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UNIVERSITY STUDENTS' SELF-ASSESSMENT: LITERATURE REVIEW¹

*La autoevaluación del estudiante universitario:
revisión de la literatura*

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ABSTRACT

The Bologna Declaration of 1999 promoted different changes in higher education in Europe and around the world, including the transformation of learning assessment. Therefore, self-assessment has been considered one of the ways to innovate the assessment process. Research carried out on it has mainly focused on analyzing its

1. This article is a product of the doctoral dissertation *Self-assessment as a component of the didactic (teaching) system: its formative purposes in higher education*, funded by Colciencias (currently Minciencias), call 727 of 2015.

advantages and disadvantages and on comparing students' and teachers' grades. Thus, the purpose of this study was to establish the state of the art of self-assessment of learning in higher education through a review of the existing literature. Self-assessment was approached from didactics (teaching-learning process), understood as a complex system with its components: the problem, the objectives, the contents, the methods, the means, the form (time and space), the assessment and the self-assessment. The bibliographic search was performed on sources of academic and scientific information: databases on education, repositories, and local library systems. Products from research carried out between 2006 and 2020, in English, Spanish and Portuguese, were considered, selecting a total of 69 studies that fulfilled the established inclusion criteria. Three trends were identified in them: 1) the relationship among assessment, self-assessment, and learning; 2) self-assessment in favor of learning for the development of students' abilities; 3) self-assessment and measurement of learning. Based on the results obtained, the need to carry out studies that analyze self-assessment in relation to didactic components is evident; from humanistic didactics, by recognizing students as a human being, believing in, and guiding them towards lifelong learning. More in-depth international studies are recommended, particularly in the Latin American context and with interpretative approaches.

Key words: self-assessment; learning; student-teacher; teaching; higher education; university; literature review.

RESUMEN

La Declaración de Bolonia de 1999 impulsó diferentes cambios en la educación superior en Europa y en el mundo, entre los cuales fue la transformación de la evaluación de los aprendizajes. Por lo tanto, la autoevaluación ha sido considerada una de las vías de innovar el proceso evaluativo. Las investigaciones realizadas sobre ella se han centrado principalmente en analizar sus ventajas y desventajas y en comparar las calificaciones del estudiante y el profesor. Así, el objetivo del presente estudio consistió en establecer el estado de la cuestión acerca de la autoevaluación del aprendizaje en educación superior por medio de una revisión de la literatura existente. La autoevaluación se abordó desde la didáctica, entendida esta como un sistema complejo con sus componentes: el problema, los objetivos, los contenidos, los métodos, los medios, la forma (tiempo y espacio), la evaluación y la autoevaluación. La búsqueda bibliográfica se realizó en fuentes de información académica y científica: bases de datos en educación, repositorios y sistemas de bibliotecas locales. Se consideraron productos de investigaciones realizadas entre 2006 y 2020, en inglés, español y portugués, seleccionándose un total de 69 estudios, que cumplieron con los criterios de inclusión establecidos. En ellos se identificaron tres tendencias: 1. la relación entre evaluación, autoevaluación y aprendizaje; 2. la autoevaluación en pro del aprendizaje para el desarrollo de capacidades de los estudiantes; 3. la autoevaluación y la medición del aprendizaje. A partir de los resultados obtenidos, se evidencia la necesidad de realizar estudios que analicen la autoevaluación en relación con los componentes didácticos; desde una didáctica humanista donde el estudiante se

reconoce cómo un ser humano, se cree en él y se orienta hacia un aprendizaje a lo largo de la vida. Se recomiendan más estudios internacionales en profundidad, en el contexto latinoamericano particularmente y con enfoques interpretativos.

Palabras clave: autoevaluación; aprendizaje; estudiante-profesor; enseñanza superior, universidad; revisión de literatura.

1. INTRODUCTION

Self-assessment as a concept used in education, specifically in learning, first appears between the 1930s and 1940s, when the first research on it was conducted, mainly in the United States (Brew, 1995). As a result of the student-centered curriculum reform processes in the United Kingdom, Australia, Norway, and Sweden in the late 1970s (Gairin, 1997) and the «discourses on student autonomy and independence in the 1970s and 1980s [which] caused a rift between tutors and students» (Taras, 2015, p. 3), self-assessment of learning gained importance and aroused research and academic interest. Since the 1990s, it began to be applied more frequently in university classrooms (Boud, 1995), although more so in some countries than others.

Over the past 30 years, there has been a great amount of research focused on self-assessment of learning. The classic works of Boud and Falchikov (1989) and Falchikov and Boud (1989) analyzed the existing studies on self-assessment up to that moment, where quantitative methodologies prevailed, with the purpose of demonstrating how close students' self-assessment, expressed in numbers, was to the assessment made by their teachers. They also sought to discover the impact of different variables on self-assessment, such as, age, semester at university, sex. Most subsequent research, including current research, continues the same trend of measurement and contrast.

In short, the existing literature has focused mainly on analyzing self-assessment based on its validity and reliability and on the search for aspects that influence it. However, other important elements that could favor a better understanding and, therefore, application in the university classroom, have been left aside. In this sense, it is also important to note that, although higher education institutions conduct self-assessment as a mandatory requirement for accreditation, students' self-assessment of learning is not a requirement since it is occasional and voluntary. This leads to the question: should not self-assessment rather be planned, systematic, and intentional as part of the teaching-learning process [object of study of didactics] where teachers have the essential role of motivating and promoting its application (Kambourova, 2020)?

Thus, the main objective of this study is to establish the state of the art on self-assessment of learning in higher education by means of a literature review. In this study, self-assessment is analyzed from a different perspective. On the one hand, in relation to assessment, objectives, contents, and teaching methods, which are

recognized components of the educational system; on the other hand, as part of a humanistic didactics, by recognizing and respecting students as human beings whom teachers guide in the process of developing their abilities for lifelong learning. This review can be a guide for teachers in general, and university teachers, in particular, in understanding the dimensions of self-assessment in current research, looking to different ones in the future. It could also be a subject of deep reflection leading to transformations in the pedagogical practices of teachers.

2. METHOD

2.1. Search process and selection of research

This study identified literature review as the most appropriate methodology to discover research trends regarding self-assessment of learning as a didactic component as well as to contribute to the discussion of scientific production in this field.

The electronic search of the material was carried out under the following parameters:

- descriptors: the terms *didactics*, *self-assessment*, *learning*, and *higher education* were modified by *classroom techniques*, *assessment methods*, *learning*, and *higher education*, according to the UNESCO Thesaurus (Figure 1);
- publication period: January 2006 - September 2020;
- languages consulted: Spanish, English, and Portuguese;
- types of documents: research articles published in specialized journals, master's theses, doctoral dissertations, and papers in academic events.

FIGURE 1
Cloud of descriptors in Spanish, English, and Portuguese



Source: Prepared by the author

Three types of digital sources were consulted:

1. Bibliographic databases for education, available from the Universidad de Antioquia *WOS, SCOPUS, Bibliotechnia, Cambridge Journals, Dialnet, DOAJ, EBSCO, ERIC, HAPI, JSTOR, APA PsycNet, Librisite, OECD, Scielo, Science-Direct, Web of Science, and EBSCO Wilson*; search engines and databases accessible from the Internet: *Redalyc, AERA, Latindex, Google Scholar*.
2. Repositories of national and international universities. First group: *Universidad Pedagógica Nacional, Pontificia Universidad Javeriana, and Universidad Nacional de Colombia* (chosen for their recognition and for having faculties of Education), in addition to the publications of the Didactics for Higher Education research group (abbreviated DIDES in Spanish), available on the *Gruplac* website from Minciencias. Second group (chosen by previous references of works suitable for research): *Universidad Autónoma de Madrid* (Spain), *St. Catherine University* (United States) and four universities in Portugal: *Universidade de Minho, Universidade de Porto, Universidade de Tras-os-Montes e Alto Douro, and Universidade Aberta*.
3. Library catalogues of the Universidad de Antioquia: *general digital library and Documentation Center of the Faculty of Education*; electronic books in the field of education and social sciences.

The search was conducted in three stages: between August and September 2016, then in September 2018, and September 2020. The descriptors were used in various combinations and in their respective translations into English and Portuguese. Reading the titles and, when required, the abstracts was the first step in the selection. In the systematic review, 5894 titles and/or abstracts were analyzed in the search engines and databases, and 2060 in other sources (Table 1).

TABLE 1
 Number of research products reviewed, by source of consultation

Reviewed materials	Total
Articles in databases and search engines	5894
Graduate products from Universidad de Antioquia	467
Books, articles, theses in the library catalog of Universidad de Antioquia	123
Graduate products and repositories from other universities	1600
Total	8084

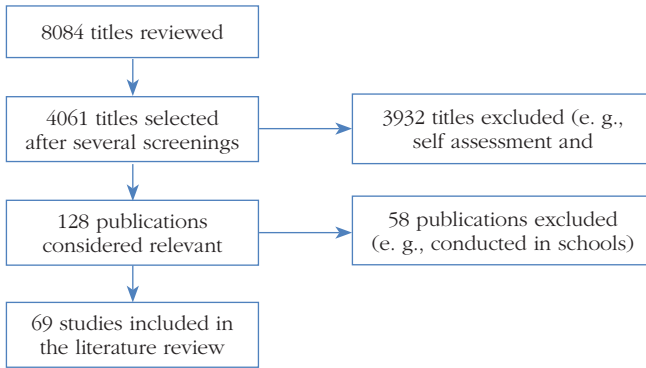
Source: Prepared by the author

Following several screenings, 4061 documents² were selected of which 128 were identified as relevant. A total of 59 of these 128 documents were excluded for various reasons: 21 were only general reflections or conclusions; 15 specifically explored rubrics, portfolios, or other self-assessment instruments; 22 were conducted in primary and/or secondary education (including 12 published in Portuguese); 1 focused only on self-assessment methods. However, it should be clarified that some articles regarding experiences in self-assessment, with research elements, were considered part of the study.

Furthermore, other inclusion criteria were considered. The study was required to investigate evaluative practices, perceptions of teachers and students about self-assessment, include the application of formative and/or summative self-assessment for learning and assess its effects, as well as evidence some relationship between self-assessment and other components of the didactic system.

In short, after reading and analyzing their full texts, 69 articles were chosen (Figure 2). For each article, general information was collected: author, university, title, country, date, language of publication, area in which the study was conducted, source of location. In addition, an index card was prepared for each article providing general data and specific aspects of the content: research question, objectives, hypotheses, theoretical framework, methodology, results, relevant bibliography, and observations.

FIGURE 2
Flowchart on the literature review



Source: Prepared by the author

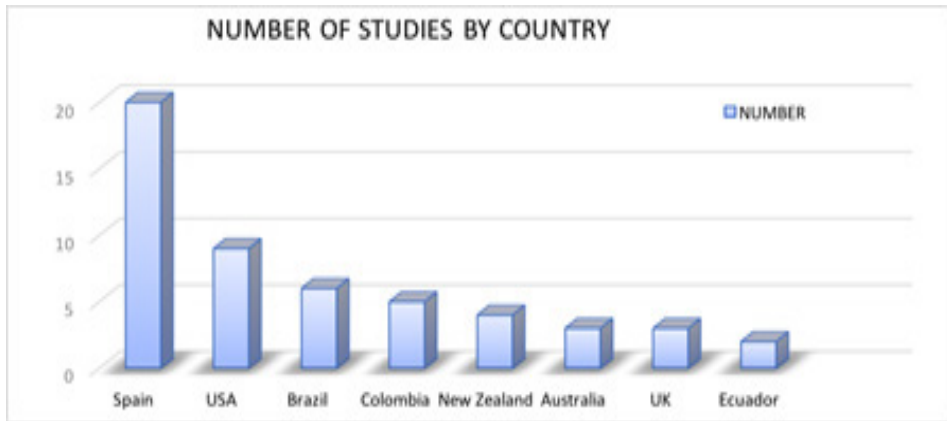
2. Many documents addressed self-assessment and accreditation of universities or programs, as well as self-assessment to evaluate organizational and personal competencies; therefore, as they were not of interest to this review (according to the established criteria), they were excluded.

3. RESULTS

3.1. Introduction

The highest rate of publication of the articles studied was in 2015, when eight articles appeared, followed by 2011, 2012, and 2013, with seven articles for each respective year. On average, four to five self-assessment studies were conducted and disseminated each year. Regarding the geographical location of publications, all continents are represented according to the corresponding countries (Figure 3). European countries include Spain (20)³, United Kingdom (3), Netherlands, Ireland, Hungary, Romania, Macedonia, Finland, and Turkey; from North and South America: United States (9), Brazil (6, one shared with Spain), Colombia (5), Ecuador (2), Mexico, Trinidad and Tobago; from Africa: Botswana, Egypt, and South Africa; from the rest of the world there are contributions from Qatar, Malaysia, Singapore, Japan, Hong Kong, Australia (3), and New Zealand (4).

FIGURE 3
Number of studies by country with more than one study



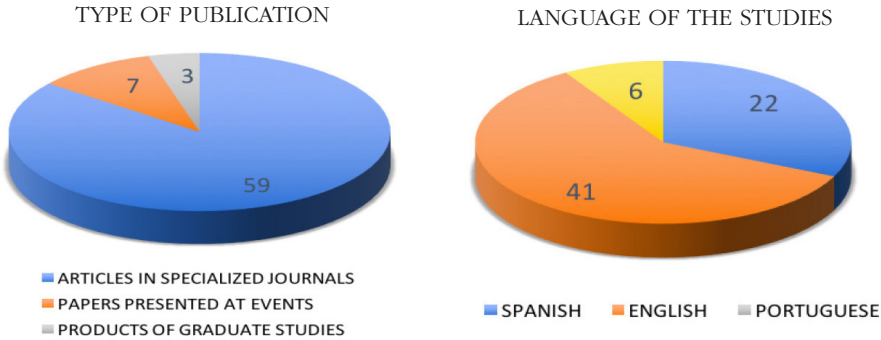
Source: Prepared by the author

Most of the documents were found in the following databases: *Google Scholar*, 20; *EBSCO*, 14; *ERIC*, 12; *Science Direct*, 7; *Dialnet*, 8; the rest corresponds to other

3. The number in parentheses represents a figure greater than one of the articles published by the respective country. Unnumbered countries correspond to one (1) publication.

databases. Of the 69 studies, 59 are published in specialized journals, 7 are papers presented at academic educational events, and 3 are products of graduate studies (2 for master's and 1 for doctorate degrees⁴), (Figure 4). In terms of language, most of the studies are written in English (41), followed by Spanish (22) and Portuguese (6) (Figure 5). The fields that accounted for most publications were education (20), nursing and administration (5 each), languages (4), psychology (3), other fields (29) (engineering, architecture, exact sciences, medicine, etc.), and 3 general publications as literature review.

FIGURES 4 AND 5
Number of selected articles by type and language of publication



Source: Prepared by the author

3.2. *Research content analysis*

Before analyzing the results of the studies, the main research categories of all the articles are underlined. Among the objectives proposed in the studies, some similarities were identified regarding their research questions. Some focused on characterizing evaluative practices and knowing students 'and teachers' perceptions and beliefs about self-assessment; others on analyzing the impact of self-assessment on student learning, and the rest on comparing teachers 'and students' grades to measure the accuracy of self-assessment.

4. Although the mentioned doctoral dissertation uses self-assessment instruments and presents some data from schools, the work was included in the review for the contributions of the theoretical framework, which was analyzed in this study.

Most of the studies correspond to quantitative methodologies ($N = 30$), for example, with experimental and control groups, with quasi-experimental design of pre-test and post-test, and meta-analysis. To a lesser extent, research with qualitative methodology ($N = 25$) was found. Among them, there are several case studies, including multiple case studies, action research, interpretive designs from critical theory, hermeneutics, and phenomenology. Only a small number were constituted by the experiences ($N = 4$), studies with mixed methodology ($N = 7$), and literature reviews ($N = 3$). The most common techniques used for data collection were surveys based on questionnaires or rubrics, followed by interviews, focus groups, document analysis, writing as a form of self-assessment, among others.

On the other hand, the conceptual framework category was used to look at how self-assessment is defined, since there are several definitions that sometimes lead to misunderstandings, i.e., when talking about self-assessment, not everyone understands it in the same way (Leach, 2012). Thus, for Boud and Falchikov (1989), self-assessment is «the ability of students to judge their own learning, particularly their achievements and outcomes» (p. 529). Boud broadens the concept, saying that it is «the involvement of students in identifying the standards and/or criteria to be applied in their work, and in making decisions about the extent to which they have achieved these standards and criteria.» (1991, p. 5, as cited in Boud, 1995, p. 12).

«Self-assessment is the qualitative evaluation of the performance and the final product obtained based on assessment criteria», according to Panadero (2011, p. 78). Thus, the important thing is the process, which requires time and support, not only the outcome. The author mentions two «theoretical aspects»: the first is the instructional process, from the pedagogical point of view, and the second is the self-regulated process of the student, which are united as follows: «the use of the instructional strategy will have the objective of training the internal self-regulatory process (p. 78).

There are similarities with the conceptualization of self-assessment by the authors mentioned above. Students as individuals are given importance to assess their learning, the criteria they develop, the comparison of what was planned and what was achieved in the learning process, and the presence of teachers, who support the process. In other words, it is a matter of self-assessment, but always supported and guided by someone else, until autonomy is achieved.

Therefore, it can be noticed that self-assessment establishes relationships with the educational purposes (the objectives), which are achieved through specific contents and methods. In addition, it relies on teachers to guide students' learning process, who plan the activities and the assessment to lead to education from the didactic point of view.

These categories were analyzed together with the results of the research and revealed three trends in self-assessment of learning. The objectives were a guideline

for this grouping, but they did not constitute strict criteria to form them, since there is not necessarily a direct relationship between objective and trend. In this literature review, each study was placed only in one of the trends.

With 20 studies, the first trend is called *self-assessment in relation to assessment and learning*. These studies looked at student participation in assessment through self-assessment (some included peer assessment as well), and at the forms of assessment carried out in universities, the scope, and drawbacks of self-assessment.

With 29 studies, the second trend is called *self-assessment in favor of learning for the development of abilities*. It is closely related to the previous trend because the aim of exploring self-assessment was to identify the extent to which it was advantageous or disadvantageous for students' learning. Thus, the studies in this line refer to the formative purposes of self-assessment in learning. The latest research trend, called *self-assessment and measurement of learning*, includes 20 studies, which sought to confirm the validity and reliability of self-assessment.

At this point, it is worth noting that there is a certain similarity between the grouping of research on self-assessment developed in this review and that conducted by Boud and Falchikov (1989), which is explained by Nulty (2011). Nulty states that when reading current literature, the classification of Boud and Falchikov, divided into three titles, «conceptual, practical qualitative, and quantitative still seems to be valid.» (p. 495). The author further expresses the following (*idem*, italics from the original):

Examples of publications with important conceptual content (those with a theoretical component) include Andrade and Du (2007), Boud (1998), Heron (1981, 1988), O'Donovan, Price and Rust (2004), and Rust, Price and O'Donovan (2003). The term *practical qualitative* is perhaps ambiguous. Publications with this name are 'practical' because they provide details of critical factors for the effective implementation of both self-assessment and peer assessment. They are 'qualitative' in the sense that they describe how a self-assessment or peer assessment can be conducted. Examples include Ballantyne, Hughes, and Mylonas (2002) and Boud (1991 and 1995).

Quantitative publications mainly focus on three sub-areas:

(1) The *effectiveness of the technique* as a learning or assessment tool, e.g., Berg, Admiraal, and Pilot (2006); Boud and Falchikov (1989); Falchikov and Boud (1989); Liu and Carless (2006); McDonald and Boud (2003); Orsmond, Merry, and Reiling (1996, 1997, 1998, 2000, 2002); Orsmond, Price, and Rust (2004).

(2) *Students' opinions and experiences about it*, e.g., Andrade and Du (2007); Bloxham and West (2004, 2007); Cassidy and Weinberg (2005); Cheng and Warren (1997); Gayle, Martin, and McQueen (2002); Lejk and Wyvill (2002); Mok *et al.* (2006); Vu and Dall'Alba (2007).

(3) *Correlations between student assessments and grades reported by academic staff*: Cassidy (2007), Falchikov and Goldfinch (2000), Gruppen *et al.* (1997), Hafner and Hafner (2003), Lejk and Wyvill (2001a, 2001b), Magin (1993, 2001a, 2001b), Magin and Churches (1988), Magin and Helmore (2001).

It was considered significant to mention the above citation for the following reasons: 1. to broaden the readers' view of studies prior to this review; 2. to point out that trends in self-assessment research remain relatively in the same directions; 3. to compare how Boud and Falchikov (1989) classified the studies, from Nulty's (2011) perspective, with the way they were classified in this review; 4. to confirm the prevalence of the application of quantitative methodologies for self-assessment research.

3.3. Trends

3.2.1. First trend: self-assessment in relation to assessment and learning

Student participation in assessment can be achieved through self-assessment and/or peer assessment. The study by Inda *et al.* (2008) revealed that participation generally produces better and more satisfying results than when traditional assessment is used and results in «active, procedural, practical, and authentic learning». (Souto *et al.*, 2020, p. 29). Fernandez and Vanga (2015) noted the functional nature of the process of self-assessment, co-assessment, and hetero-assessment, which was designed to characterize student behavior and improve student performance.

Student participation in assessment is key. It is both formative and summative, as expressed by Fraile and Moreira (2013). By allowing participation, teachers express the confidence and respect they have for students in their ability to self-assess, which motivates them to be more responsible and objective with their learning (Hale, 2015). For Siles-González and Solano-Ruiz (2016), using self-assessment is very important, but the process of incorporating it is slow and complex; it must be carried out in steps, as it is slowed down by the predominant culture of summative assessment (traditional).

Lopes (2018) noted that using self-assessment provides the student with the opportunity to play a leading role, as a form of self-knowledge, but this must be done together with their teachers. The application of self-assessment should start from the first year of university. In this way, teachers should promote it to develop such ability in students, since there are many benefits, but these are not automatic, as demonstrated by Nulty (2011) and corroborated by Hale (2015). Another of the results presented in Nulty's (2011) study indicates that teachers avoid using self-assessment because students do not know how to do it, but Canney's (2014) findings contradict this, since when exploring teachers' beliefs, the idea of students' lack of capacity to carry out the self-assessment process is not present.

The relationship between the teachers' role and students' self-assessment is very close, not only for the benefit of learning but also for teaching. Nulty (2011) states that self-assessment and peer assessment empower students as well as teachers'

professional practice and continuous learning after graduation; they are practices that students integrate into their ways of thinking, acting, and applying throughout their lives. Similarly, Duers (2017) states that by allowing students to be part of the construction of assessment criteria, which are used in their favor, teachers fulfill their responsibility to provide tools for future learning.

In this regard, both teachers and students benefit from self-assessment, but equally, both must prepare to carry it out, as demonstrated by the results of Souto *et al.* (2020), since, on the one hand, students express doubts about their ability to adequately judge their work and that of others, and on the other, teachers base themselves on a basic notion that they must deepen and improve. Therefore, they require specific prior training to guarantee the adequate development of self-assessment in the classrooms.

An interesting aspect that is evident in the study of Capellato *et al.* (2020) has to do with the active didactic strategies employed in the teaching-learning process, particularly the case study. Such strategies, combined simultaneously with the application of self-assessment and peer assessment, are one way of enhancing critical competency in students. In other words, there is a connection between method, assessment, and self-assessment within the didactic system.

On the other hand, the results of the Brazilian researchers' study also show that in self-assessment most of the group graded themselves better than the average score. This fact addresses the issue of subjectivity in self-assessment, which leads to reflection on the close relationship between the assessment performed by the «self» and by the other (teacher, peer, external assessor). The authors, based on other sources, assert that the subjective choices of an individual arise from social experiences, that is, an assessment (by peers) is derived from a reference that presupposes personal experiences on a given content. Therefore, subjectivity is variable, it is modified according to what individuals experience. This means that it is necessary to have both assessment and self-assessment (not as an option) in the teaching-learning process to allow the development of each subject that is part of the process and to «balance» what is subjective, given that this never disappears in an evaluative act.

In this sense, is self-assessment still not strongly present in the classroom because of its subjectivity or for other reasons? The overall results of Canney's (2014) study show that teachers' beliefs about the purpose of self-assessment are positive, but the author suggests that they are not always a reflection of their practices.

The study by Rua *et al.* (2007) found that teachers claimed to use self-assessment in their classes, but not for the purpose of feedback; however, what other purposes could self-assessment serve? The authors wondered. Perhaps the following: Canney (2014) found a preponderance of self-assessment as self-grading, that is, both students and teachers are more interested in getting a grade than in reflecting on the process.

Vieira and Lima (2019) inquired about the instruments, frequency, and teachers' conceptions about assessment, as expressed in the relationship between discourse and assessment practice. According to the authors, one of the surprising results is that self-assessment is the second most used instrument by the 7 teachers who participated in their research sample. The authors assume that «the teachers involved are overcoming uncertainty about the maturity of students in self-assessment and the degree of accuracy of this instrument.» (Vieira and Lima, 2019, p. 1120). Although the general results of the study aim at a procedural and continuous evaluative practice, it has not yet achieved a mediation role. This is a sign of the teachers' incipient awareness to assume their role as an educator in the teaching-learning process. Through self-assessment, as one of many paths, teachers can provide environments where students can develop lifelong learning capabilities. When this is not yet the case, it is a cause for concern since «the evaluative practice of teachers is eventually imposed as a model to follow, in a cyclical relationship of influence that affects not only the future teachers, but also the future students of these future professionals, restarting the cycle. (Vieira and Lima, 2019, p. 1105).

Other studies have shown that the traditional form of assessment prevails in university classrooms (Álvarez *et al.*, 2011; Cabrales, 2010; Rúa *et al.*, 2007; San Martín *et al.*, 2016). Likewise, it was found that course programs do not include self-assessment and that it is not, or is applied very little (Álvarez *et al.*, 2011; Cabrales, 2010; Rodríguez-Gómez *et al.*, 2012). Alvarez *et al.* (2011) found that teachers are reluctant to implement it in their classes, and that there is a difference between what they say and what they do. When analyzing the «teaching guides» of many faculties in the Spanish context, and without investigating what was really happening in the classrooms, San Martín *et al.* (2016) found that they did not include self-assessment.

What prevents teachers from applying self-assessment? Is it insecurity, lack of knowledge, inexperience, fear of novelty, or perhaps inertia and the «comfort zone»? What else could it be?

The studies themselves give a conclusive answer. Bourke (2014) indicates that self-assessment is not legitimate in the university due to several factors: the strong power of teachers, the passive role of students, and organizational policies that do not yet institutionalize it. On the other hand, Canney (2014) states that there are external elements that hinder the implementation of the practice, such as the time factor in large groups, self-assessment as a management requirement, and the little importance and lack of interest given to the self-assessment process by students and educational institutions.

Another possible explanation arises from teachers' beliefs about learning, explored in different works. Trevitt *et al.* (2012) believe that self-assessment can be applied when learning is conceived as a construct. When the premise is that

learning is built with the help of others —teachers, peers, etc.— then the vision of assessment changes, allowing students to participate in it. Likewise, the authors state that the success of self-assessment is reflection and constancy. To develop students' ability to self-assess, it is necessary that this be part of the curriculum and learning objectives.

However, successful self-assessment requires not only an understanding of learning from a constructivist perspective, but also an open view of self-assessment. As Tan (2008) explains from his research results, beliefs about self-assessment guide the development of activities and their choice. The author identified three different ways to implement it: the first is based on criteria offered by teachers—who represent power—to measure student behavior. The second diminishes control; it is based on the criteria of the programs, on their contents as epistemological power. For the third, teachers empower students, freeing up their control over them and focusing on learning outside the program, for life, and not just the specific subject. Tan (2008) states that self-assessment should be formative and focus on the process and consequences of the outcomes, not on the grades.

Although students can participate in assessment, its materialization in the academic life depends totally on the will and the interest of teachers, i.e., participation is conditioned and questioned, it is not a right, and it has no guarantees. On the other hand, when self-assessment is a didactic component, it is taken as a planned, intentional, and systematic action, as a fundamental part of teaching in each university course; in other words, it is concomitant with the didactic process.

3.2.2. Second trend: self-assessment in favor of learning for the development of abilities

Numerous studies report evidence of self-assessment as a means or strategy to develop reflection. These include Aguilar (2013), Aydeniz and Gilchrist (2013), Kelaher-Young and Carver (2013), and G. Rodríguez *et al.* (2011), as well as to develop metacognitive (Aguilar, 2013) and thinking skills. This can be explained by the fact that self-assessment tries to improve learning and not just to test it, thus encouraging the student to think more about it (El-Koumy, 2010).

Furthermore, findings from other studies showed that self-assessment was a tool to stimulate future learning (Thomas *et al.*, 2011) and a didactic strategy that provided conditions for developing autonomy (Kambourova, 2008) and for knowing themselves, understanding others, and their learning (Bourke and Tait, 2012).

Similarly, another author points out that self-assessment allowed students to show their capacity to evaluate themselves consciously and critically (Da Silva, 2007); in Aydeniz and Gilchrist's research (2013), it allowed teachers to assess students' level of understanding of the key concepts covered for each unit of study, and to review them together, if necessary.

Logan's (2009) findings showed that by applying self-assessment, students were developing a greater understanding of assessment related criteria, which allowed them to improve their academic performance and increase confidence as learners, even though this took time in the initial phase.

Ferrándiz-Vindel (2011) reported that self-assessment improved students' attitudes towards their future work, and in Siow's (2015) research, self-assessment helped students develop their analytical skills. Other benefits observed in the research results include the fact that self-assessment enabled students to assess their own potential and obtain greater objectivity (Cubero *et al.*, 2013; Rodríguez *et al.*, 2011; Kelaher-Young and Carver, 2013). Also, they were able to identify their weak areas in learning (McDonald, 2012) and to facilitate the review of contents and practice assessment for themselves since it is no longer an external factor, a mysterious process, which increased their self-esteem and self-confidence (Bozkurt, 2020).

In the same vein, Harrison *et al.* (2015) reported that self-assessment increased self-awareness, led to self-directed learning, and enhanced communication and collaborative work. However, the research conducted by Sosibo (2019) showed that students who had never had experience with self-assessment, when performing two cycles of different self-assessment activities, did not reach the level to become self-directed learners. Therefore, they needed more opportunities to practice self-assessment and feel more confident in their abilities to assess their work.

Logan (2015) stated that, by using self-assessment, students had an experience of self-discovery and intellectual growth. Likewise, when students assess and reflect on their learning through self-assessment, they understand the complexity of learning and the influence of various factors on it, according to the results of Bell *et al.* (2019). Consequently, the need arises to design more effective didactic and methodological strategies to be applied in the teaching-learning process by teachers. In other words, methods, contents, assessment, and self-assessment establish relationships as components of the didactic system.

Panadero (2011) investigated and confirmed that there is a relationship between self-assessment and self-regulation. Miller (2012) concluded that self-assessment, as an aspect of formative assessment, led to an increase in students' ability to self-regulate. Aguilar's study (2013) alone, contrary to the previous ones, showed insufficient statistical evidence to state that self-assessment increased self-regulation. However, the author noticed changes in students.

The studies of Walser (2009) and Calatayud (2007) emphasized self-assessment from teachers' perspective. The first author described it as an instructional strategy, which not only motivated students to do well in the course, but to take advantage of the opportunity to give feedback to their teachers. In her research, the second author referred to self-assessment as a methodological procedure to achieve educational goals and to educate in responsibility.

Mok *et al.* (2006) designed a method called KWL (know-want-learn), which allowed for the alignment of teaching and learning and which they applied as a tool for self-assessment, and meta-cognition, with positive results. The authors indicated that there is not a set of self-assessment questions that can be adapted to all cases; therefore, it must be contextualized.

To benefit from the practice of self-assessment, according to Harrison *et al.* (2015), it is necessary to ensure that self-assessment is implemented at all levels of the curriculum, including from primary school to university. Similarly, Dungan and Gronich (2006) stated that self-assessment can be used in every context and activity, for either the entire course or an individual activity, in all areas. Sosibo (2019) also recommends that self-assessments be integrated into university curricula and different courses and that university policymakers review assessment policies to make them constructivist, inclusive, and student-centered.

In her literature review, Miller (2012) concluded that it is very important to provide administrators and faculty members with reasons and evidence explaining why authoritarian methods should be replaced by methods that develop self-efficacy and self-regulation, including self-assessment. Furthermore, it is necessary to prepare both teachers and students to conduct self-assessment and to have the possibility to practice it (Bozkurt, 2020).

Although self-assessment has multiple advantages and generates positive feelings, as demonstrated in the studies of Cubero *et al.* (2013) and Kossack *et al.* (2006), on the contrary, it can produce negative feelings; it cannot be enjoyable and can require more time (Siow, 2015). Is it possible to minimize the less favorable effects of self-assessment by considering it a component of the didactic system in relation to others, since it would allow for more intentional and planned teaching, integrated, and coherent with learning?

Kossack *et al.* (2006) reported that it was possible to establish relationships between objectives and self-assessment in the course they taught. Bourke and Tait (2012) found that alignment between course objectives and content was necessary for self-assessment. In turn, Kelaher-Young and Carver (2013) expressed that students needed to get to know each other to identify the processes and resources they use to achieve learning goals and assimilate content. One of the conclusions of El-Koumy's research (2010) was that self-assessment and assessment should work as a team, taking advantage of each other. One cannot exist without the other, and it must be supported and motivated by teachers from the earliest stages in the university. Teachers' feedback on self-assessment is essential.

Moreover, Bozkurt (2020) states that the results of her study showed that a more cooperative, participatory, empathetic, and democratic learning environment can be developed when self-assessment (along with peer assessment) is used for feedback rather than for grading.

Ndoye's (2017) and Bourke's (2017) studies approached self-assessment from a peculiar perspective. The first author discovered the mechanisms that contributed to student learning: feedback, collaboration, and a supportive learning environment. They encouraged responsibility for learning, development of assessment skills, and strategies to fill identified learning gaps. It was suggested that it is possible to cultivate and enhance lifelong learning skills by implementing self-assessment to support deeper learning, rather than to assign grades.

New Zealand professor Bourke agrees with Ndoye and other authors previously mentioned that self-assessment is not for assigning grades, but to encourage learning. Self-assessment is an ontological issue, i.e., it has to do with being. It concerns someone who is interested in knowledge not as an end, but as part of the way to become a professional; a being who possesses such knowledge and values the meaning of learning and the ability to apply what he or she has learned in his or her practice and daily life. Teachers do not have predetermined learning outcomes, but rather help co-create these conditions as opportunities to learn.

As can be seen so far, and beyond inquiring and declaring the advantages and disadvantages of self-assessment for student learning and growth as a person, the research included in the second trend come to results and conclusions related to the role of teachers, who guide the teaching-learning process.

In this regard, Cruz and Da Silva (2019) note the importance of teachers assuming their role as mediators, motivating their students to meet and adopt certain self-assessment criteria. In a similar way, teachers must provide spaces for sharing and confronting opinions and experiences that strengthen collaborative work and the ability to «live with adversity, providing awareness, assumption of responsibility, and perseverance to move forward» since it is not enough to know only what is being learned, but «it is also necessary to know how to learn, what strategies should be used to carry out the tasks, and what changes should be made when the objectives have not been achieved.» (Cruz and Da Silva, 2019, p. 215). Another important aspect of the Brazilian authors' study has to do with the ability to listen to others. By avoiding self-assessment and rejecting it, whether out of distrust and discredit or for another reason, teachers may lose the opportunity to listen to the others —students— (and perhaps to themselves) who need to learn to express themselves about their thinking and action. Thus, these conclusions are interpreted as essential elements of humanist didactics.

In these studies, as in the articles of the first trend, although self-assessment is not explicitly examined as a didactic component, it is possible to find enough elements to consider it as such, with the aim of promoting lifelong learning.

3.2.3. Third trend: self-assessment and measurement of learning

For the last trend, the results of several studies showed that students' self-assessment grades are consistent with those assigned by teachers for a given product (Acedo and Ruiz-Cabestre, 2011; Dopico, 2010; Jackson, 2014; Kevereski, 2017; Leach, 2012; Machera, 2017; Stan and Manea, 2015).

Salvadores (2019) reports similar results by finding significant correlations between the grades obtained in the self-assessment and the external assessment using two standardized tests in English (both in the overall results and by specific linguistic ability). However, the author acknowledges that these results should be interpreted with caution and in light of their context due to the relatively small sample size. The self-assessments produced by the students in the study regarding their English language proficiency were accurate.

In contrast, in another group of studies, the authors found that there were no coincidences. This is the case of Jackson (2014); Kajander-Unkuri *et al.* (2016); Pawluk *et al.* (2018); Tejeiro *et al.* (2012), and Van Loon and Van de Wiel (2015). Verano-Tacoronte *et al.* (2015) noted that there are differences between the grade that students give to themselves, and those given by their peers and teachers; the results of the latter two are similar.

Nevertheless, the research conducted by Gabarda and Colomo (2019) found no similarity between any of the assessments. Thus, when assessing the pedagogical practice of students of the Bachelor's Degree in Primary Education, tutors of the educational center, where students carried out their internship, gave the highest grades, «slightly higher» than the other agents, that is, students themselves and the university tutor; the latter being the one who assigned the lowest grades. The same applies when analyzing the internships periods (there were four: School Internships I, II, III, IV), according to the semester the student is taking. It was observed that the grades of the center's tutors were always higher regardless of the period; those of the university's tutors were lower in all periods, and students' grades on their self-assessments were intermediate.

Calzada's study (2020) also revealed that the grades students assigned to themselves on their self-assessments are higher than the grades their peers gave them. However, students experienced greater difficulty in grading their self-assessments. In the same study, another interesting fact is that students still believe that the grades assigned by their teachers in the assessment should be more important than the grades given by their peers. The author interprets this as a «reflection of the traditional figure of teachers as 'autoritas' in the subjects they teach». (Calzada, 2020, p. 218).

As for the grades mentioned in the studies, it should be clarified that not all authors specify the task or product on which grades are assigned, but those who do referred to communication skills (Pawluk *et al.*, 2018), profession-specific skills (Kajander-Unkuri *et al.*, 2016), and the «Workshop» activity on Moodle (Calzada, 2020).

Some studies related various variables to self-assessment, having similar results. For example, students with low grades (from teachers' assessment) overestimated themselves, that is, they increased their self-assessment grade. Conversely, those with high grades or outstanding performance were the ones who underestimated or reduced their grades (Dopico, 2010; Jackson, 2014; Máté and Darabos, 2017), so they are considered to have been more accurate in their self-assessment.

In terms of how men and women assess themselves, there are some controversial results: Dopico's (2010) and Kevereski's (2017) results showed that women have greater responsibility, involvement, and honesty in judging their learning compared to men. However, Kevereski (2017) warns that his findings should be taken with caution, because of the small sample used. Jackson (2014), Máté and Darabos (2017), and Gabarda and Colomo (2019) noted that there was no evidence of gender influence on the accuracy of the self-assessment.

To improve accuracy, the authors suggested several strategies: using self-assessment rubrics with precise criteria; opening spaces for student participation in their construction and comparing with other assessment sources (Verano-Tacoronte *et al.*, 2015); providing more feedback; providing more details on the standards used for assessment (Van Loon and Van de Wiel, 2015); receiving feedback on their self-assessment (Sitzmann *et al.*, 2010).

Tejeiro *et al.* (2012) investigated the impact of self-assessment on grades. Their results found that in these cases students assessed themselves in a similar way as teachers do, but when self-assessment influenced their grades, discrepancy increased significantly by both over and under-grading. According to the authors, the reasons were the desire to obtain the highest possible grade and the pressure to grade themselves.

The meta-analysis by Sitzmann *et al.* (2010) warns that results on self-assessment of knowledge should be interpreted carefully because it is only moderately related to cognitive learning, and strongly related to the results of affective assessment. Thus, self-assessment relates to both motivation and learning.

Achury *et al.* (2013) conducted two self-assessments at different times and compared the results. Since extrinsic motivation strategies were implemented that empowered students and made them aware of their educational progress, the authors state that the results of the second self-assessment showed higher grades than those of the first one.

Gonzalez de Sande and Godino-Llorente's (2014) study compared problem-solving skills of two groups of students. The results proved that self-assessment and peer assessment are highly reliable; both were more effective than the formative assessment conducted by teachers.

Boud, Lawson, and Thompson (2013) explored the relationship of self-assessment with the ability to make value judgments. Overall, it was found that, under appropriate

conditions, most students can improve their judgment skills. However, when students were categorized by level of achievement, it was found that those with high academic achievement underestimated their ability, while those with low academic achievement overestimated it. The authors suggested that teachers and students should assess the role of criteria and standards for assessment as well as consider how an understanding of these elements needs to be fostered to develop student judgment to support optimal performance.

The results of Pawluk *et al.* (2018) evidenced that accurate and appropriate self-assessment is not an innate skill and cannot be effectively taught through an educational module. In other words, it is a reaffirmation of the idea that didactically oriented self-assessment should be present at all levels of the educational system, or at least in all courses of the students' university degrees.

Nevertheless, even if self-assessment is taught and practiced, there is no guarantee that it will be 100% accurate. In his study, Salvadores (2019) obtained contradictory results in relation to the premise that the greater the students' mastery and experience, the more accurate the results of their self-assessment. For instance, students who participated in the research had more experience in reading comprehension but showed the lowest correlation coefficients for this skill.

Stan and Manea (2015) are the only ones in this review that used the term *didactic self-assessment* understanding it as the self-assessment that has a gradual character, that develops sequence by sequence, and includes many «restructuring moments distinctively induced by interfering factors». (p. 499). The authors consider that «the relationship of self-assessment and assessment is an unavoidable element of pedagogical interaction between students and teachers (Stan and Manea, 2015, p. 499).

4. CONCLUSIONS

Scientific production on self-assessment has considerably increased in the last 20 years. Therefore, nowadays much more is known about it than three decades ago; for example, its relationship to teachers' grades and multiple other variables. However, it is imperative to recognize that there is still plenty of research to do and do it from other perspectives.

In general, the discussions included in the studied articles contribute to proving the benefits for students of self-assessment of learning. But at the same time, there are still doubts about its objectivity. Several studies emphasize the need to include it in university courses to make it a habit. Self-assessment is understood as an act of individuals themselves (students) but stimulated and supported by others (teachers) from outside. In this act of interdependence, the didactic sense of self-assessment is revealed. This is particularly the case when a global assessment is used, in which teachers assess and students self-assess; when it relates to assessment, objectives,

methods, and content, all of which are coherent and aligned with each other to achieve lasting learning.

However, these didactic aspects are little addressed in depth; therefore, they could be subjects for future research. Likewise, it is possible to examine the detected inconsistency between teachers' beliefs and actions concerning the application of self-assessment; for example, to problematize how the imaginary of teachers about their role as educators in university is related to the practice of self-assessment.

On the other hand, it is striking that there is still a marked tendency to check the effectiveness of self-assessment and its consistency with teachers' grades, while there are limited studies that emphasize self-assessment as an ontological issue, in which students are valued as human beings and not only from their role as students who can have a grade similar to that of teachers. Lack of confidence in students, as an expression of a preponderant and destructive position, could be a matter of new research on self-assessment; that is, it could be explored from other viewpoints and approaches. These could include longitudinal studies of graduates as professionals in action.

Regarding the research that measured differences between men and women, between outstanding and non-outstanding students, and other variables concerning self-assessment, it can be observed that there are many contradictory data; therefore, it would be dangerous to generalize. Nevertheless, this review does not intend to generalize results; the aim here is to understand the contexts and the people involved in them, the students, who build their own image in a relation to others. Thus, in a process in which self-assessment plays an important role for education, it would be more relevant to carry out interpretative research than to seek this type of comparison or generalization.

As for the methodology used in the articles, it should be noted that studies were identified with designs in which insufficient information on the research is presented, leaving unresolved issues. For this reason, it would be necessary to perfect the designs and the report of the studies.

At this point, it is interesting to make a parallel with a meta-analysis and a literature review, since some common aspects between them and this study were detected. The first aspect is the well-known study by Falchikov and Boud (1989), who stated «that it is advisable for researchers to pay attention to a proper design and adequate reporting of self-assessment studies.» (p. 395). The second is the research of Pastore (2017), who inquired into the methods and designs used for self-assessment in university. The author analyzed studies from ten European journals in English on higher education, between 2004 and 2014. She reported few studies in general. None of the eleven selected had a quasi-experimental design and the experimental ones were rare. Contrary to what the author found, three quasi-experimental studies were reported in the present review. Non-experimental designs and case studies

were the most frequent according to the author, so Pastore (2017, pp. 262- 263) concludes that this fact:

confirms how research in higher education tends to be more local and conducted in a micro-context. In this perspective, emphasis on purely qualitative methods or purely quantitative methods is a limitation in the field of higher education research [in her review no mixed research was found, but there were 7 in this review]... The results of the research remain at the contextual level of a single institution. Therefore, further work is needed to continue with in-depth international comparisons [...]. We need a scientific reflection that can expand its epistemological, ontological, and methodological horizons in higher education to highlight the common points and differences of conceptions and principles on self-assessment.

The author considers that not only should perceptions about self-assessment be known, but also that «regulatory norms should be developed that work for the correct choice of methodologies, values, theories, requests, and research criteria.» (p. 263).

While there are points of disagreement already noted with some of Pastore's findings, the need for further research on self-assessment is recognized. A multi-cultural approach is suggested when conducting research with qualitative and/or mixed methodology in universities in different countries, since it seems that self-assessment is more accepted in some cultures than in others. On the other hand, it is also essential to increase scientific production on this subject in general in Latin American countries and to carry out reviews that also include several languages — although many are published in English— to obtain a global view of this research in the world.

Finally, it is worth mentioning the following limitations of this review: the search was carried out only on electronic media and the review included only databases in the field of education, given the particular interest of addressing the didactic aspect.

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ANNEX 1.
Data on the studies included in the literature review

Authors	Year of publication	Methodological design	Results
Acedo, M. y Ruiz-Cabestre, F.	2011	Experience. Tests of difference of means of related samples	Results indicate that there are no relevant differences between the grades of self-assessment, peer assessment and the assessment of the teacher. Autonomous assessment should be considered as one more assessment tool used for assessing learning.
Achury, D., Díaz, J. y Rueda, M.	2013	Observational evaluative study	Results showed that from two self-assessments carried out, the second presents higher scores than the first one. This is due to the implementation of extrinsic motivation strategies, such as self-learning and self-assessment, which allow a change in the students' learning process because empowerment and consciousness are promoted in their educational progress. Fulfillment of subject objectives is achieved this way.
Aguilar, V.	2013	Quantitative, quasi-experimental with pre-test – post-test	Global results reflect that assisted self-assessment caused a decrease of 0.21% in self-regulation, while self-assessment caused an increase of 0.16% in the same variable. Statistically, there is not enough evidence to say that the median of self-regulation is different in the pre-test and the post-test before the application of self-assessment.
Álvarez, V., Padilla, M., Rodríguez, J., Torres, J., y Suárez, M.	2011	Descriptive	In this study, it could be evidenced that 43% of the teachers who participated, perceived self-assessment as desirable and necessary, but they do not apply it in their practice. On the other hand, analyzing the programs of different subjects, there is little registration of students' participation in them, that is, self-assessment is not included in the programs.
Aydeniz, M. & Gilchrist, M.	2013	Quantitative and qualitative methods (mixed)	Results show that self-assessment strategy allows teachers to obtain information on the effectiveness of their teaching and learning strategies of their students. On the other hand, it was demonstrated that because of the complexity of the concepts included in the course, it was difficult for students to learn on their own.

Authors	Year of publication	Methodological design	Results
Bell, R., Portilla, Y. y De la Llana, E.	2019	Quantitative, descriptive study	Based on students' self-assessment of their learning process and an observation to evidence their performance, it was found that students valued their own needs and potentials very similarly to their behavior and attitudes observed. Also, students were able to apply some strategies to improve their learning.
Boud, D., Lawson, R., & Thompson, D.	2013	Quantitative analysis of data	This study evidenced that the tutor data and the student self-assessments show no significant differences by the second assessment task in a unit of study of a subject. It was also found that this convergence was not evident when students began a new unit of study; their more accurate judgment did not occur on an initial task in a new unit, but until the time when they had the opportunity to practice self-assessment for three semesters. When students are categorized by achievement level, differences are found in students' ability to develop accurate judgement.
Bourke, R.	2014	Experience. Qualitative analysis	In this study, undergraduate and postgraduate students participated and applied self-assessment in different ways. The results from the first group evidenced that these learners were using the self-assessment tasks not only to 'know thyself' but also to understand others and their own learning with regards to the course content. The postgraduate students initially approached self-assessments in much the same way as traditional assessments. Later, when they participated in choosing their own criteria for self-assessment, many of them were able to articulate their comprehension and application of knowledge in new ways, to take them away from activities that encouraged recall and memorization to reconceptualizing major concepts and making them their own.

Authors	Year of publication	Methodological design	Results
Bourke, R.	2017	Qualitative analysis of data	Results show that the development of self-assessment tasks needs to be considered in the learning-assessment nexus. While these forms of assessment initially unsettle students, they are designed to enable students to participate with an eye on their learning, not the grade. Developing ontological awareness creates an ongoing commitment to learning within a profession and a deeper understanding of the object of the activity within and across each informal and formal context.
Bourke, R. & Tait, C.	2012	Qualitative study. Grounded theory approach	The data in this study indicate that students used self-assessment as a tool to analyze themselves, to understand others, and to understand their learning. Additionally, results evidenced that students explicitly recognize their own learning from the contents of the course, establishing links between theory and their own lives and using self-assessment process to plan actions in the future with learning strategies. In other words, learning had the potential to bridge the academic, professional, and personal worlds of students.
Bozkurt, F.	2020	Qualitative, phenomenological approach, descriptive study	The findings of this study showed that self and peer assessment are a powerful learning activity and a valuable source of feedback for the professional development of initial teacher candidates. Additionally, both types of assessment allowed them to increase their motivation toward learning and their awareness about goals and expectations.
Cabrales, O.	2010	Qualitative	The documentary analysis of the programs of the subjects studied in this research showed that self-assessment is not contemplated in them. It also showed that it is necessary to carry out a more conscientious follow-up of the programs that teachers pass and their evaluative practices, as well as the need to update them regarding the practices of participatory evaluation.

Authors	Year of publication	Methodological design	Results
Calatayud, M.	2007	Qualitative, descriptive	This study presents findings that evidenced the advantages of self-assessment for student learning given that they became aware of their process, were motivated to learn and direct their learning, and deepened their self-knowledge and responsibility.
Calzada Prado, F. J.	2020	Qualitative analysis of data	The grades assigned by students to their own work in the self-assessment process were higher than those given by their peers in the peer assessment and by their teachers in their assessment. 97.4% of the participants estimated that the assessment process carried out in the activity helped them develop their ability to reflect on their work and improve in the future. Conducting self-assessment presents a greater challenge for students than assessing their peers.
Canney, M.	2014	Mixed. Exploratory study	General results of the study show that teachers' beliefs about the purpose of self-assessment are favorable as a formative practice which contributes to student development. However, teachers' beliefs are not always reflected in their practice. The belief that students lack capacities to perform the process of self-assessment was not evidenced. Nevertheless, the preponderance of self-assessment as a self-grading was found; students, as well as teachers, are more interested in obtaining a grade rather than reflecting about the process. Some external elements that hinder the implementation of self-assessment were identified (time factor in large groups, self-assessment as an administrative requirement, little importance and lack of interest given to student self-assessment by educational institutions).
Capellato, P., Vasconcelos, L. V. B., Ranieri, M. G. & Sachs, D.	2020	Qualitative, case study	Findings show that students, based on the contents taught, were able to put into practice and evaluate the work of their peers. In addition, most of them could perform self-assessment in accordance with the general evaluation of the group. The critical vision presented by the students is fundamental for the development of active methodological practices.

Authors	Year of publication	Methodological design	Results
Cruz, S. y Da Silva, A.	2020	Qualitative, descriptive study	Students valued their learning with high grades because they perceived that were involved actively with the topics developed by their teachers, and, therefore, with the knowledge acquired. Their positive attitudes resulted in the optimization of their learning. It should be considered that some of them start working from the beginning, for others take longer to realize the need to study seriously.
Cubero, J., Rodríguez, G., y Quesada, V.	2013	Non-experimental methodology. Descriptive study	Results evidenced that students learn a lot from their participation in assessment through strategies such as self-assessment and peer assessment, e.g., to develop critical capacity, to learn to be objective, and to value one's own work. However, limitations and difficulties in their applications were also demonstrated, such as distrust in the reliability of the assessment carried out and the extra time involved in performing self and peer assessment. It is necessary to prepare students to be evaluators so that use of both types of assessment can have a positive impact on them.
Dopico, E.	2010	Participatory action research. Quantitative data analysis	The results of this research showed that self and peer assessment provide relevant information for the teaching process. High levels of congruence were evidenced in the self-perception of their own academic performance, visible in the number of coincidences in the grades that students and groups give to themselves and those determined by teachers. Likewise, it was evidenced that students with a lower grade than the one assigned by their teachers tend to increase their final grade, while those to whom teachers assign a high grade tend to reduce it. It was also found that women show greater responsibility, involvement, and honesty when judging their learning productions than men, either individually, in a specific group, or as part of mixed groups.

Authors	Year of publication	Methodological design	Results
Duers, L.	2017	Qualitative	The study found that participants desired a new performance feedback form, and they helped to create it. In this form, the evaluator (they themselves or another person) judge human qualities, such as 'compassion' and 'kindness', in addition to the skills and knowledge criteria. In other words, self-assessment includes various dimensions of the human being.
Dungan, A. & Gronich, L.	2006	Qualitative and quantitative (mixed) analysis of data.	In this study, self-assessment was applied as a pedagogical tool to improve the participation of students in their learning, especially self-direction and self-management behaviors. Through its use, students develop the skills necessary to become lifelong learners projecting goals, establishing criteria for successful outcomes, and reflecting on their learning and further learning needs.
El-Koumy, A.	2010	Experimental design, Pre-test – post-test	The results of the study revealed no significant differences between the self-assessment group and the no-assessment control group in knowledge achievement or academic thinking skills. Like any other skill, students needed to practice self-assessment under the teacher's supervision to become skillful and comfortable enough to incorporate it into their own learning.
Fernández, A. y Vanga, M.	2015	Descriptive, explanatory. Qualitative and quantitative data (mixed)	The study noted the functional nature of the process of self-assessment, co-assessment, and hetero-assessment, which was designed to characterize student behavior and improve student performance.
Ferrándiz-Vindel, I.	2011	Case study	It was found that the attitude towards work and professional management are valued by students as influential skills when preparing as professionals. The self-assessment of attitudinal content makes it easier for each person to find their own hierarchy of values as an essential part of their individual identity.

Authors	Year of publication	Methodological design	Results
Fraile, A. & Moreira, H.	2013	Descriptive. Quantitative analysis of data	The main results obtained showed that students value the preparation of reports and the use of the field diary to assess learning, as well as to acquire knowledge about the content of the discipline. Students also valued participation in the continuous and formative assessment process since this facilitates the teaching and learning activities during the training process.
Gabarda Méndez, V. y Colomo Magaña, E.	2019	Quantitative, descriptive	Results show that students have a higher perception of their performance than university tutors, but not than their tutors in the educational center where they carry out their internships. On the other hand, there are no significant differences in the perception of students based on gender, but there are in other variables such as the internship period taken or the ownership of the centers.
González de Sande, J. & Godino-Llorente, J.	2014	Quasi-experimental	This study found a higher correlation between the grades of the peer-rated activities and teachers' grades than the correlation between the grades of the self-assessment activities and teachers' grades. Additionally, results showed that self and peer assessment were more effective than teacher formative assessment, and that the first two are highly reliable.
Hale, C.	2015	Qualitative analysis of data	Qualitative findings indicate that students appear to find value in the exercise consistent with the overall aims of a liberal arts education, indicating that it makes them feel trusted by instructors, develops their sense of responsibility, and forces them to look at their writing more objectively.

Authors	Year of publication	Methodological design	Results
Harrison, K., O'Hara, J., & McNamara, G.	2015	From the beginning it was action research. Later, it had a phenomenological approach	The results found that, during self and peer assessment, students developed skills as critical and creative thinkers, effective communicators, collaborative team workers, becoming more personally productive and effective. Their self-awareness and self-reflection increased significantly. All these aspects are essential components of self-direction.
Inda, M., Álvarez, S., y Álvarez, R.	2008	Experimental group and control group	The study found that when innovative methodologies are applied and students participate in their process of teaching and assessment, the results obtained are, in general, better and more satisfactory than when a traditional methodology is followed. It was found that there were higher correlations between the assessment carried out by teachers, both at the group and student levels (group / teacher hetero-assessment and student / teacher hetero-assessment) and between the peer assessment and the self-assessment. Regarding gender, the only determining factor in student performance was the methodology used and not gender.
Jackson, D.	2014	Quantitative analysis of data	This study found significant differences between teachers' and students' assessments of performance in employability skills, that is, there is overrating among students from first through to final-year students. Correlation coefficients, however, indicate there is a degree of alignment between academic and student assessments in the second and third-year samples, and for the overall sample of students. Students judged by academics as more academically competent were able to self-assess more accurately than their less competent peers — those achieving fails and passes. High-achieving students tended to underestimate their performance, while low achievers overestimated and to a greater extent than those underestimating. The influence of gender on self-assessment accuracy is not detected in this study.

Authors	Year of publication	Methodological design	Results
Kajander-Unkuri, S., Leino-Kilpi, H., Katajisto, J., Meretoja R., Räsänen A., Saarikoski, M., Salminen, L., & Suhonen, R.	2016	Design of comparative surveys	Comparisons between the assessments showed that students assessed their nurse competence as higher than their mentors. Nursing students should practice self-assessment during their nurse education.
Kambourova, M.	2008	Qualitative. Hermeneutical approach	Findings of this research showed that application of self-assessment strategy with its steps —awareness, theoretical approach, reflection, comparison, and projection of autonomy— provided necessary conditions for students to learn to self-assess systematically, acquiring their autonomy. Also, some competencies were developed in students and a process of generating a culture of self-assessment began.
Kelaher-Young, A. & Carver, C.	2013	Qualitative	As this study revealed, deliberate self-assessment helped participants articulate and interrogate their notions about learning strategies, interpret concepts like critical thinking, and self-regulated learning through the lens of their own processes and experiences as learners. Additionally, it allowed them to understand their assumptions and beliefs about the profession and themselves.
Kevereski, L.	2017	Statistical analysis of data	This research has shown that students' exam grades were almost the same as those assigned by their teachers. Female respondents have more objective grades about their knowledge and expectation than male respondents. Findings of this study should be considered with caution given the relatively small sample size.

Authors	Year of publication	Methodological design	Results
Kossack, S., Sandiford, J., & López, R	2006	Quasi-experimental, pretest – post test	<p>Students' scores before and after self-assessments clearly indicated significant growth in critical course knowledge; on average, this growth doubled, according to students.</p> <p>Also, evidence was found that students assumed responsibility for their own learning as well as the intention to continue learning information that their end-of-course assessments indicated they still needed. On the other hand, self-assessments allow teachers to adjust course/instruction based on student-perceived needs.</p>
Leach, L.	2012	Statistical analysis of data	<p>The statistical analysis comparing student and teacher grades showed that they were very similar. However, a closer analysis of data provided an insight into underrating and overrating. Students with high grades were more likely to underrate than overrate. The results presented above also show that when self-assessment was optional, most students did not self-assess.</p>
Logan, B.	2015	Qualitative	<p>This study found that by applying self-assessment (in the form of an essay) students understood the practice of self-discovery and the importance of deliberately making them responsible for their own learning.</p>
Logan, E.	2009	Action research	<p>The findings indicate that, although time consuming in the initial stages, the intervention resulted in students becoming more reflective and self-critical leading to improved academic performance. Regular sharing and discussion of their work led to increased confidence in their perception of themselves as learners.</p>

Authors	Year of publication	Methodological design	Results
Lopes, I.	2018	Phenomenological approach, with descriptive, explanatory technique	The results showed that teachers (as participants) have a positive and affirmative view of the efficiency and effectiveness of self-assessment. When used, it allows the distribution of responsibilities among actors, especially teachers and students as learners, since that is a consequence of this fact and vice versa. Furthermore, it was revealed that teachers perceive the practice of self-assessment as an experience of self-knowledge.
Machera, R.	2017	«A survey research design»	The main findings of this study reflected the benefits of appropriate and well-coordinated self-assessment and peer assessment, such as self-directing, learning by doing, and preparing students' employability skills, as this involves collaboration and self-judgment.
Máté, D. & Darabos, E.	2017	Statistical data analysis	This study found that higher-achieving students seemed to predict and evaluate their examination results more accurately and tended to overestimate them less than their lower-achieving peers. It was also shown that higher-achieving students seem to predict and evaluate their examination results more accurately than their lower-achieving fellows on the Moodle tests than on traditional tests. On the other hand, the results did not provide clear evidence that disparities exist in self-assessment depending on gender: women were less likely to overestimate their results.
McDonald, B.	2012	Control group and experimental group	This research demonstrated that students in the experimental group (taught with a student-centered approach with an emphasis on self-assessment) outperformed students in the control group (taught in a traditional way) at all levels of achievement (superior, middle, and lower). Students in the experimental group were able to pinpoint their specific areas for improvement, while those in the control group were not interested in determining ways to improve.

Authors	Year of publication	Methodological design	Results
Miller, B.	2012	Literature review	The study concludes with the discovery of a teaching theory for nursing students that adopts formative assessment as an important teaching method which allows the development of students' ability to self-regulate and participate in their learning. Self-assessment is one aspect of formative assessment.
Mok, M., Lung, C., Cheng, D., Cheung, R., & Ng, M.	2006	Multiple case study	This study describes the use of a metacognitive approach called the Know-Want-Learn method for the self-assessment of teacher training students. The results show that students considered that the metacognitive approach supported their learning and self-assessment, allowing them to be more aware of their learning and thinking processes at the end of the study. In addition, the teachers who participated in the project found the method to be demanding, but it generated useful feedback which improved their teaching.
Ndoye, A.	2017	Qualitative, exploratory study	Results of this study indicate that feedback, collaboration, and a supportive learning environment are mechanisms through which peer and self-assessment contribute to student learning. The findings also showed that students perceive that activities of peer and self-assessment promote their sense of responsibility towards their own learning through increased awareness of course requirements and expectations, as well as the development of their skills and assessment strategies to fill identified learning gaps.

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Nulty, D.	2011	Literature review	This study mentions the benefits of self and peer assessment: identification of criteria to judge certain work and make judgments using these criteria, so that these two types of assessment not only empower students in their learning, but in their professional practice and continuous learning after graduation. Greater use of self and peer assessment is recommended with students in the first year of higher education.
Panadero, E.	2011		Only the theoretical part of the thesis, which contains literature review, was used. Therefore, the results of the studies carried out in the experimental part are not included here.
Pawluk, S., Zolezzi, M., & Rainkie, D.	2018	Quantitative data analysis	In this study, pharmacy students' communication with a standardized patient was assessed by themselves, by a member of the faculty, and by the patient, in each of the four stations that the students passed. The results showed that, at all stations, students' self-assessment scored higher than the corresponding teacher and standardized patient assessments. Concordance between the teaching staff, the standardized patient, and the self-assessment was moderate to mild for all comparisons, but only significant between the teaching staff and the self-assessment.
Rodríguez, G., Ibarra, M., y Gómez, M.	2011	Empirical-analytical and interpretive approaches. Qualitative case study	This study proved that students are actively involved in the e-self-assessment process, carrying out a critical analysis of their training needs, their potentialities, and their weaknesses. The e-self-assessment favors the active participation of students and involves an exercise in self-regulation and self-reflection on their degree of knowledge and development of skills.

Authors	Year of publication	Methodological design	Results
Rodríguez-Gómez, G., Ibarra-Saiz, M., Gallego-Noche, B., Gómez-Ruiz, M., y Quesada-Serra, V.	2012	Multiple case study. Descriptive/ evaluative	In this study, based on the analysis of the subject programs, it was found that there is little evidence that university teachers consider it important to take into account the participation of students in the assessment process. On the other hand, teachers and students agree that active participation of students in the assessment process brings them many benefits, for example, the development of critical capacity, active involvement in the learning process, the improvement of knowledge on specific subjects, or improving attitudes and learning outcomes or products. However, this recognition faces the little use of participatory strategies in assessment, specifically self-assessment. Regarding assessment criteria, an important part of the surveyed teaching staff affirms that they carry out activities to explain and discuss these criteria with their students, but most of the students perceive that the explanation and discussion of the criteria or the participation in determining them is not a generalized reality.
Rúa, J., Arcila, M., Giraldo, M., y Hoyos, A.	2007	Quantitative and qualitative approach (mixed)	This study offers different results on the assessment of learning. Some of the most important are those that found that assessment is not concerned with the formative process, but with the verification of results. It was also shown that although teachers favor some moments for self-assessment, they do not do so for feedback purposes.
Salvadores-Merino, C.	2019	Exploratory, correlational study	The study found significant correlations with high coefficients between the scores obtained in the self-assessment and those obtained through the external assessment (both in overall results and by specific linguistic ability). Regarding the premise —the greater the student's mastery and experience, the greater the accuracy in self-assessment— contradictory results were found since students have more learning experience in reading comprehension but have the lowest correlation coefficients for this ability.

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San Martín, S., Jiménez, N., y Sánchez-Beato, E.	2016	Empirical study	This study analyzed the assessment systems of university students based on officially published teaching guides. It was found that few guides relate assessment to the acquisition of competences, that the final exam continues to be crucial, to the point that the continuous assessment system is not frequently applied, and that self-assessment and co-assessment constitute a minority in assessment systems. Furthermore, the study showed that new technologies are little used in the assessment process and the mere attendance to class represents an assessment system recorded in the guides. Finally, the authors point out that although the analysis presented does not necessarily reflect what happens in the classroom, it is an important point to reflect on this reality.
Siles-González, J. & Solano-Ruiz, C.	2016	«Cross-sectional descriptive study»	The results of this study showed that self-assessment constitutes a new concept for students and forces them to reinterpret their role. It was also found that the participation of students in the process of evaluating their own learning and, in particular, their achievements and results, contributes to the full development of reflection on learning and facilitates the development of critical thinking. However, self-assessment is a long and complex process, so it is advisable to move slowly in an organized way (providing the necessary means and structures) before implementing it, since the traditional assessment that reinforces student passivity persists.
Silva, R. da	2007	Qualitative. Discourse analysis	Students show a significant desire to improve their learning when they feel encouraged to reveal their perceptions about their performance and that of the group, in a kind of co-responsibility in the assessment process, grasping very close concepts of their real performance. To make this possible, it is necessary to have the guidance of the self-assessment process with well-defined and clear stages.

Authors	Year of publication	Methodological design	Results
Siow, L.	2015	Statistical data analysis	The results show that participants perceived that both self and peer assessments allowed them to be more critical, to work in a more structured way, and to think more deeply. Time consumption is the primary concern of students, but this has not discouraged their need for self or peer assessment.
Sitzmann, T., Ely, K., Brown, K., & Bauer, K.	2010	Meta-analysis	The results of this work showed stronger correlations of self-assessment with motivation and satisfaction, but the relationship between self-assessment and cognitive learning was moderate. Even under conditions that optimized the self-assessment-cognitive learning relationship (for example, when students practiced self-assessment and received feedback on their self-assessments), the relationship was still weaker than the self-assessment-motivation relationship. It was also found that in a third of the studies analyzed, the researchers interpreted the self-assessed knowledge data as evidence of cognitive learning. Therefore, the authors recommend assigning a more limited role for self-assessment within the evaluative practice.
Sosibo, Z.	2019	Action research	The results showed that by applying self-assessment of their learning, students developed a few skills to become self-directed learners: this was evidenced by the low correlations that continued in the second of two comparative assessment activities, although the differences in means improved. However, students reported having feelings of autonomy regarding their learning as a result of the opportunity to value their own work.

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Souto, R., Jiménez, F. y Navarro, V.	2020	Mixed, case study	This study shows that when students participate in assessment through self and peer assessments, they develop competencies for their learning. It was also evidenced that students' reluctance to apply these types of assessment has to do with the grades, not with assessment itself. It was also found that prior specific preparation is necessary for teachers to guarantee the development of self and peer assessments.
Stan, C. & Manea, A.	2015	Quantitative data analysis	The research showed that more than half of the participants stated that they used the self-assessment method at all times or most of the time, which is a sign of a high level of attention to their own level of preparation. The main reasons for self-assessment were related to the degree of understanding of the course and the effort to study. Similarly, it was found that almost all students believe that their self-assessment is accurate and when it is not, the tendency is to underestimate.
Tan, K.	2008	Phenomenographic approach	The findings of this study provide information about different qualitative ways that university teachers understand and use power in their student self-assessment practices. Five conceptions were identified: A: involving students in judging their behavior in self-assessment activities; B: involving students in judging their knowledge in self-assessment practices; C: involving students in judging their standards within the program of study; D: involving students in judging their proficiency within the program of study; E: involving students in judging their self-assessment ability beyond the program of study.

Authors	Year of publication	Methodological design	Results
Tejeiro, R., Gómez-Vallecillo, J., Romero, A., Pelegrina, M., Wallace, A. & Emberley, E.	2012	Statistical data analysis	In this study, it was found that in both groups (where self-assessment was applied and where it was not) students' self-assessment grades were higher than those given by their teachers, with significantly higher differences in the students with poorer results and in the group whose self-assessment influenced the final grade. In this group, no relationship was found between teachers' and students' assessments. Thus, it was found that when self-assessment does not influence the grade, students self-assess in a very similar way as teachers do, but when self-assessment influences the grade, the discrepancy increases considerably, either over or under-grading.
Thomas, G., Martin, D., & Pleasants, K.	2011	Experience. Three case studies	In this study, the authors share general ideas that emerged from their experience with the application of self and peer assessments: in order to use them, it is necessary to spend enough time to discuss the fundamental reasons for doing so. Such discussions provide excellent opportunities to engage students' thinking about learning and assessment, but also reveal their concerns and anxieties about self and peer assessments. Resistance can be expected from students, peers, and supervisors when developing and implementing innovative assessment strategies. However, with the right level of support and planning, the advantages of engaging students in self-assessment and peer assessment processes easily outweigh the disadvantages (as the authors observed in their initiatives).

Authors	Year of publication	Methodological design	Results
Trevitt, C., Breman, E., & Stocks, C.	2012	Experience. Two case studies	This work focused on the acts of judgment on an activity or product. The authors state that such acts are at the heart of formative and summative assessment, and that assessment is more likely to lead to valued learning if part of the judgment used belongs to students, and not just teachers. The development of students' skills in assessment and especially in self-assessment should be more prominent in the curriculum and learning objectives.
Van Loon, M. & Van de Wiel, M.	2015	Quantitative data analysis	This study examined medical residents' self-assessment accuracy and its relationship with goal orientation, reflection, and performance. Although the findings confirm the strong relationship between goal orientations and reflection, mastery goal orientation was negatively related to self-assessment accuracy and test performance. Findings indicate that it is important to triangulate data by combining self-report questionnaire data with more fine-grained measures of self-assessment accuracy.
Verano-Tacoronte, D., Bolívar-Cruz, A., & González-Betancor, S.	2015	Quantitative data analysis	This study showed that men have a statistically higher self-assessment than women and that bright students are very good at judging their own performance, while students with fewer abilities are less accurate. It was also evidenced that the rubric (used in the study) enables a high level of accuracy, given that teachers and peers score similarly. Students accurately assessed their peers when they acted as peers, which seems to give more weight to the students' motivation to improve their grade when it comes to self-assessment.

Authors	Year of publication	Methodological design	Results
Vieira, L., Lima, M. L.	2019	Mixed	Among the results of this study is that self-assessment is the second most used tool among participating teachers. Likewise, based on the frequency of use of the tools and the teachers' conceptions about assessment, it is evidenced a procedural and continuous evaluative practice. These conceptions are expressed in the relationship between discourse and evaluative practice; however, this assessment still does not manage to be a mediator.
Walser, T.	2009	Action research	The results indicated that self-assessment exercises allowed students to reflect on the course and their performance, helped them monitor their progress, motivated them to perform well in the course, and provided them with the opportunity to give feedback to their teachers. Moreover, from the teacher's perspective, the exercises provided useful information to improve the course and facilitated interactions and relationships with students.