educación Física, Deporte y Recreación, 22*, 5-8.

Romero, C. (2009). Definición de módulos y competencias del maestro con mención en educación física. *Revista Internacional de Medicina y Ciencias del Deporte, 9*(34), 179-200.

Romero-Martín, M. R., Castejón-Oliva, F. J., López-Pastor, V. M., & Fraile-Aranda, A. (2017). Evaluación formativa, competencias comunicativas y TIC en la formación del profesorado. *Comunicar, 52*. https://doi.org/10.3916/C52-2017-07

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-22. https://doi.org/10.17763/haer.57.1.j463w79r56455411

Towers, J. (2013). Consistencies between new teachers' beliefs and practices and those grounding their initial teacher education program. *Alberta Journal of Educational Research, 59*(1), 108-125.

Zabala, A., & Arnau, L. (2014). *Métodos para la enseñanza por competencias*. Graó.

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