

Formative assessment in university context: opportunities and proposals for action

Laura Cañadas

Universidad Autónoma de Madrid, Facultad de Formación de Profesorado y Educación,
Madrid, España

<https://orcid.org/0000-0003-4179-9018>

Received: 14/07/2020

Revised: 24/10/2020

Accepted: 02/12/2020

Published: 10/12/2020

Abstract

Assessment is one of the most important and controversial elements of University training. Despite the extensive bibliography that supports the use of formative assessment processes in Higher Education, in practice, there is still a great predominance in the use of traditional assessment systems that seek to establish a grade at the end of the training period. The aim of this article is to carry out a review of the concepts of assessment and show the characteristics that formative assessment processes in Higher Education must have, in order to make a series of recommendations and proposals that can serve as reference elements for the change in the assessment processes. It is necessary to advance in the use of these procedures in a systematic and planned way to achieve a more formative environment in a system that keeps a single numeric grade as the culmination of the process.

Keywords: formative assessment; higher education; initial training; instruments: feedback

Evaluación formativa en el contexto universitario: oportunidades y propuestas de actuación

Resumen

La evaluación es uno de los elementos más importantes y a la vez más controvertidos de la formación universitaria. A pesar de la amplia bibliografía que apoya el empleo de los procesos de evaluación formativa en Educación Superior, en la práctica todavía hoy no se da un uso generalizado de esta, predominando los sistemas tradicionales de evaluación que buscan únicamente establecer una calificación al final del periodo formativo. El principal objetivo de este artículo es realizar una revisión sobre las concepciones de la evaluación y mostrar las características que deben tener los procesos de evaluación formativa en Educación Superior, para posteriormente realizar una serie de recomendaciones y propuestas que puedan servir como referencia para el cambio en los procesos de evaluación. Es necesario avanzar hacia la utilización de estos procedimientos de forma sistemática y planificada para conseguir un entorno lo más formativo posible y que únicamente tenga en cuenta la nota como la culminación de este proceso.

Palabras claves: evaluación formativa; educación superior; formación inicial; instrumentos; feedback

Avaliação formativa no contexto universitário: oportunidades e propostas de desempenho

Resumo

A avaliação é um dos elementos mais importantes e ao mesmo tempo mais controversos do ensino universitário. Apesar da extensa bibliografia que apóia o uso de processos formativos de avaliação no ensino superior, na prática, ainda não há um uso generalizado disso, com sistemas tradicionais de avaliação que buscam certificar a aprendizagem dos alunos através uma nota no final do período de treinamento, geralmente através do uso do exame. Por esse motivo, o principal objetivo deste artigo é realizar uma revisão dos conceitos de avaliação e mostrar as características que os processos de avaliação formativa devem ter, para posteriormente fazer uma série de recomendações e propostas que possam servir como elementos de referência. pela mudança nos processos de avaliação. É preciso caminhar para a utilização desses procedimentos de forma sistemática e planejada para se atingir o ambiente mais educativo possível e que só leve em conta a série como culminância desse processo.

Palavras-chave: avaliação formativa; ensino superior; treinamento inicial; instrumentos; feedback.

How to cite this article:

Cañadas, L. (2020). Formative assessment in university context: opportunities and proposals for action. *Revista Digital de Investigación en Docencia Universitaria*. 14(2), e1214. <https://doi.org/10.19083/ridu.2020.1214>

Introduction

Assessment is one of the most important and, at the same time, most controversial elements of university education. Although for years there have been numerous assessment proposals aimed at the search for deeper and more lasting learning on the part of students (López-Pastor & Sicilia-Camacho, 2017), there is still great reluctance to this change. Traditional forms of assessment are still broadly used, perpetuating its use as a mere instrument for grading students at the end of a formative period (Cañadas, Santos-Pastor, & Castejón, 2018a; Panadero, Fraile, Fernández-Ruiz, Castilla-Estévez, & Ruíz, 2019). Many traditional conceptions and beliefs about assessment remain rooted among teachers, such as who should assess, which instrument is the only one that is really valid to ensure learning, or the perception of these procedures as a punishment or punitive element for students. All this prevents a generalized switch toward alternative forms of assessment. This has meant that, in the context brought about by COVID-19, numerous doubts and difficulties have arisen on how to ensure a

fair, sustainable, and quality assessment process for the development of competencies within the university programs. The general concern that has been expressed in order to find a solution to the challenge of asserting who, how, or with what resources an exam is completed in an online teaching context (Prince, Fulton, & Garsombke, 2009) has made visible the large number of programs and professors that still use exams as the main and almost only resource to assess student learning at the end of the formative period. In higher education, most of the formative actions have been aimed at providing professors with online tools to be able to prepare tests of these characteristics (McDowell, 2020; Nic Dhonncha & Murphy, 2020; Rodríguez & Luzardo, 2020). This is indicative of the great weight that final exams continue to have in the assessment process. Although they are very useful instruments to ensure the acquisition of certain competencies or learning, one final exam cannot be the pivot around which an entire four-month formative period revolves.

Therefore, everything that has happened during these times should serve as a lesson for us to rethink the assessment systems we have been

using. This change should not be a temporary response to the needs of online teaching but should be seen as a need for long-term change, becoming a lasting practice in higher education. In this context, teaching and assessment at the university have an opportunity to reinvent themselves.

The main objective of this article is to review the conceptions of assessment and to show the characteristics that formative assessment processes in higher education should have, and, subsequently, make a series of recommendations and proposals that can serve as reference to change the assessment processes in higher education.

Conceptions of Assessment in Higher Education. From Grading to Formative Assessment

Traditionally, assessment was oriented to accountability, to the certification of academic results (Knight, 2006). Its main objective was to assess to what degree the expected objectives by the end of a teaching period had been achieved (Álvarez, 2011) by giving a grade as an act that ratifies what has been learned (Black, Harrison, Lee, Marshall, & Wiliam, 2002). This conception was characterized by the search for objectivity in order to measure as reliably as possible the students' production at the end of the teaching and learning process (Álvarez, 2003). In this type of evaluation, assessment is equated with grading, limiting assessment to the performance of one exam, where the teacher is the only one responsible for evaluating and the students, the only object of assessment (Calderón & Escalera, 2008). The consequence of this type of assessment is that learning is often left aside, centering the focus on studying for the exam.

However, as a result of the structural and functional changes that have been taking place at the university in the last 10 years, there is a demand for a different type of assessment (Benito & Cruz, 2005). There is a demand to assess learning (Sambell, McDowell, & Montgomery, 2013), to assess with the main purpose of improving the teaching and learning processes that take place in the classroom, regulating learning so that, by the

end of the process, the proposed objectives are achieved to the greatest extent possible (Dolin, Black, Harlen, & Tiberghien, 2017; Hortigüela, Palacios-Picos, & López-Pastor, 2019). This is a type of assessment that should be integrated into the teaching practice, where both teachers and students should be the object of assessment and learning improvement should be sought, instead of using assessment as a mere qualifying object (López-Pastor, 2009).

In spite of this, the assessment tradition and the experienced practices carry a lot of weight, and generally lead to equating assessment with grading (López-Pastor, 2017). Many of the assessment processes are carried out in such a way that all productions must be associated with a grade, but not always with feedback or the subsequent use of this information to improve learning. Assessment and grading have different purposes and, therefore, cannot be used as if they were the same thing. Hamodi (2016) outlines the differences between these two processes:

- **Assessment:** Gathering of information for its subsequent analysis and judgment for decision making that is carried out throughout the teaching and learning process. The assessment must respond to a continuous learning (formative), that allows to see the students' progress (regulatory) and to improve the teaching and learning process (pedagogical) through the exchange of information between teachers and students (communicative).
- **Grading:** To transform judgment into a grade, generally by the end of the process. The grade, mainly, has a certifying and control function.

Therefore, although grading is socially necessary, due to the demands of certifying that the student has acquired a certain level of learning, it should not be the pivot around which the whole process revolves. Prior to grading, there must have been a continuous and formative assessment process that has allowed students to improve their learning with respect to their initial level and to achieve the objectives to the greatest extent possible.

As a response to this necessary change,

various proposals have emerged that share the principles necessary for change in assessment processes. Specifically, we will focus on formative assessment, a proposal that research has shown to have a positive impact on competence development, favoring greater student learning (Barba-Martín, Bores-García, González-Calvo, & Hortigüela, 2020; Cañadas, Santos-Pastor, & Castigüjón, 2020; Gallardo-Fuentes, López-Pastor, & Carter-Thuillier, 2018; Hortigüela, Fernández-Río, Castejón, & Pérez-Pueyo, 2017; Romero, Castejón, López-Pastor, & Fraile-Aranda, 2017).

Formative Assessment in Higher Education

Formative assessment can be defined as the way in which, based on pre-established and planned criteria, information is gathered during the formative process on student learning and professor teaching with the aim of improving the teaching and learning process (Cañadas, 2018; López-Pastor & Sicilia, 2017). The main characteristics of formative assessment processes, which can be seen in Figure 1, are summarized in this definition. The following is a description of the most relevant characteristics that formative assessment systems must comply with for their effective implementation, and which are

supported by various research studies (Cañadas, 2018; Wiliam & Leahy, 2015) (see Figure 1).

- **Systematic and planned:** In order for assessment to have positive effects on student learning, it must be planned in advance, deciding what goals are to be achieved in the plan or program, how it will be assessed, when and how the information will be collected, what will be done with that information or who will be in charge of doing it. In addition, it must be integrated into the teaching and learning process (López-Pastor, 2017).
- **Clarifies learning objectives and assessment criteria with students:** One of the aspects that delimits the capacity for greater learning is prior understanding of what students are expected to learn by the end of a formative period (Benito & Cruz, 2005). To this end, it is important to share with the students both the learning objectives and the assessment criteria (Villardón, 2006). The learning objective in a formative assessment system is what directs both the feedback and the feedforward that can be given (Frey & Fisher, 2011). A further step into these processes would be to establish the

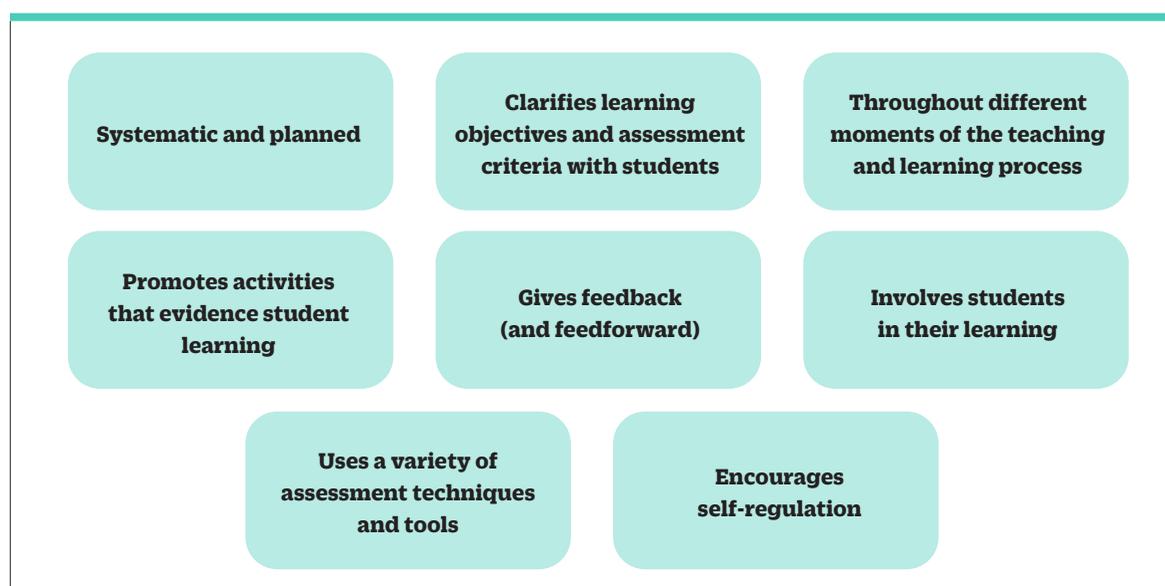


Figure 1. Characteristics of the Assessment Systems (Cañadas, 2018).

assessment criteria with the students at the beginning of the teaching and learning process (Moss & Brookhart, 2019). In this way, students are involved in the development of these criteria, making them more aware of what they should be able to do by the end of the learning period, and helping them self-regulate their learning (Moss & Brookhart, 2019).

- **It should be carried out throughout different moments of the teaching and learning process:** As it was explained at the beginning, traditionally, assessment has been associated with the performance of a test at the end of the formative period in order to assess to what degree competencies and/or learning has been acquired. However, formative assessment processes, in order to really have the desired impact on learning, must be carried out at different moments of the process and with different purposes (Heritage, 2010). Among these, we find three moments: initial, procedural (or continuous), and final. Generally, each of these moments has a different purpose. The following is a brief analysis of the purposes assessment has at each of these moments: (a) Initial assessment: it occurs at the beginning of the formative process, generally with a diagnostic function, that is, with the purpose of determining the student's starting point in order to use this information to adapt the program to the students' level (Grau & Gómez, 2010); (b) Processual or continuous: it takes place throughout the entire teaching and learning process, and its main function is formative in nature (Good, 2011). That is, it seeks to improve the teaching and learning process (Lukas & Santiago, 2004); and (c) the final assessment, which tends to have a summative character, that is, it seeks to verify the degree of learning acquisition (Good, 2011). In some cases, continuous assessment can have a summative character when it is used to certify the degree of learning throughout

the process, generally through mid-term tests or grading. In the same way, the final assessment could have a formative character if the information obtained is used to adjust the upcoming learning of a formative period.

- **Promotes activities that evidence student learning:** Assessment is traditionally understood as a formal process with structured activities that is usually established in the curricula, seeking to assess a number of competencies that should have been acquired at a given time and that, should students fail to do so, does not allow them onto the next level (Popham, 2013). However, within a formative assessment process, it should not only have this purpose. Assessment activities can be proposed that are at an intermediate point where the assessment is planned by the teachers in order to determine what the student already knows and still needs to learn. Finally, there should also be spaces for informal assessment, where unstructured encounters take place between the agents involved in the teaching and learning process and where feedback is provided to allow for further progress (Ruíz-Primo, 2011). All this implies that not all the assessment activities must have a grade associated with them, so that assessment is detached from this traditional perspective to truly aim for the improvement of the teaching and learning process (López-Pastor, 2017).
- **Gives feedback (and feedforward):** One of the key elements of formative assessment processes is the information provided to students about how they are doing (feedback) and what they should do to improve (feedforward). Feedback is defined as the information provided on how successful the realization of something is being or has been (Cañadas, 2018). In order to determine how successful they are being, it is necessary to determine what the student was expected to do at that particular moment (Black & Wiliam,

2009). Once the student is aware of where they are at, they need information on how to close the gap between where they are at that moment and what they are expected to do. This information is what is known as feedforward (Walker, 2013). In addition, this information should serve to develop self-regulation processes in the student, that is, little by little, independently, the student determines where they are at with respect to those learning objectives and can implement resources to close that gap (Stiggins & Chappuis, 2005).

On the other hand, several studies (Gibbs & Simpson, 2004; Boud & Molloy, 2013; Nicol & Macfarlane-Dick, 2004, 2006) have compiled what the characteristics of effective feedback should be. One of the most outstanding is that of Gibbs and Simpson (2004). For these authors, effective feedback must: (i) be sufficient, both in terms of times and quality; (ii) focused on students' achievement and learning, and not on the students; (iii) received by students when they can still use this information for future learning or to receive support; (iv) appropriate for the purpose of the assessment and the objectives or competencies proposed; (v) appropriate for the students' understanding of what they should be doing (vi) useful, it is received and used to improve learning; and (vii) the student activates the feedback process by changing the way they approach future tasks.

- **Involves students in their learning and that of their peers:** Encouraging student participation in the assessment process helps reinforce the formative nature of the assessment and share the responsibility of the assessment process with them (Adachi, Tai, & Dawson, 2018; Ibarra, Rodríguez, & Gómez, 2012; Rodríguez, Ibarra, & García, 2013). Student participation can take place through self-assessment and co-assessment or peer assessment processes. The former refers to the process by which a student judges their own work (Andrade,

2019); while co-assessment or peer assessment refers to the process by which one person judges the work of another by providing feedback on their performance (López-Pastor, 2017). In the case of peer assessment, students can assume the role of evaluator or evaluatee (Li, 2017). When acting as an evaluator, their function will be to identify, based on criteria (internal or external), the quality of the work by another peer and give feedback on their performance (Li, Liu, & Steckelberg, 2010). Peer assessment can also be individual or in groups, and the latter in turn can be inter-group, referring to the assessment of one group to another, and intragroup, the process in which participants evaluate each other within their group (Hamodi, 2016). The involvement of students in the assessment process will have a dual function. On the one hand, as a means to develop the processes of autoregulation of learning, that is, the control a person has over their actions, thoughts, or emotions to achieve learning (Panadero, Jonsson, & Botella, 2017; Zimmerman, 2000); and, on the other hand, as a democratic practice that involves students in their own learning through processes of respect and shared responsibility (López-Pastor, 2009). In the assessment processes in which students participate, we find shared assessment, another assessment modality. Shared assessment is defined as the processes of dialogue between teachers and students on assessment (López-Pastor et al., 2007). Finally, the processes of student participation in the assessment can be culminated by their participation in the grading process. In this case, as in the assessment processes, student participation in grading can be through self-grading (assigning a grade to oneself), peer grading (assigning a grade to a classmate), and dialogued grading (a process in which the grade is determined in a dialog between teachers and students) (López-Pastor, 2012).

- **Uses a variety of assessment techniques and instruments:** When we discuss assessing student learning, we are talking about assessing it in all its areas of action (Cañadas, Santos-Pastor, & Castejón, 2018b). Generally, in the current context of higher education, we speak of assessing the competencies acquired in a subject or formative period, which implies assessing learning objectives that address the cognitive, procedural, social, and emotional aspects of individuals (Frost, de Pont, & Brailsford, 2012; García & Morillas, 2011). To this end, an increasing variety of assessment techniques and instruments have been developed in formative contexts that allow to collect information on student learning (Tillema & Smith, 2009). An assessment technique is understood as the strategies used to collect information (Rodríguez & Ibarra, 2011). While assessment instruments are defined as standardized procedures that provide objective information on a person's performance (Muñiz & Fonseca-Pedrero, 2008). Both the assessment techniques and instruments should be selected according to different aspects: learning objectives, students enrolled in the subject, consistency with the methodology used, etc. (Castejón, Capllonch, González-Fernández, & López-Pastor, 2009). There are numerous existing assessment techniques and instruments that have proven to be very useful for assessing student learning. A list of these can be found in Table 1.

A cross-sectional element in all these characteristics, and one that has emerged in most of them, is the regulation and self-regulation of learning. Formative assessment processes are essential to develop students' learning to learn ability, and for this it is necessary to develop the ability to self-regulate learning. Self-regulation is a process through which students mentally represent the objective to be achieved and ensure that the established objectives are reached (Efklides, 2011). This process consists of several cyclical phases: planning how to implement it, monitoring

whether its implementation is adequate, evaluating its performance, and analyzing the cause of its result (Panadero, Alonso-Tapia, & Huertas, 2012). The systematicity of the process, the sharing of assessment objectives and criteria (or developing them with the students), the implementation of activities that allow partial assessment of student performance, the introduction of changes in the teaching and learning process if necessary, and, very importantly, the involvement of students in the assessment process and the generation of opportunities to receive (externally or internally) feedback on their performance and information on what needs to be done to improve will contribute to the self-regulation of learning.

Quality Criteria for formative Assessment Systems

There are a number of criteria that must be met by any formative assessment system that is to be implemented and that ensure its quality, taking into account the context in which it is to be applied. These criteria are (López-Pastor, 2006, 2008, 2009, 2017):

- **Adequacy:** The proposed assessment system must be in accordance with the competencies or objectives of the subject and in concordance with the methodology to be employed.
- **Formative:** That the assessment serves to improve and learn more.
- **Ethics:** Refers to, on the one hand, assuring the confidentiality of the information collected through the assessment tests; and, on the other hand, and very importantly, to not use grading as an element of power and control that allows for the sanctioning of students.
- **Relevant:** Choose, among all the possible elements to be evaluated, the most relevant for the process that provide concrete and sufficient information to determine if the proposed competencies have been acquired.
- **Integrated:** This refers to the need for

Table 1.

Assessment Methods, Techniques, and Instruments According to Hamodi (2014, p.24)

INSTRUMENTS	Written	Folder or dossier	Case studies	Electronic portfolio	Control (exam)
		Essay	Poster	Academic / field notebook	Virtual Forum
		Project	Questionnaire	Memoir	Objective test
		Reflective / class/ journal	Monograph	Recension	Report
		Diagnostic test		Written work	
	Oral	Communication	Presentation	Lecture	Oral questionnaire
		Group discussion	Class question	Group discussion / Debate	
		Oral Presentation		Roundtable	
	Practical	Supervised test	Demonstration, performance, or representation		Role-Playing
	TECHNIQUES	Without student participation	Documentary and production analysis (review of personal and group work)		
Observation, direct observation of the student, observation of the group, systematic observation, audio or video recording analysis					
With student participation		Self-assessment (through self-reflection and/or documentary analysis)			
		Peer assessment (through documentary analysis and/or observation)			
		Shared assessment (by means of an individual or group interview between teachers and students).			
METHODS	Teacher's journal	Rating scale	Self-assessment sheets	Test scale	Observation sheets
	Checklist	Peer assessment sheets	Semantic differential scale	Verbal or numerical scale	Decision matrices
	Expert report	Descriptive scale or rubric	Tracking sheets	Self-assessment report	

assessment to be an intrinsic part of the teaching and learning process, and not an external and decontextualized element of the activities. In addition, it must involve the students, and the assessment processes must integrate the different competencies and contents worked on.

- **Truthfulness:** To have objective criteria for the assessment of student learning, and sufficient evidence that allows for a

broad collection of information on student learning, so this is not limited to the information collected in a single test.

- **Feasible:** That it can be carried out, that it is balanced, and that it does not entail an unbearable workload for either teachers or students. The aspects proposed for assessment should take into account the time available for both teachers and students, the number of students, etc.

Proposals for the Implementation of Formative Assessment Processes in Higher Education.

Changes in the assessment processes in higher education should be introduced in a gradual manner. A sudden introduction of all the possible actions can only result in difficulties for teachers to implement them, overload of work due to inability to adapt to the workload these assessment systems entail, and difficulties for students to adapt to them due to lack of knowledge. The lack of training in these types of processes often leads to confusion about what it means to implement formative assessment processes, equating them with the simple fact of introducing mid-term tests or the submission of written work to grade students (Cañadas, 2018). Therefore, it is important to know concrete proposals for change that will gradually allow to transform the assessment systems at the university:

- **Analyze the competencies of the programs by assessing their typology:** The first step in order to change the way we evaluate is to analyze the competencies associated with our programs and subjects. In this way, we will be able to clearly determine what students should have developed by the end of a training process and, therefore, what set of assessment actions could be used to assess the degree of acquisition of such learning.
- **Programming teaching-learning assessment activities:** Another change is to put forward assessment activities integrated into the teaching and learning process that are not necessarily associated with grading processes, so that information can be collected to assess where students are at, what aspects need to be changed or improved, and to receive feedback (self or external) on their performance (López-Pastor, 2017). To this end, in an online learning context, synchronous assessment activities (questionnaires through apps, quiz games, debates, etc.) should be used to assess and discuss with

students where they are with respect to the learning objectives. In a context of face-to-face teaching, face-to-face and contextualized tasks should be carried out with students to analyze what they have learned with respect to what was expected at a given time and to give them feedback for improvement (Cano, 2008). The type of tasks need not vary from one context to another.

- **Balanced tasks in terms of work time for students and teachers:** One of the greatest challenges when starting to use formative assessment processes is the difficulty in balancing work time (Vallés, Ureña, & Ruíz, 2011). In most cases, there is a tendency to think that implementing formative assessment processes is the same as leaving students lots of homework, which on the one hand makes it difficult for students to perform correctly due to work overload, and on the other hand prevents teachers from giving their students adequate feedback that allows them to improve their learning. Therefore, there must be a proper planning of the activities that are formal in type and that will serve to record the students' performance accompanied by feedback processes, and those that are more informal in type that will serve to assess in a general way in the group-class how learning is taking place and provide feedback to the students during the process, trying to improve their learning overall, and not only their performance on a specific task.
- **Encourage the use of self-assessment and peer assessment activities:** It is important, first of all, to understand the students' experience in these processes in order to make decisions about the degree of autonomy we give them in the process. That is, if we give them more or less help (rubrics, specific indicators, etc.) to carry out their assessment. For this, when the students have not had previous work, we will start with processes where the assessment criteria are explained to

the students, and they are accompanied in their work, helping them identify the elements to be evaluated. Instruments such as assessment rubrics can be used, since they break down the assessment criteria into very specific, identifiable, and obvious aspects. As the subject gains experience in these practices, aids will be removed, and processes will be enabled where they are the ones developing the assessment criteria for specific tasks or activities to assess the performance of their peers. In addition, it should evolve from processes where students report on what was missing in a specific task to be correct to processes where they indicate what could have been done to improve it. Therefore, students cannot be launched out into these processes if there is no previous teaching process on how to perform them (Panadero & Alonso-Tapia, 2011).

In both online and face-to-face teaching contexts, the tools at our disposal should be used to encourage student participation in the assessment processes.

- **Openness to new assessment instruments and their use at different moments of the process:** One of the main elements of change must be the scheduling to use several assessment instruments throughout the process that allow for the assessment of competence acquisition to its fullest extent (Cano, 2008). There are numerous instruments that allow for the collection of evidence throughout the course. Currently, the incorporation of mobile applications in this process as facilitators of information gathering and student involvement in the process stands out.
- **Developing the assessment criteria and instruments together with the students:** In this process of granting autonomy to students, encouraging their participation, and developing self-regulation processes, students should be encouraged to develop together with teachers the assessment criteria for a specific task or for the

subject, and along with this, to participate in the development of the assessment instruments used for this purpose (Fraile, 2018). This can be done at the beginning of the course through an assembly with the students or, if the students do not have experience in this type of processes, it can be done gradually with the different activities carried out throughout the subject.

- **Use time at the beginning of the class to review what has been worked on previously and its relation to the learning objectives:** Dedicate a brief period of time at the beginning of the class to review what has been worked on in previous sessions (Monereo, 1990). For this purpose, procedures can be used that allow a joint participation of the whole class-group and that give an idea of what has been taken in up to that moment. In addition, this will allow students to make connections between what they have learned and what they are going to learn, leading to a more solid and lasting learning over time.

Conclusion

Research has shown the great usefulness of the formative assessment processes in higher education. The implementation of some or all of the elements presented in this work have been highlighted as relevant for the development of competencies and learning in the students in this context. Therefore, it is necessary to advance toward the use of these procedures in a systematic and planned manner in order to achieve the most formative environment possible. The aim is to decentralize the grading processes by focusing on improving learning to its fullest extent, only considering grades as the culmination of this process.

References

- Adachi, C., Tai, J., & Dawson, P. (2018). Academics' perceptions of the benefits and challenges of self and peer assessment in higher education. *Assessment & Evaluation in Higher Education*, 43(2), 294-306. <https://doi.org/10.1080/02602938.2017.1339775>
- Álvarez, J.M. (2003). *La evaluación a examen. Ensayos críticos*. Buenos Aires: Miño y Dávila.
- Álvarez, J.M. (2011). *Evaluar para conocer. Examinar para excluir*. Madrid: Morata.
- Andrade, H. (2019). A Critical Review of Research on Student Self-Assessment. *Frontiers in Education*, 4(87). <https://doi.org/10.3389/feduc.2019.00087>
- Barba-Martín, R.A., Bores-García, D., González-Calvo, G., y Hortigüela, D. (2020). Evaluación formativa con los estudiantes en prácticas para reducir la brecha teoría-práctica en la formación inicial del profesorado. *Educación Física y Deporte*, 39(1). <http://doi.org/10.17533/udea.efyd.v39n1a02>
- Benito, A., y Cruz, A. (2005). *Nuevas claves para la docencia universitaria en el Espacio Europeo de Educación Superior* Madrid: Narcea.
- Black, P., Harrison, C., Lee, C., Marshall, B., & Wiliam, D. (2002). *Working inside the black box: assessment for learning in the classroom*. London: King's College.
- Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. *Educational Assessment, Evaluation and Accountability*, 21(5). <https://doi.org/10.1007/s11092-008-9068-5>
- Boud, D., & Molloy, E. (2013). Rethinking models of feedback for learning: the challenge of design. *Assessment & Evaluation in Higher Education*, 38(6), 698-712. <https://doi.org/10.1080/02602938.2012.691462>
- Calderón, C., y Escalera, G. (2008). La evaluación de la docencia ante el reto del Espacio Europeo de Educación Superior. *Educación XX1*, 11, 237-256. <https://doi.org/10.5944/educxx1.11.0.316>
- Cano, E. (2008). La evaluación por competencias en Educación Superior. *Profesorado. Revista de Currículum y Formación de Profesorado*, 12(3), 1-16.
- Cañadas, L. (2018). *La evaluación formativa en la adquisición de competencias docentes en la formación inicial del profesorado de Educación Física. Tesis Doctoral Inédita*. Madrid: Universidad Autónoma de Madrid.
- Cañadas, L., Santos-Pastor, M.L., y Castejón, F.J. (2018a). Evaluación en la formación inicial: ¿avance o retroceso? *Bordón, Revista de Pedagogía*, 70(4), 9-22. <https://doi.org/10.13042/Bordon.2018.64434>
- Cañadas, L., Santos-Pastor, M.L., y Castejón, F.J. (2018b). Desarrollo de Competencias Docentes en la Formación Inicial del Profesorado de Educación Física. Relación con los Instrumentos de Evaluación. *Estudios Pedagógicos*, 44(2), 111-126. [10.4067/S0718-07052018000200111](https://doi.org/10.4067/S0718-07052018000200111)
- Cañadas, L., Santos-Pastor, M.L., y Castejón, F.J. (2020). Competencias del profesorado de Educación Física y valoración en la práctica profesional. *Apunts. Educación Física y Deporte*, 139, 33-41. [https://doi.org/10.5672/apunts.2014-0983.\(2020/1\).13905](https://doi.org/10.5672/apunts.2014-0983.(2020/1).13905)
- Castejón, J., Capllonch, M., González-Fernández, N., y López-Pastor, V.M. (2009). Técnicas e instrumentos de evaluación formativa y compartida para la docencia universitaria. En V.M. López-Pastor. (coord.). *Evaluación formativa y compartida en educación superior* (pp. 65-91). Madrid: Narcea.
- Dolin, J., Black, P., Harlen, W., & Tiberghien, A. (2018). Exploring Relations Between Formative and Summative Assessment. In J. Dolin & R. Evans (Ed). *Transforming Assessment* (pp. 53-80). Cham, Switzerland: Springer International Publishing.
- Efkliides, A. (2011). Interactions of metacognition with motivation and affect in self-regulated learning: The MASRL model. *Educational Psychologist*, 46(1), 6-25. <https://doi.org/10.1080/00461520.2011.538645>
- Fraile, J. (2018). *La autoevaluación en el Grado de Ciencias de la Actividad Física y del Deporte: concepciones y práctica de los docentes. Tesis Doctoral Inédita*. Madrid: Universidad Politécnica de Madrid.
- Frey, N., & Fisher, D. (2011). *The formative assessment action plan. Practical Steps to More Successful Teaching and Learning*. Estados Unidos: ASCD.
- Frost, J., De Pont, G., & Brailsford, I. (2012). Expanding assessment methods and moments in history. *Assessment & Evaluation in Higher Education*, 37(3), 293-304. <https://doi.org/10.1080/02602938.2010.531247>
- Gallardo-Fuentes, F., López-Pastor, V.M., y Carter-Thuillier, B. (2018). Efectos de la Aplicación de un Sistema de Evaluación Formativa en la Autopercepción de Competencias Adquiridas en Formación Inicial del Profesorado. *Estudios pedagógicos*, 44(2), 55-77. <http://dx.doi.org/10.4067/S0718-07052018000200055>
- García, M.P., y Morillas, L.R. (2011). La planificación

- de evaluación de competencias en Educación Superior. *REIFOP*, 14(1), 113-124.
- Gibbs, G., & Simpson, C. (2004). Conditions under which assessment supports students' learning. *Learning and Teaching in Higher Education*, 1, 3-31. Recuperado de: <http://eprints.glos.ac.uk/3609/> el 20 de abril de 2020.
- Good, R. (2011) Formative Use of Assessment Information: It's a Process, So Let's Say What We Mean. *Practical Assessment, Research, and Evaluation*, 16(3). <https://doi.org/10.7275/3yvy-at83>
- Grau, S., y Gómez, M. C. (2010). La evaluación, un proceso de cambio para el aprendizaje. En M.C. Gómez., y S. Grau. (Coords). *Evaluación de los aprendizajes en el Espacio Europeo de Educación Superior* (pp. 17-33). Alicante: Universidad de Alicante.
- Hamodi, C. (2014). *La evaluación formativa y compartida en Educación Superior: un estudio de caso*. Valladolid: Universidad de Valladolid. Tesis inédita.
- Hamodi, C. (2016). Terminología básica sobre evaluación del aprendizaje. En C. Hamodi. (Coord). *Formar mediante la evaluación en la Universidad. Propuestas prácticas útiles para docentes* (pp. 23-33). Valladolid: Ediciones de la Universidad de Valladolid.
- Heritage, M. (2010). *Formative Assessment: Making it happen in the classroom*. Estados Unidos: SAGE.
- Hortigüela., D., Fernández-Río, J., Castejón, J. & Pérez-Pueyo, A. (2017). Formative assessment, work regulation, organization, engagement, tracking and attendance in Spanish Universities. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 20(3), 49-63. <http://dx.doi.org/10.6018/reifop.20.3.268681>
- Hortigüela, D., Palacios-Picos, A., & López-Pastor, V.M. (2019). The impact of formative and shared or co-assessment on the acquisition of transversal competences in higher education. *Assessment & Evaluation in Higher Education*, 44(6), 933-945. <https://doi.org/10.1080/02602938.2018.1530341>
- Ibarra, M.S., Rodríguez, G. y Gómez, M. A. (2012). La evaluación entre iguales: beneficios y estrategias para su práctica en la universidad. *Revista de Educación*, 359, 206-231. <https://doi.org/10.4438/1988-592X-RE-2011-359-092>
- Knight, P. (2006). The local practices of assessment. *Assessment and Evaluation in Higher Education*, 31(4), 435-452. <https://doi.org/10.1080/02602930600679126>
- Li, L. (2017). The role of anonymity in peer assessment. *Assessment & Evaluation in Higher Education*, 42(4), 645-656. <https://doi.org/10.1080/02602938.2016.1174766>
- Li, L., Liu, X., & Steckelberg, A.L. (2010). Assessor or assessee: How student learning improves by giving and receiving peer feedback. *British Journal of Educational Technology*, 41(3), 525-536. <https://doi.org/10.1111/j.1467-8535.2009.00968.x>
- López-Pastor, V.M. (2006). El papel de la evaluación formativa en el proceso de convergencia hacia el E.E.E.S. Análisis del estado de la cuestión y presentación de un sistema de intervención. *Revista Interuniversitaria de Formación del Profesorado*, 20(3), 93-119
- López-Pastor, V.M. (2008). Desarrollando sistemas de evaluación formativa y compartida en la docencia universitaria. Análisis de resultados de su puesta en práctica en la formación inicial del profesorado. *European Journal of Teacher Education*, 31(3), 293-311. <https://doi.org/10.1080/02619760802208452>
- López-Pastor, V. M. (Coord.) (2009). *La evaluación Formativa y Compartida en Educación Superior: propuestas, técnicas, instrumentos y experiencias*. Madrid: Narcea.
- López-Pastor, V.M. (2012). Evaluación Formativa y Compartida en la Universidad: Clarificación de Conceptos y Propuestas de Intervención desde la Red Interuniversitaria de Evaluación Formativa. *Psychology, Society & Education*, 4(1). <http://dx.doi.org/10.25115/psye.v4i1.485>
- López-Pastor, V. M. (2017). Evaluación formativa y compartida: evaluar para aprender y la implicación del alumnado en los procesos de evaluación y aprendizaje. En V.M. López-Pastor & Á. Pérez-Pueyo (Coords). *Evaluación formativa y compartida en educación: experiencias de éxito en todas las etapas educativas* (pp. 34-68). León: Universidad de León.
- López-Pastor, V.M., Barba-Martín, J.J., Monjas-Aguado, R., Manrique-Arribas., Heras-Bernardino, C., González-Pascual, M., y Gómez-García, J.M. (2007). Trece años de Evaluación Compartida en Educación Física. *Revista Internacional en Medicina y Ciencias de la Actividad Física y el Deporte*, 7(26), 69-86.
- López-Pastor, V.M., y Sicilia Camacho, A. (2017). Formative and shared assessment in higher education. Lessons learned and challenges for the future. *Assessment & Evaluation in Higher Education*, 42(1), 77-97. <https://doi.org/10.1080/02602938.2015>

- 1083535
- Lukas, J.F., & Santiago, K. (2004). *Evaluación Educativa*. Madrid: Alianza Editorial.
- McDowell, S. (2020). Asynchronous Online Assessment of Physical Chemistry Concepts in the Time of COVID-19. *Journal of Chemical Education*, 97, 3256-3259. <https://dx.doi.org/10.1021/acs.jchemed.0c00611>
- Monereo, C. (1990). Las estrategias de aprendizaje en la Educación Formal: enseñar a pensar y sobre el pensar. *Infancia y Aprendizaje*, 50, 3-25.
- Moss, C.M., & Brookhart, S.M. (2019). *Advancing Formative Assessment in Every Classroom: A Guide for Instructional Leaders*. United States: ASCD
- Nic Dhonncha, E., & Murphy, M. (2020). Learning new ways of teaching and assessment: the impact of COVID-19 on undergraduate dermatology education. *Clinical and Experimental Dermatology*. <https://doi.org/10.1111/ced.14364>
- Nicol D.J. & Macfarlane-Dick, D. (2004). *Rethinking Formative Assessment in HE: a theoretical model and seven principles of good feedback practice*. http://www.heacademy.ac.uk/assessment/ASS051D_SENLEF_model.doc
- Nicol, D.J., & Macfarlane-Dick, D. (2006). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199-218. <https://doi.org/10.1080/03075070600572090>
- Panadero, E., y Alonso-Tapia, J. (2011). El papel de las rúbricas en la autoevaluación y autorregulación del aprendizaje. En K. Bujan., I. Rekalde., y P. Aramendi. (Eds). *La evaluación de competencias en la Educación Superior, Las rúbricas como instrumento de evaluación*. Madrid: Eduforma.
- Panadero, E., Alonso-Tapia, J., & Huertas, J.A. (2011). Rubrics and self-assessment scripts effects on self-regulation, learning and self-efficacy in secondary education. *Learning and Individual Differences*, 22(6), 806-813. <https://doi.org/10.1016/j.lindif.2012.04.007>
- Panadero, E., Fraile, J., Fernández-Ruiz, J., Castilla-Estévez, D., & Ruiz, M.A. (2019). Spanish university assessment practices: examination tradition with diversity by faculty. *Assessment & Evaluation in Higher Education*, 44(3), 279-295. <https://doi.org/10.1080/02602938.2018.1512553>
- Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-regulated learning and self-efficacy: Four meta-analyses. *Educational Research Review*, 22, 74-98. <https://doi.org/10.1016/j.edurev.2017.08.004>
- Popham, W.J. (2013). *Evaluación trans-formativa. El poder transformador de la evaluación*. Madrid: Narcea.
- Prince, D. J., Fulton, R. A. & Garsombke, T. W. (2009). Comparisons of proctored versus non-proctored testing strategies in graduate distance education curriculum. *Journal of College Teaching & Learning*, 6(7), 51-63. <https://doi.org/10.19030/tlc.v6i7.1125>
- Rodríguez, G., e Ibarra, M. S. (2011). *E-Evaluación orientada al e-aprendizaje estratégico en Educación Superior*. Madrid: Narcea.
- Rodríguez, G., Ibarra, M. S. y García, E. (2013). Autoevaluación, evaluación entre iguales y coevaluación: Conceptualización y práctica en las universidades españolas. *Revista de Investigación en Educación*, 11(2), 198-210.
- Rodríguez, P., y Luzardo, M. (2020). Cómo Asegurar Evaluaciones Válidas y Detectar Falseamiento en Pruebas a Distancia Síncronas. *RIDU. Revista Digital de Investigación en Docencia Universitaria*, 14(2), e1240. <https://doi.org/10.19083/ridu.2020.1240>
- Romero, M.R., Castejón, F.J., López-Pastor, V.M., y Fraile-Aranda, A. (2017). Evaluación formativa, competencias comunicativas y TIC en la Formación del Profesorado. *Comunicar*. 52(3), 73-82. <https://doi.org/10.3916/C52-2017-07>
- Ruiz-Primo, M.A. (2011). Informal formative assessment: The role of instructional dialogues in assessing students' learning. *Studies in Educational Evaluation*, 37, 15-24. <https://doi.org/10.1016/j.stueduc.2011.04.003>
- Sambell, K., McDowell, L., & Montgomery, C. (2013). *Assessment for Learning in Higher Education*. Abingdon, U. K.: Routledge.
- Stiggins, R., & Chappuis, J. (2005). Using Student-Involved Classroom Assessment to Close Achievement Gaps. *Theory Into Practice*, 44(1), 11-18. https://doi.org/10.1207/s15430421tip4401_3
- Tillema, H.H., & Smith, K. (2009). Assessment orientation in formative assessment of learning to teach. *Teachers and Teaching: theory practice*, 15(3), 391-405. <https://doi.org/10.1080/13540600903056726>
- Vallés, C., Ureña, N., y Ruiz, E. (2011). La Evaluación Formativa en Docencia Universitaria. Resultados globales de 41 estudios de caso. *REDU. Revista de Docencia Universitaria*, 9(1), 135-158.
- Villardón, L. (2006). Evaluación del aprendizaje para promover el desarrollo de competencias. *Educatio*

- siglo XXI*, 24, 57-76.
- Walker, M. (2013). Feedback and Feedforward. Student responses and their implications. *En*: S. Merry., M. Price., D. Carless., & M. Taras (Eds). *Reconceptualising Feedback in Higher Education. Developing Dialogue with Students* (pp. 103-113). Estados Unidos: Routledge.
- Wiliam, D., & Leahy, S. (2015). *Embedding formative assessment: Practical techniques for K-12 classrooms*. West Palm Beach, FL: Learning Sciences International.
- Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. *En* M. Boekaerts, P. R. Pintrich & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-40). San Diego, CA: Academic Press.