

Formative assessment and pre-service teacher education: previous, current and prospective experiences

Evaluación formativa y formación inicial del profesorado: experiencias previas, actuales y prospectiva

Rodrigo Atienza¹ 

Alexandra Valencia-Peris² 

Víctor M. López-Pastor³ 

¹ Department of Physical Education and Sports, Faculty of Physical Activity and Sports Sciences, University of Valencia, Valencia, Spain

² Department of Didactics of Physical Education, Artistic and Music, Faculty of Teaching, University of Valencia, Valencia, Spain

³ Department of Didactics of Musical, Plastic and Corporal Expression, Faculty of Education of Segovia, University of Valladolid, Segovia, Spain

Correspondence:

Alexandra Valencia Peris,
alexandra.valencia@uv.es

Short title:

Formative assessment and pre-service teacher education

How to cite this article:

Atienza, R., Valencia-Peris, A., & López-Pastor, V. M. (2023). Formative assessment and pre-service teacher education: previous, current and prospective experiences. *Cultura, Ciencia y Deporte*, 18(55), 133-156. <https://doi.org/10.12800/ccd.v18i55.1914>

Received: 13 April 2022 / Accepted: 28 October 2022

Abstract

This study further explores the analyses of Physical Education Teacher Education students' experiences about Formative and Shared Assessment (F&SA) in Physical Education (PE) during their primary and secondary education, in their perception about F&SA experienced in the subject of 'Didactics of PE in Primary Education'; and in their expectations about its application in their future teaching practice. To this end, 42 reflection diaries were collected that participants wrote throughout the semester. A thematic analysis was carried out using the NVivo v.10 software. The main results reveal that the majority did not experience F&SA in the PE subject during their compulsory education. However, after experiencing the method in the subject, students perceive F&SA very positively, especially valuing their potential to promote more gradual, continuous, meaningful, reflective and adapted learning. They also pointed out that, for both teachers and students, it implies an increase in the workload. Finally, a large part of the participants expressed their intention to apply F&SA in their future professional practice.

Key words: educational assessment, higher education, physical education, initial teacher training.

Resumen

El estudio profundiza en el análisis de las experiencias de evaluación formativa y compartida (EFyC) en Educación física (EF) que un grupo de estudiantes de Formación Inicial de Profesorado en EF tuvo durante su educación obligatoria, de su percepción del modelo de EFyC experimentado en la asignatura de 'Didáctica de la EF en la Educación Primaria' y de las expectativas sobre su aplicación en su futura práctica docente. Para ello se recogieron 42 diarios de reflexión que las y los participantes fueron redactando a lo largo del semestre. Se realizó un análisis temático empleando para ello el programa NVivo v.10. Los principales resultados revelan que mayoritariamente no han experimentado modelos de EFyC en la asignatura de EF durante su educación obligatoria. Sin embargo, tras experimentarlo en la asignatura, el alumnado percibe este modelo de evaluación muy positivamente, valorando especialmente su capacidad para fomentar un aprendizaje más paulatino, continuo, significativo, reflexivo y adaptado. Asimismo, señalan que, tanto para estudiantes como para docentes, implica un incremento en la carga de trabajo. Finalmente, una gran parte del alumnado participante manifiesta su intención de aplicar EFyC en su futura práctica profesional.

Palabras clave: evaluación educativa, educación superior, educación física, formación inicial del profesorado.



This work is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Introduction

Since the implantation of the European Higher Education Area (EHEA), European universities are facing the challenge of carrying out profound institutional transformations. Despite the fact that in Spanish universities there is beginning to be evidence of progress both in the official discourse and in teaching practice, (Rué, 2009; Villa et al., 2015), a long road still lies ahead (Alonso-Sáez & Arandia-Loroño, 2017). This implies, among other aspects, the transition from traditional teaching in which the students are a passive element that receives knowledge that they must store, to a model focused on active competency-based learning for the students (Bretones, 2008; Dochy et al., 2002; Hamodi, 2016a; Pérez-Pueyo et al., 2008; Souto et al., 2020). For this paradigmatic change to occur in university teaching, it should be linked to the transformation of the conception of assessment, as this powerfully conditions the way in which students learn (Álvarez-Méndez, 2001; Brown & Glasner, 2003; Escudero, 2010; Margalef, 2014).

Within this framework, Formative and Shared Assessment (F&SA) stands out as the most important model for encouraging learning in higher education (Hamodi & Barba-Martín, 2021; Hortigüela-Alcalá et al., 2016; López-Pastor, 2009; Martínez et al., 2017). We consider F&SA as any process of confirmation, evaluation and decision making aimed at optimising the educational activity that takes place, for which the flow of dialogue (teacher-student and student-student) and feedback in its multiple forms, gain special relevance (Hamodi et al., 2014).

The specialised literature has presented ample evidence on the effects generated in university students' learning, by both assessment models of a formative nature included under the umbrella of alternative assessment (Black & William, 1998; Buscà et al., 2011; Knight, 2005; López-Pastor, 2009), and participatory strategies in assessment (Dochy et al., 1999; Hargreaves, 2007; López-Pastor et al., 2016; Lorente-Catalán et al., 2018). Specifically, during the last decade different investigations have been developed in the Spanish context that try to shed light on the incidence of F&SA in the learning of students of Physical Education Teacher Education (PETE). Among the main findings are: a) it helps students to learn more and better (Atienza et al., 2016; López-Pastor, 2009); b) it contributes to developing professional competencies (Cañadas et al., 2018; Fraile-Aranda et al., 2018); c) it encourages a high academic performance (Romero-Martín et al., 2014); d) it helps the students to take on responsibility in their learning process (Hortigüela-Alcalá & Pérez-Pueyo, 2016); and e) it facilitates the transfer of F&SA experiences between the university and the school (Barrientos et al., 2019; Hamodi et al., 2017; Molina & López-Pastor, 2019).

Moreover, in the PETE we find students who have experienced a series of assessment practices during their pre-university stages, which usually become interpretative filters and consolidated knowledge (Doolittle et al., 1993)

which condition their development as university students, as well as their future teaching activities (Gómez & Guerra, 2012; López-Pastor et al., 2016). That is why authors like Tillema (2000) comment on the importance of knowing about these experiences and bearing them in mind.

The design and development of F&SA models is focused on the students, placing them in the centre of the educational process, as proposed by the EHEA; thus, it is essential to know how they feel, experience and make sense of these proposals. Some recent studies show that the perceptions of teachers and students may not coincide on the topic of assessment (Gutiérrez-García et al., 2013; Romero-Martín et al., 2015). Thus, we consider it necessary to collect and analyse the students' perspectives on F&SA during their PETE and know at first hand their opinions, perceptions and experiences.

The purpose of this study was to go deeper into the experiences, perceptions and expectations of the students of PETE regarding the F&SA systems they had participated in. We will focus specifically on the analysis of the following three key aspects:

- To discover their prior experiences of F&SA in PE during their compulsory education.
- To discover the advantages and limitations that they attribute to F&SA both for students and teachers.
- To discover their expectations of using F&SA systems in their future professional life as a teacher after having experienced them in PETE.

Method

Methodological approach

This investigation follows the epistemological bases of social phenomenology, in which we try to understand a phenomenon through the subjective experiences of the people that give it meaning.

Specifically, we identified a series of topics and structures that allow us to explore F&SA from the experiences, meanings and realities of the students that participate in it. A thematic analysis model was used, consisting in the identification and organisation of repeated patterns of meaning, from the analysis and comprehensive examination of a set of narratives, which permits understanding and interpreting the phenomenon under study (Braun & Clarke, 2006).

Participants

The study was carried out in a core subject of the second year of the Degree of Teaching in Primary Education at the University of Valencia "Didactics of Physical Education in Primary Education", which represents six ECTS credits (2.4 are face to face). The subject was developed during 14 weeks, with two weekly theoretical-practical sessions of two hours each.

Forty-two students participated in the study (29 women and 13 men) from one of the 11 subject groups. Their ages varied between 19 and 26, the mean age being 19.9 years ($sd = 1.7$).

The group's teacher was also the main researcher for the study, so that special care was taken to underline the voluntary nature of their participating, making it clear that participation in the study would not affect the mark achieved in the subject. The study was approved by the Ethics Research Committee of the Autonomous Region of Aragón (C.P.-C.I.PI21/377). The ethical use of the data

obtained was also guaranteed, as well as the anonymity of the participants.

Fieldwork and data collection instruments

A structured virtual diary of reflections about F&SA was used to access the experiences, meanings and realities of the participating students, employing the on-line forms developed by Google®. The questions tackled were distributed by chapters throughout the term that the subject lasted (Table 1). Each participant used a pseudonym to guarantee the confidentiality and anonymity of their interventions.

Table 1. Content of the structured diary

Chapter	Week	Contents
1	2	Concept of F&SA. Experiences of F&SA during compulsory education.
2	5	Expectations of the process of F&SA in the subject 'Didactics in Physical Education in Primary Education'.
3	8	Advantages and limitations of F&SA.
4	11	Predisposition towards implementing F&SA models during their periods of university practicums and during their professional activity.
5	14	Fulfilment of expectations on the process of F&SA followed during the subject and final assessment.

Data analysis and categories

The information collected in the diaries was processed following the phases of thematic analysis defined by Braun & Clarke (2006):

- Familiarisation with the data. Consisting in the repeated and careful reading of the students' diaries, and the noting down of general ideas.
- Generation of initial codes. The initial coding followed a deductive logic as it was determined by the research questions.
- Search for topics. The initial codes were organised in topics or categories that would represent their own levels of meaning.

- Review of topics. A review was made of the organisation of the information to evaluate the possibility of recoding the information or establishing new categories.
- Definition and denomination of topics. The topics definitively identified and included in the article were hierarchised in categories and subcategories (Table 2).
- Production of the final report.

The process had a cyclical nature, so that the previously mentioned phases did not occur in linear succession but were superimposed. NVivo® v10 software was used for the qualitative analysis.

Table 2. Structure of the analysis categories

Category	Subcategory
1-Previous experiences of F&SA	
2-Evaluation of the process	2.1-Advantages attributed to F&SA 2.2-Limitations attributed to F&SA
3-Expectations of the future teacher	3.1-During their professional teaching activity 3.2-During the university practicums

Description of the F&SA proposal

The main purpose of the subject is to understand the didactic and pedagogical bases of Physical Education and to develop the main necessary professional competencies for their teaching activities in primary education. To this end, three learning and assessment activities were considered:

Design of the teaching unit

This is group work throughout the whole term. Time limits were established for handing in each part of the work. For this, each group generated a blog where they uploaded the contents of their teaching unit (analysis of the school context, educational objectives, curricular competencies, didactic contents, etc.) Each content received feedback through comments on the different entries in the blogs, both from the teacher and from another groups of students (as peer-assessment). To unify the assessment process, from the first week of the course a specially designed evaluation scale was made available. On the basis of the feedback received, each group was able to redevelop the different sections of their teaching unit. The fact of using a blog to assess the work responded to a three-fold need on the part of the teacher: a) to make the participation of the students in the assessment possible; b) to make this process more visible and transparent; and c) to streamline the assessment process. At the end of term, each group presented the complete project including two annexes: a) a self-assessment report on the work using the aforementioned evaluation scale; and b) a consensual report of intragroup assessment which reflected the dedication and contribution to the work of each of the participant. In this way, as proposed by Hamodi (2016b), they could readjust the final mark for the work.

Design and development of a practical session

This session had to be contextualised within the teaching unit described above. When carrying it out, the class group was divided into three roles: a) the teacher (composed of the group that was developing the session); b) the students (who pretended they were the primary education students the session was aimed at); and c) the observation group (students who analysed how the session was developed). Once the session had ended there was a pooling of opinions (as a shared assessment) in which all the parties commented on the most outstanding aspects of the teaching-learning process, focusing on good practice, aspects to be improved and proposals for improvement. This entire process was carried out twice during the course, the rehearsals towards the middle of the term, and the final presentations at the end. Through the feedback received in the rehearsals each group had the opportunity to improve the final result. An observation sheet was used to facilitate the assessment task.

Individual reflections

Every student had to present a portfolio in which they reflected on their learning. To guide its content, at the beginning of the course the main professional competencies needed for teaching in primary school were reviewed and agreed upon. In the portfolio they had to substantiate the knowledge acquired during the course, providing some evidence taken from the different learning activities. They also had to indicate what aspects of competencies had to be improved and proposals for achieving this. Assessment was the responsibility of the teacher of the subject using a points scale.

Table 3 presents a summary of the activities, techniques and assessment instruments.

Table 3. Means, techniques and assessment instruments

Learning activity	Means	Technique	Instrument
1-Group design of a teaching unit	Written work	Peer assessment: documentary analysis	Evaluation scale
		Group self-assessment: documentary analysis	Evaluation scale
		Shared assessment: documentary analysis	Intergroup assessment report
2-Design and development of a practical session	Written work	Group self-assessment: documentary analysis	Evaluation scale
		Shared assessment: documentary analysis	Evaluation scale
	Practical demonstration	Peer assessment: observation	Observation sheet
		Hetero-assessment: direct observation	Observation sheet
3-Individual reflections on the degree of acquisition of professional competencies	Portfolio	Hetero-assessment: documentary analysis	Evaluation scale

Results and discussion

The main results of the study are presented below, organised using the categories established during the analysis process.

Previous experience of F&SA

One of our focuses of interest was to know the experiences of F&SA in PE during compulsory education. Analysing the students' diaries, it was observed that 20 students considered that they had not had any type of previous experience, 17 identified some sporadic and insubstantial experience and only five declared that they had had some meaningful experience. One of the most noteworthy consequences of this lack of experience is the feeling of scepticism or uncertainty that a first contact with F&SA models can generate. Some of the students included in their diaries the misgivings and confusion that they experienced at the beginning of the course:

...at the beginning of the course I really did not know if this type of assessment would work, as I had never experienced it (Woman student_29).

At the beginning of term. I chose this option a little "blindly" because, since I have been a student, I have never had the option to choose between continuous and formative assessment (Woman student_21).

Moreover, 10 students insinuated, if not a critical position, at least a final lament about the traditional assessment models experienced in their school years:

It is a pity to say so, but unfortunately, I have had no type of formative assessment during compulsory education. [...] the majority of my teachers relied on an exam to assess our knowledge of the subject at the end of a topic or term (Man student_40).

Unfortunately, throughout my compulsory education I did not experience this type of assessment. [...] until I arrived at University I had not experienced feedback regarding the information or knowledge taught on any subject (Man student_26).

It is not surprising that the students experience uncertainty or show some misgivings when faced with an activity which is new for them. As Martínez et al. (2012) point out, students need a period of adaptation to feel comfortable with a new learning approach. Thus, in the study by Hortigüela-Alcalá, Pérez-Pueyo & Abella (2015) a greater degree of initial uncertainty is seen among the students who participate in the F&SA models compared to those who participate in traditional assessment processes. Similarly, Hortigüela-Alcalá, Pérez-Pueyo & López-Pastor (2015), after analysing 50 university case studies, conclude that having previous experience of at least two years of F&SA provides the students with greater assurance, which reinforces their involvement in the process. All of which demonstrates the need to devote some initial sessions during the course to clarifying what

is going to be assessed and graded and how, (Gutiérrez-García et al., 2013; López-Pastor, 2009) in order to comply with the principle of transparency in this process (Álvarez-Méndez, 2001). Similarly, coinciding with our findings, Hamodi & López-Pastor (2012) argue that university students question the habitual practice of traditional assessment once they have experienced F&SA models. All this evidence indicates that, although the university students with little experience of F&SA methods may show a certain reticence at the beginning, once they have experienced this model and understand its ins and outs, they value it very positively.

Evaluation of the process

When evaluating the F&SA process experienced throughout the course, the students mentioned two factors: advantages and limitations of the assessment both for the students and the teachers.

Advantages attributed to F&SA

Several beneficial aspects for the students were highlighted, some of which were closely related to the characteristics of the assessment process followed in the subject. The first (mentioned by 28 students) is that F&SA as it is normally developed continuously, allows gradual and permanent learning, which avoids the excessive effort of the final assessment. A logical consequence of rationally distributing their dedication to learning the subject over the entire term (in terms of time and effort) and not concentrating it in a single one-off occasion, is the decrease in pressure perceived by the students:

...one of the aspects which made me feel better is that the different activities that are carried out throughout the course are taken into account, so that we are not "risking" everything in a final exam like in other subjects [...] it is better for us because we progress [in our learning] little by little and we don't have so much pressure or feel so nervous (Woman student_2).

[With F&SA] you don't risk the whole subject in one single exam, but you have to work little by little and constantly. If you have a bad day, you have the opportunity to make a greater effort on other days. It has to be said that as one doesn't feel so pressured, things go more smoothly and naturally, more spontaneously and that is something that doesn't happen with an exam [...] not being pressured or stressed [...] means that we relax and learn more and better (Woman student_21).

Another aspect highlighted by more than half the students is that F&SA permits a really useful flow of feedback, focused on showing their successes, identifying their errors, guiding them to be able to correct them and thus improve the learning process. This, which could be considered an advantage in itself, is further enhanced by making the student responsible for his or her own learning. This was reflected by several people in their diaries:

We cannot forget either that formative assessment has an enormous advantage for improving learning, as at all times there is feedback. And this is very positive to see the mistakes made and be able to remedy them [...] it makes the students more responsible and conscious of their learning, as it is necessary to do more constant work and this increases commitment (Woman student _24).

Formative assessment, as it is continuous, allows us to identify the problems that we may have at the beginning of the academic year and correct them during the entire learning process [...] It makes us be more responsible, as starting from the indications of the teacher and our classmates, we have to reach the desired objective, [...] this type of evaluation motivates us and, thus, increases learning (Woman student_41).

...as our entries [in the blog] are continually corrected, we realise our mistakes and successes (Woman student _30).

Another advantage that the students highlighted (mentioned by 28 students) was that F&SA promotes reflective and meaningful learning:

This assessment system has many advantages, but the main one is that there really is a meaningful learning process. That is, we know what we are doing while we are learning. So, the teaching unit makes sense because we will have to design them in the near future. The portfolio has shown me while I was doing it that it is a great tool for reflecting on what has been learned, to what degree you have learned it and it also makes you reflect on what you are lacking (Woman student _27).

[F&SA] allows us to obtain a lot of feedback in the comments [in the blog] which serve to identify problems in the first version. It allows the students to reflect [...] and they improve (Woman student_12).

The students underlined two fundamental aspects that made it possible for the learning to be reflective and meaningful: on the one hand, 27 students pointed out that designing learning activities similar to real teaching practice meant that the students implemented determined professional competencies; moreover, 22 students coincided in indicating as a facilitator of reflective and meaningful learning the exchange of student-student and student-teacher feedback and points of view as the different activities were developed:

[In] an exam you can demonstrate a lot of knowledge about a subject, but in the end, most of this memorised information will be forgotten. In contrast, the designing of a session and afterwards its full development, allows you to observe the task from another perspective. I think that it has been very interesting that we have all had time to present ourselves to the class as teachers [...] as, in the near future, we all hope to work in this profession [...] I think that the two occasions on which I faced the class, both in the rehearsal and the final session, served to make me realise the real

situation that a teacher lives in their day-to-day job. An experience that I consider to be fundamental to have in these years of education for my integral development as a teacher (Man student _4).

...one of the advantages that this assessment system has is that it provokes a lot of reflection. Every time we finish a practical class we reflect on the activities. I think that it is very interesting and that it helps us students to understand the reason why we do these activities [...] the teacher guides us so we acquire the learning, for example, asking us questions to see what we know and guiding us towards the answer, and we have tutorials to clarify the doubts we have about the subject and the work we have to do (Woman student_2).

All these advantages combine in one fundamental aspect for the whole educational process: at the end of the term there was evidence of a qualitative improvement in learning. The majority of the students (32 participants) reflected in their diaries that once the subject had finished, they felt great satisfaction when they confirmed that F&SA facilitated deeper learning in comparison with their experience with traditional models of assessment:

...I have learned more with this system of assessment than with others, as we have done more activities [learning-assessment], [...] we have reflected on the learning. In contrast in other subjects [...] we learned it by heart, we wrote it in the exam and a little while afterwards we forgot it (Woman student_2).

...with this assessment system I have learned more and better than with other systems. If you focus the way to assess your students with a single exam, they will only learn and memorise what will be in the exam; but, in contrast, you assess encouraging divergent thinking and discovery in a continuous manner with the support of the teacher throughout the subject, this educates the student more and makes us learn more, as in this case (Man student_13).

Furthermore, practically all the students (39 cases) identified a series of advantages of F&SA for the teachers. The main one (indicated by 22 students) lay in their potential to improve the teaching process starting from closer monitoring of the students and their learning. As we can interpret from their diaries, this is related to the improvement in three aspects of the teaching: a) better guidance of the students in their learning; b) fairer assessment and grading; and, c) better adaptation of the teaching to the students' needs:

Through this assessment you can see how the child progressively acquires knowledge and in continually learning. We can also see the progress [of the students] in more detail and we can know what has to be improved and what doesn't. The teacher keeps a closer eye on them, making them aware of their mistakes and that they can continually improve (Woman student_30).

I think that it is much fairer to assess the student from day to day, getting to know them. As a [future] teacher, I think that [F&SA] makes it possible to give a much fairer assessment that reflects the performance of each student much more, certainly more than just one single exam (Man student_5).

The first advantage that we find is obviously the adaptation of the teaching. We are continually seeing how the students work, how they improve with the passing of time, where they have difficulties, etc. Each student is different from the rest and we [the teachers] can better adapt ourselves to them, as we know first-hand how this or that child works, what problems they have and look for solutions (Man student_18).

Similar results can be found in other studies that also indicate that university students value F&SA positively. For example, Vallés et al. (2011) point out that among the advantages that university students attribute to F&SA the fact that it permits continual feedback stands out, as well as a rational and proportional distribution of effort throughout the whole course (Hortigüela-Alcalá, Pérez-Pueyo & López-Pastor, 2015). Another of the advantages indicated by the university students is that F&SA favours reflective and meaningful learning (Atienza, et al., 2016; Fraile-Aranda & Cornejo, 2012). Some studies underline that for this to be so the feedback should be immediate, understandable and oriented towards detecting errors and improving (Asún et al., 2020; Sadler, 1989), as happened in our case.

Our students coincide with Vallejo & Molina (2014) when emphasising the contexts in which authentic assessment is applied as apt for encouraging contextualised and meaningful learning, which according to Sonlleva et al. (2021) contributes to the acquisition of strategies and attitudes typical of reflective teachers. There are other studies that highlight the fundamental role played by the exchange of feedback so that the learning is eminently reflective, and how this support should be evident not just in the teacher (Lin & Lai, 2013) but also in the classmates (Emery et al., 2003; Schaeffer et al., 2003); this last aspect is essential for confirming that the students have developed the capacity to self-regulate which is so necessary for initial and permanent training (Boud, 2000; Lorente-Catalán & Kirk, 2016).

With regard to the advantages found for the teachers, our results coincide with other studies that highlight the potential of F&SA to know the students better, which makes it possible to plan the teaching process in a more personalised way, better adapting it to the needs and characteristics of the class and guiding them more in their learning (Álvarez-Méndez, 2001; Martínez & Ureña, 2008; Vallés et al., 2011; Zaragoza et al., 2008). As occurred in our study, the work by Hortigüela-Alcalá, Pérez-Pueyo & Abella (2015) and de Souto et al. (2020) indicate that university students perceive that F&SA gives the teachers the possibility of making fairer judgements during the assessment process.

Limitations attributed F&SA

The students attributed few limitations to F&SA. The most generalised one referred to the enormous effort that it meant for the students (reflected in 30 diaries) and teachers (reflected in 19 diaries):

When talking now about any disadvantage that I can see, the truth is that it means a lot more work, both for the teacher who has to be alert to give the feedback, and for the students who have to work continuously on this subject to take advantage of the feedback from the teacher and be able to improve (Woman student_14).

[as a student] the only disadvantage that I experience with this assessment method is that the work load is excessive [...] Another difficulty [as a future teacher] is that with this assessment you have to correct more activities and more work which means an additional effort both in and out of school (Woman student_2).

In the light of these collected data, this perception of extra effort is the consequence of comparing the traditional assessment models (in which both students and teachers concentrate their effort into a few weeks) and F&SA (which demands a continuous and gradual flow of teacher-student and student-student feedback throughout the course). The proof is that a large part of the participating students, that point to the continuous nature of F&SA as an advantage, also identify the greater work load as a limitation.

As advantages we can bear in mind that the student learns more with the continuous help and corrections of the teacher, although it is true that correcting the same mistake three or four times can be a bit boring, like sometimes happens in the teaching unit (Woman student_34).

The assessment system that we have followed during this term, focused on the day to day and continuous learning [...] has made us learn little by little, acquiring competencies as the course progressed [...] as a disadvantage I can see that the amount of work was excessive and at times boring (Man student_5).

In spite of the generalised sensation of an excessive effort, approximately half the students admitted that the high demand was a “necessary evil” that benefitted their learning:

...with this system it is all advantages except that we have to work more [...] but I consider that working more, in this case, is beneficial as if one of the tasks is badly done or worse than you expected, you can correct it and do it better (Woman student_20).

It requires quite a lot of dedication, both for the time and the energy invested. Although this may appear negative, it is a positive aspect as we have to make an effort for what we want and we are aware that goals should be achieved through effort and perseverance [...] moreover, it is very useful for increasing self-esteem as it is easier

to improve gradually. That is, we can appreciate our continual progress and enjoy it (Woman student_9).

In this same line of thought, Hortigüela-Alcalá & Pérez-Pueyo (2016), López-Pastor (2011) and Julián et al. (2010) find that university students perceive a considerable increase in the work load when they take subjects that apply F&SA as they demand more continuity, effort and commitment than traditional models. In general, the students attribute the extra effort to supposed disproportion between the hours invested and those determined in the study plans (Hortigüela-Alcalá, Pérez-Pueyo & Abella, 2015), a belief that has been widely denied in other empirical studies (Julián et al., 2010; López-Pastor et al., 2013). In any case, in spite of the fact that the satisfaction of the students may decrease slightly as their perception of an excessive effort increases, (Atienza et al., 2016), in general terms F&SA is well accepted at the end of the whole process (Fraile-Aranda & Cornejo, 2012; Romero-Martín et al., 2014). Similarly, there is the belief that the F&SA models mean a disproportionate work load for the teachers (López-Pastor, 2011). However, several studies show that the work load of the teachers who apply F&SA models fits the guidelines of the EHEA (Julián et al., 2010; López-Pastor, 2011; López-Pastor et al., 2013; Romero-Martín et al., 2014).

Expectations of the future teacher

Use of F&SA in their future teaching activities

The immense majority of the participants showed themselves to be determined to use F&SA once they became teachers. A possible interpretation is that the fact of participating in an F&SA process as students of PETE allows them to better understand this assessment model, as well as become aware of its advantages, which represents a motivation for applying these models in the future:

...I consider that I will use formative assessment in my future teaching activities as I consider that it is the one that best adapts to achieve the complete learning of the student [...] at the beginning of the course my conception of formative assessment was positive, but I didn't have much idea about what it consisted of and much less how it could be put into practice. During this term I have been able to experience and understand this system and its application better (Man student_33).

Yes [I will put F&SA into practice] because I believe in its benefits. I can see that it is a fairer way [of assessing] and is centred on the students. I think that in this way it is easier to focus on the process, on the training and not on the result like the mark (Woman student_35).

Through the difference experiences that I have had with the model of formative assessment, my conception of this teaching activity has changed considerably. All the initial doubts and unknowns due to lack of knowledge of this system, and not having participated in it on any previous occasion, disappeared little by little until I got

to the point of understanding the reason for this activity, as well as its benefits compared to other assessment systems [...] I think that I will use it [when I am a teacher] as we can really see if the student is learning during the course (Man student_4).

The specialised literature also shows evidence of a positive transfer between the F&SA experiences had during initial training and professional practice as teachers (Barrientos et al., 2019; Hamodi et al., 2017; Molina & López-Pastor, 2019; López-Pastor et al., 2016). This is due, among other factors, to the confidence that they acquire after having actively participated in the assessment process (Lorente-Catalán & Kirk, 2016).

Use of F&SA in university practicums

In contrast, we found 10 participants who were not sure that they could use F&SA models during their practicums (that they would carry out the following year). Among the arguments presented we find two fundamental beliefs: a) they imagine that their mentors in the schools will not implement F&SA methods; and b) they accept that as students in a practicum they can intervene in the design of learning activities, but not in the assessment and grading processes:

I don't think [I can apply S&FA] because the assessment system is programmed by the teacher I am assigned. [...] Finding a teacher [who applies] a formative assessment system [...] is the only way and I don't think that will happen (Woman student_27).

Responding to if I will assess my students like this in my "school practicum", the answer is NO. The justification is short and specific: obviously as I will only be a student in a practicum, I am not able to assess in a different way from that used by the main teacher (Woman student_9).

With respect to the cases that hesitated over whether they would apply F&SA in their practicum, we can interpret, on the one hand, that the lack of previous experience during their compulsory education stage could be one of the factors which make the PETE students fail to perceive the schools where they carry out their practicum as places where alternative assessment models would be welcomed. On the other hand, they continue to confuse assessment with grading, and think that the latter is the exclusive task of the teacher mentor. They seem to forget that to carry out F&SA will always be an everyday possibility for a teacher, including in their practicum. In fact, there are studies on the difficulties that teachers in initial training have to implement F&SA systems during their practicum (Lorente-Catalán et al., 2018).

Conclusions

The aim of our study was to delve further into the experiences, perceptions and expectations of a group of PETE students regarding F&SA systems. We began by discovering that a large part of the students had

not experienced F&SA models during their compulsory education, which provoked a certain initial reticence when they had to face the processes and mechanisms of this type of assessment for the first time. This is why we strongly recommend devoting time at the beginning of the subject to familiarising the students with the assessment means, strategies and instruments that they are going to use.

We have seen that once their initial resistance has been overcome, the students perceive different advantages to the F&SA system experienced:

- It means gradual and permanent learning, which makes it possible to distribute the effort throughout the whole learning process and not concentrate it all at the end.
- There is more support for the student, which allows them to be more aware of their learning, of the gaps they may have in their knowledge and the ways to correct them.
- Reflective and meaningful learning is encouraged, especially if they use authentic assessment activities.

All of this implies greater and better learning of the contents and professional competencies established in the subject.

The students also perceived that, in comparison with the traditional assessment models, F&SA involves an increase in work and dedication. This sensation of excessive effort is due to a large extent to the continual flow of teacher-student and student-student feedback.

Bearing in mind their condition as students of PETE, we were interested in knowing the advantages and limitations for the teacher which they attributed to F&SA. In this regard, the students indicated that F&SA allows the teachers to better guide their students, to assess and grade more fairly and to improve teaching processes to better adapt them to the needs of the students and to the context. Similarly, they perceive F&SA as an adequate and desirable assessment model in spite of the greater work load which they attribute to it. The proof of this is that a large part of the students intends to use F&SA in their future professional activities.

This study may be interesting for teaching and research professionals who are curious about alternative assessment processes, focused on the students' learning. However, some limitations need to be pointed out. Firstly, the perception of the students regarding the benefits attributed to F&SA may be limited to the experience that they have had in the subject. Secondly, the students that belonged to other groups taking the subject that also implemented F&SA systems could have been taken into account.

Lastly, the use of focus groups or individual interviews with the students could have contributed more information respecting their conception of F&SA, their evaluation of the experience in the subject and their expectations for

their professional future regarding the use of this type of assessment.

Based on these results, new lines of research arise, like discovering the factors which operate as facilitators or inhibitors when applying F&SA during the first years of teaching, as well as the role that PETE plays in this process.

Funding

Grant RTI2018-093292-B-I00 funded by MCIN/AEI/10.13039/501100011033 and, by "ERDF A way of making Europe".

Bibliography

- Alonso-Sáez, I., & Arandia-Loroño, M. (2017). 15 años desde la Declaración de Bolonia. Desarrollo, situación actual y retos de Espacio Europeo de Educación Superior. *Revista Interuniversitaria de Educación Superior*, 8 (23), 199-213. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S2007-28722017000300199&lng=es&tlng=es
- Álvarez-Méndez, J. M. (2001). *Evaluar para conocer, examinar para excluir*. Madrid: Morata.
- Asún, S., Fraile-Aranda, A., Aparicio, J. L., & Romero-Martín, M. R. (2020). Dificultades en el uso del feedback en la formación del profesorado de Educación Física. *Retos*, 37, 85–92. <https://doi.org/10.47197/retos.v37i37.71029>
- Atienza, R., Valencia-Peris, A., Martos-García, D., López-Pastor, V. M., & Devís-Devís, J. (2016). La percepción del alumnado universitario de Educación física sobre la evaluación formativa: ventajas, dificultades y satisfacción. *Movimiento*, 4(22), 1033–1048. <https://doi.org/10.22456/1982-8918.59732>
- Barrientos, E., López-Pastor, V. M., & Pérez-Brunicardi, D. (2019). ¿Por qué hago evaluación formativa y compartida y/o evaluación para el aprendizaje en EF? La influencia de la formación inicial y permanente del Profesorado. *Retos*, 36, 37–43. <https://doi.org/10.47197/retos.v36i36.66478>
- Black, P., & William, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice*, 5(1), 7–74. <https://doi.org/10.1080/096959598005010>
- Bretones, A. (2008). Participación del alumnado de Educación Superior en su evaluación. *Revista de Educación*, 347, 181-202. <https://www.educacionyfp.gob.es/revista-de-educacion/numeros-revista-educacion/numeros-anteriores/2008/re347/re347-09.html>
- Brown, S., & Glasner, A. (2003). *Evaluar en la universidad*. Madrid: Narcea.
- Boud, D. (2000). Sustainable assessment: rethinking assessment for the learning society. *Studies in*

- Continuing Education*, 22(2), 151–167. <https://doi.org/10.1080/713695728>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp0630a>
- Buscà, F., Cladellas, L., Calvo, J., Martín, M., Padrós, M., & Capllonch, M. (2011). Evaluación formativa y participativa en docencia universitaria. Un estudio sobre los artículos publicados en revistas españolas entre 1999 y 2009. *Aula Abierta*, 39(2), 137–148. <https://reunido.uniovi.es/index.php/AA/issue/view/1038/142>
- Cañadas, L., Santos-Pastor, M. L., & Castejón-Oliva, F. J. (2018). Desarrollo de Competencias Docentes en la Formación Inicial del Profesorado de Educación Física. Relación con los Instrumentos. *Estudios Pedagógicos*, 44(2), 111–126. <https://doi.org/10.4067/S0718-07052018000200111>
- Dochy, F., Segers, M., & Dierick, S. (2002). Nuevas vías de aprendizaje y enseñanza y sus consecuencias: una nueva era de evaluación. *Revista de Docencia Universitaria*, 2(2), 13–29. <https://revistas.um.es/redu/article/view/20051>
- Dochy, F., Segers, M., & Sluijsman, D. (1999). The use of self-, peer-, and co-assessment in higher education: a review. *Studies in Higher Education*, 24(3), 331–350. <https://doi.org/10.1080/03075079912331379935>
- Doolittle, S. A., Doods, P., & Placek, J. H. (1993). Persistence of beliefs about teaching during formal training of perspective teachers. *Journal of Teaching in Physical Education*, 12(4), 355–365. <https://doi.org/10.1123/jtpe.12.4.355>
- Emery, C. R., Kramer, T. R., & Tian, R. G. (2003). Return to academic standards: a critique of student evaluation of teaching effectiveness. *Quality Assurance in Education*, 11(1), 37–46. <https://doi.org/10.1108/09684880310462074>
- Escudero, T. (2010). *Sin tópicos ni malentendidos: fundamentos y pautas para una práctica evaluadora de calidad en la enseñanza universitaria*. Zaragoza: Instituto de Ciencias de la Educación.
- Fraile-Aranda, A., Aparicio, J. L., Asún, S., & Romero-Martín, R. (2018). La Evaluación Formativa de las Competencias Genéricas en la Formación del Profesorado de Educación Física. *Estudios Pedagógicos*, 44(2), 39–53. <https://doi.org/10.4067/S0718-07052018000200039>
- Fraile-Aranda, A., & Cornejo, P. V. (2012). La evaluación formativa en la enseñanza universitaria: una experiencia de innovación educativa con estudiantes de Educación Física. *REVALUE*, 1(2), 1–22.
- Gómez, V., & Guerra, P. (2012). Teorías implícitas respecto a la enseñanza y el aprendizaje: ¿Existen diferencias entre profesores en ejercicio y estudiantes de pedagogía? *Estudios Pedagógicos*, 38(1), 25–43. <https://dx.doi.org/10.4067/S0718-07052012000100001>
- Gutiérrez-García, C., Pérez-Pueyo, Á., & Pérez-Giménez, M. (2013). Percepciones de profesores, alumnos y egresados sobre sistemas de evaluación en estudios universitarios de formación del profesorado de educación física. *Ágora para la Educación Física y el Deporte*, 2(15), 130–151. http://agora-revista.blogs.uva.es/files/2013/11/agora_15_2d_gutierrez_et_al.pdf
- Hamodi, C. (2016a). El proceso de convergencia hacia el EEES. En C. Hamodi (coord.), *Formar mediante la evaluación en la Universidad. Propuestas prácticas útiles para docentes* (pp. 13–21). Valladolid: Universidad de Valladolid.
- Hamodi, C. (2016b). La distribución intra-grupal de la calificación de trabajos colectivos. En C. Hamodi (coord.), *Formar mediante la evaluación en la Universidad. Propuestas prácticas útiles para docentes* (pp. 45–52). Valladolid: Universidad de Valladolid.
- Hamodi, C., & Barba-Martín, R. (2021). *Evaluación Formativa y Compartida. Nuevas propuestas de desarrollo en Educación Superior*. Madrid: Dextra.
- Hamodi, C., & López-Pastor, A. T. (2012). La evaluación formativa y compartida en la formación inicial del profesorado desde la perspectiva del alumnado y de los egresados. *Psychology, Society & Education*, 4(1), 103–116. <http://ojs.ual.es/ojs/index.php/psye/article/view/484>
- Hamodi, C., López-Pastor, A. T., & López-Pastor, V. M. (2014). Red de evaluación Formativa y Compartida en docencia universitaria: creación, consolidación y líneas de trabajo. *REVALUE*, 3(1), 1–33.
- Hamodi, C., López-Pastor, V. M., & López-Pastor, A. T. (2017). If I experience formative assessment whilst at University will I put it into practice later as a teacher? Formative and shared assessment in Initial Teacher Education. *European Journal of Teacher Education*, 40(2), 171–190. <https://doi.org/10.1080/02619768.2017.1281909>
- Hargreaves, E. (2007). The validity of collaborative assessment for learning. *Assessment in Education: Principles, Policy and Practice*, 14(2), 185–199. <https://doi.org/10.1080/09695940701478594>
- Hortigüela-Alcalá, D., & Pérez-Pueyo, Á. (2016). Percepción del alumnado de las clases de educación física en relación con otras asignaturas. *Apunts. Educación Física y Deportes*, 123(1), 44–52. [https://doi.org/10.5672/apunts.2014-0983.es.\(2016/1\).123.05](https://doi.org/10.5672/apunts.2014-0983.es.(2016/1).123.05)
- Hortigüela-Alcalá, D., Pérez-Pueyo, Á., & Abella, V. (2015). Perspectiva del alumnado sobre la evaluación tradicional y la evaluación formativa. Contraste de grupos en las mismas asignaturas. *REICE. Revista*

- Iberoamericana sobre Calidad, Eficacia y Cambio en Educación*, 13(1), 35–48. <https://revistas.uam.es/reice/article/view/2798>
- Hortigüela-Alcalá, D., Pérez-Pueyo, A., & Fernández-Río, J. (2016). Influencia de las experiencias vivenciadas por el alumnado en el desempeño de futuras competencias docentes. *Contextos Educativos*, 19, 25–41. <https://doi.org/10.18172/con.2742>
- Hortigüela-Alcalá, D., Pérez-Pueyo, Á., & López-Pastor, V. M. (2015). Implicación y regulación del trabajo del alumnado en los sistemas de evaluación formativa en educación superior. *RELIEVE*, 21(1), 1–14. <https://doi.org/10.7203/relieve.21.1.5171>
- Julián, J. A., Zaragoza, J., Castejón-Oliva J., & López-Pastor, V. M. (2010). Carga de trabajo en diferentes asignaturas que experimentan el sistema ECTS. *Revista Internacional de Medicina y Ciencias de la Actividad Física y el Deporte*, 10(38), 218–233. <http://cdeporte.rediris.es/revista/revista38/artcarga151.htm>
- Knight, P. (2005). *El profesorado de educación superior. Formación para la excelencia*. Madrid: Narcea.
- Lin, J., & Lai, Y. (2013). Harnessing Collaborative annotations on online formative assessment. *Educations Technology & Society*, 16(1), 263–274. <https://www.jstor.org/stable/10.2307/jeductechsoci.16.1.263>
- López-Pastor, V. M. (coord.). (2009). *Evaluación Formativa y Compartida en Educación Superior. Propuestas, técnicas, instrumentos y experiencias*. Madrid: Narcea.
- López-Pastor, V. M. (2011). El papel de la evaluación formativa en la evaluación por competencias: aportaciones de la Red de Evaluación Formativa y Compartida en docencia universitaria. *REDU*, 9(1), 159–173. <https://doi.org/10.4995/redu.2011.6185>
- López-Pastor, V. M., Pérez-Pueyo, Á., Barba, J. J. & Lorente-Catalán, E. (2016). Percepción del alumnado sobre la utilización de una escala graduada para la autoevaluación y coevaluación de trabajos escritos en la formación inicial del profesorado de educación física (FIPEF). *Cultura, Ciencia y Deporte*, 11(31), 37–50. <https://doi.org/10.12800/ccd.v11i31.641>
- López-Pastor, V. M., Pintor, P., Muros, B., & Webb, G. (2013). Formative assessment Strategies and their Effect on Student Performance and on Student and Tutor Workload: The Results of Research Projects Undertaken in Preparation for Greater Convergence of Universities in Spain within the European Higher Education Area (EHEA). *Journal of Further and Higher Education*, 37(2), 163–180. <https://doi.org/10.1080/0309877X.2011.644780>
- Lorente-Catalán, E., & Kirk, D. (2016). Student teachers' understanding and application of Assessment for Learning during a Physical Education Teachers Education course. *European Physical Education Review*, 20(1), 104–119. <https://doi.org/10.1177/1356336X15590352>
- Lorente-Catalán, E., López-Pastor, V. M., & Kirk, D. (2018). La evaluación participativa en la formación inicial del profesorado: un caso sobre su utilización en las primeras experiencias profesionales. En E. Lorente-Catalán y D. Martos-García (eds.). *Educación Física y Pedagogía Crítica: Propuestas para la transformación personal y social* (pp.193–213). Lleida: Universitat de Lleida.
- Margalef, L. (2014). Evaluación formativa de los aprendizajes en el contexto universitario: Resistencias y paradojas del profesorado. *Educación XXI*, 17(2) 87–102. <https://doi.org/10.5944/educxx1.17.2.11478>
- Martínez, L., Castejón-Oliva, F. J., & Santos-Pastor, M. L. (2012). Diferentes percepciones sobre evaluación formativa entre profesorado y alumnado en formación inicial en educación física. *REIFOP*, 15(4), 57–67. <https://revistas.um.es/reifop/article/view/174811>
- Martínez, L. F., Santos, M. L., & Castejón-Oliva, F. J. (2017). Percepciones de alumnado y profesorado en Educación Superior sobre la evaluación en formación inicial en educación física. *Retos*, 32, 76–81. <https://doi.org/10.47197/retos.v0i32.52918>
- Martínez, L., & Ureña, N. (2008). Evaluación formativa y compartida en la educación superior: desarrollo psicomotor. *Revista Española de Educación Física y Deporte*, 9, 67–86.
- Molina, M., & López-Pastor, V. M. (2019). ¿Evaluó cómo me evaluaron en la facultad? Transferencia de la evaluación vivida durante la formación inicial del profesorado a la evaluación practicada como docente. *Revista Iberoamericana de Evaluación Educativa*, 12(1), 85–101. <https://doi.org/10.15366/10.15366/rie2019.12.1.005>
- Navarro-Adelantado, V., Santos-Pastor, M. L., Buscà, F., Martínez, L., & Martínez, L. F. (2010). La experiencia de la red universitaria española de evaluación formativa y compartida: proceso y abordaje. *Revista Iberoamericana de Educación*, 52(7), 1–12. <https://doi.org/10.35362/rie5271766>
- Pérez-Pueyo, Á., Taberner, B., López-Pastor, V. M., Ureña, N., Ruiz, E., Capllonch, M., González, N., & Castejón-Oliva, F. J. (2008). Evaluación formativa y compartida en la docencia universitaria y el Espacio Europeo de Educación Superior: cuestiones clave para su puesta en práctica. *Revista de Educación*, 347, 435–451. <https://www.educacionyfp.gob.es/revista-de-educacion/numeros-revista-educacion/numeros-antteriores/2008/re347/re347-20.html>
- Rué, J. (2009). El cambio en la universidad, sus epistemologías y consecuencias de las mismas. *Revista Complutense*

de Educación, 20 (2), 295-317. <https://revistas.ucm.es/index.php/RCED/article/view/RCED0909220295A>

Romero-Martín, R., Castejón-Oliva, F. J., & López-Pastor, V. M. (2015). Divergencias del alumnado y del profesorado universitario sobre las dificultades para aplicar la evaluación formativa. *RELIEVE*, 21(1), 1-17. <https://doi.org/10.7203/relieve.21.1.5169>

Romero-Martín, R., Fraile-Aranda, A., López-Pastor, V. M., & Castejón-Oliva, F. J. (2014). Relación entre sistemas de evaluación formativa, rendimiento académico y carga de trabajo del profesor y del alumno en la docencia universitaria. *Infancia y Aprendizaje*, 37(2), 1-17. <https://doi.org/10.1080/02103702.2014.918818>

Sadler, D. R. (1989). Formative Assessment and the Design of Instructional Systems. *Instructional Science*, 18, 119-144. <https://link.springer.com/article/10.1007/BF00117714>

Schaeffer, G., Epting, K., Zinn, T., & Buskist, W. (2003). Student and faculty perceptions of effective teaching: a successful replication. *Teaching of Psychology*, 30(2), 133-136.

Sonlleva, M., Martínez, S., & Monjas, R. (2021). Una experiencia de evaluación formativa y compartida: los proyectos de aprendizaje tutorado y la evaluación del trabajo en grupo. Reflexiones y propuestas. En C. Hamodi y R. Barba-Martín (coords.). *Evaluación Formativa y Compartida. Nuevas propuestas de desarrollo en Educación Superior* (pp.181-193). Madrid: Dextra.

Souto, R., Jiménez, F., & Navarro-Adelantado, V. (2020). La percepción de los estudiantes sobre los sistemas de evaluación formativa aplicados en la educación superior. *Revista Iberoamericana de Evaluación Educativa*, 13(1), 11-39. <https://doi.org/10.15366/rie2020.13.1.001>

Tillema, H. H. (2000). Belief change towards self-directed learning in student teachers: Immersion in practice or reflection on action. *Teaching and Teacher Education*, 16(5), 575-591. [https://doi.org/10.1016/S0742-051X\(00\)00016-0](https://doi.org/10.1016/S0742-051X(00)00016-0)

Vallejo, M., & Molina, J. (2014). La evaluación auténtica de los procesos evaluativos. *Revista Iberoamericana de Educación*, 64, 11-25. <https://doi.org/10.35362/rie640403>

Vallés, C., Ureña, N., & Ruiz, E. (2011). La evaluación Formativa en Docencia Universitaria. Resultados globales de 41 estudios de caso. *REDU*, 9(1), 135-156. <https://doi.org/10.4995/redu.2011.6184>

Villa, A., Arranz, S., Campo, L., & Villa, O. (2015). Percepción del profesorado y responsables académicos sobre el proceso de implantación del Espacio Europeo de Educación Superior en diversas titulaciones de educación. *Profesorado: Revista de currículum y*

formación del profesorado, 19 (2), 245-264. <https://revistaseug.ugr.es/index.php/profesorado/article/view/18777>

Zaragoza, J., Luis, J. C., & Manrique, J. C. (2008). Experiencias de innovación en docencia universitaria: resultados de la aplicación de sistemas de evaluación formativa. *REDU*, 4, 1-33. <https://doi.org/10.4995/redu.2009.6232>