



STUDENT SELF-ASSESSMENT IN HIGHER EDUCATION AND PROFESSIONAL TRAINING: CONCEPTUAL CONSIDERATIONS AND DEFINITIONS

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Abstract:

The purpose of this paper is through the content analysis of 48 publications in scientific texts, books and articles in scientific journals and conferences, to investigate the conceptual content of the term student self-assessment in higher education and professional training as it emerges from the descriptions and discussions of authors, researchers and experts. From the analysis nine dimensions or characteristics of the student self-assessment emerged because they had the highest frequency of occurrence. These are: a. Student-centered pedagogy, feedback and learning orientation that have been included in a broader category, "context" b. Quality learning, collaboration/involvement and formative assessment that were included in the category "student role" and c. Monitoring, reflection and review/control that were dimensions of a more general category that was called "processes". Definitions are mainly based on the dimension of student-centered pedagogy and reflection. Additionally, collaboration/involvement is a dimension that is reported less in definitions, but it is also an important element.

Keywords: definition of self-assessment, dimensions of self-assessment, higher education, professional training, student self-assessment

1. Introduction

Students should know what their abilities are what progress they make and what they are able to do or not to do with the abilities they have acquired (Javaherbakhsh, 2010), because it is very important if they want to learn effectively. According to Carless, Joughin and Mok (2006), assessment procedures such as self- and peer-assessment actively involve students in the suitable conditions for promoting lifelong learning.

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Focusing on self-assessment, it is underlined that it is related to the goal of lifelong learning and it is incorporated into several teaching subjects and fields (Javaherbakhsh, 2010). Moreover, students through self-assessment reflect on their practice and understand that learning is something more than a fact that happens and ends. Specifically, it is a procedure. Consequently, self-assessment seems to be a useful tool (Baldwin 2000, as cited in Srimavin & Darasawang, 2003).

Student-centered learning is related to self-assessment, accreditation, and evaluation, and suggests that efforts need to be focused on students. Self-assessment needs independent thinking, honesty, time management skills, recording skills, ability to follow instructions, paying attention to detail and integrity (McDonald, 2012).

It is generally accepted that self-assessment is the students' ability to judge their performance, i.e. to decide for themselves and their abilities. The most definitions of the term self-assessment are quite general, although there are many of them (Noonan & Duncan, 2005). Relevant literature shows that there are various interpretations and conceptualizations of what really constitutes self-assessment. Some view self-assessment as a personal ability or skill associated with careful consideration of the quality of students' work and the summative assessment of their performance or of their knowledge and abilities. Others consider that self-assessment is a type of assessment that serves summative purposes, and finally, some conceptualize self-assessment as a learning strategy or procedure that promotes learning (Yan, 2016).

On the other hand, Dann (1996) notes that a key element in formative assessment should be to try to focus on gaining a better understanding of how students perceive and carry out their tasks, and how they view their achievements. Therefore, it is concluded that student self-assessment seems to play its own role in formative assessment.

Even though, there are several definitions of self-assessment, it has been developed a common understanding of the self-assessment's goal (Noonan & Duncan, 2005). Woods, Marshall and Hrymak (1988) mention that self-assessment is the driving force for everything that someone does and, inter alia, they note that the purpose of self-assessment is to help students assess their performance, to monitor and see their progress, to realize what they have achieved, to acquire skills they need to plan their learning, to follow their goals and conclude on the basis of the criteria they have identified for themselves.

In addition, self-assessment helps students follow the learning process in order to develop knowledge through conscious control over the knowledge or to develop metacognitive awareness of thinking and knowledge (Javaherbakhsh, 2010). Finally, self-assessment can help students develop autonomy in their learning, self-confidence, and skills that can help them manage their time, careers and lives (Woods et al., 1988).

The purpose of this paper is to analyze the conceptual content of the term student self-assessment in higher education and professional training through the study of material from scientific texts, books and articles in scientific journals and conferences in order to determine the characteristics or otherwise the elements that constitute the term student self-assessment. A conceptual map of the term was originally designed

and at the conclusion a table of nine dimensions of self-assessment related to the context, the student role and the self-assessment processes was produced.

2. Method

A literature review was conducted in order to develop a list of those important components that various researchers, experts and authors use to define the concept of self-assessment. The method that was used was similar to that of Frey, Schmitt and Allen (2012), who presented a conceptual analysis for authentic evaluation.

Self-assessment was examined in the context of higher education and professional training (e.g. Boyd & Cowan, 1985; Boud 1986, 1989, 1990, 1992, 1995; Tan, 2004). 48 publications have been found in journal articles, conferences, books, and various scientific papers, where several authors have defined self-assessment by giving various characteristics of it or by providing an unchanged definition of the self-assessment process through which these characteristics emerge.

The goal was to examine the concept of self-assessment through the descriptions and discussions of authors, researchers and experts and the result of this procedure was a concept analysis.

2.1 Process of identification of dimensions of self-assessment

The identification of dimensions is subject to the subjective judgment of the researchers. Below there are some examples of how the researchers identified some of these dimensions as they emerged from the original texts of the publications that were collected and examined.

“Self-assessment refers to the involvement of learners in making judgements about their own learning, particularly about their achievements and the outcomes of their learning.” (Boud, & Falchikov, 1989, p. 529).

“Self-assessment means more than students grading their own work; it means involving them in the processes of determining what is good work in any given situation” (Boud, 1995, p. 12).

“...it is essentially a tool to reflect student-staff partnership in learning and assessment if students are positioned as agentic in the assessment process...” (Bourke, 2018, p. 827).

The above were all categorized as *collaboration/involvement*.

Below there are some examples of phrases related to the definition of self-assessment that were classified as *student-centered pedagogy*.

“Self and peer-assessment are becoming central aspects of student-centered assessment processes in higher education.” (Wanner & Palmer, 2018, p. 1032).

"... is an internal practice that is conducted by and within the student." (Yan & Brown, 2017, p. 1248).

Subsequently, for the dimension *formative assessment*, the following two examples are provided.

"Self-assessment has been increasingly used by interpreter trainers as an important tool in formative interpretation assessment..." (Han & Riazi, 2018, p. 396).

"Self-assessment can be used fairly easily for formative purposes." (Dochy, Segers, & Sluijsmans, 1999, p. 346).

Below, two examples for the dimension *reflection* are presented.

"...a process during which students collect information about their own performance, evaluate and reflect on the quality of their learning process and outcomes according to selected criteria to identify their own strengths and weaknesses." (Yan & Brown, 2017, p. 1248).

"...we define self-assessment as the process that gives students the opportunity to reflect on and evaluate their work, learning, and knowledge in a way that helps them identify their strengths and weaknesses..." (Summers, Cox, McMurry, & Dewey, 2019, p. 270).

Moreover, for the dimension *learning orientation*, the two following examples are presented.

"...the core of learner self-assessment studies is not on assessment itself, nor on correctness or power, but on the facilitation and development of learners' learning..." (Huang, 2016, p. 804).

"The self-assessment and peer-assessment are therefore process-oriented rather than outcome-oriented." (Li & Chen, 2016, p. 784).

In the early stages of the literature review, a conceptual map was created in which the key elements of the self-assessment were noted from each publication. This helped to create labels for the number of items that were found.

Common or similar elements of the definitions were entered in the same column, and as the study of the material was in progress and other elements emerged, the original categories were revised to include these new elements.

This means that many similar elements have been combined in order to have a category, as the goal was to create as few categories as possible. In the end, nine dimensions of self-assessment emerged and for each dimension, it was presented the

frequency of popularity, particularly it was calculated the relative frequency, in order to underline the significance of each element.

Figure 1 presents the conceptual map that shows the initial pilot identification of student self-assessment elements.

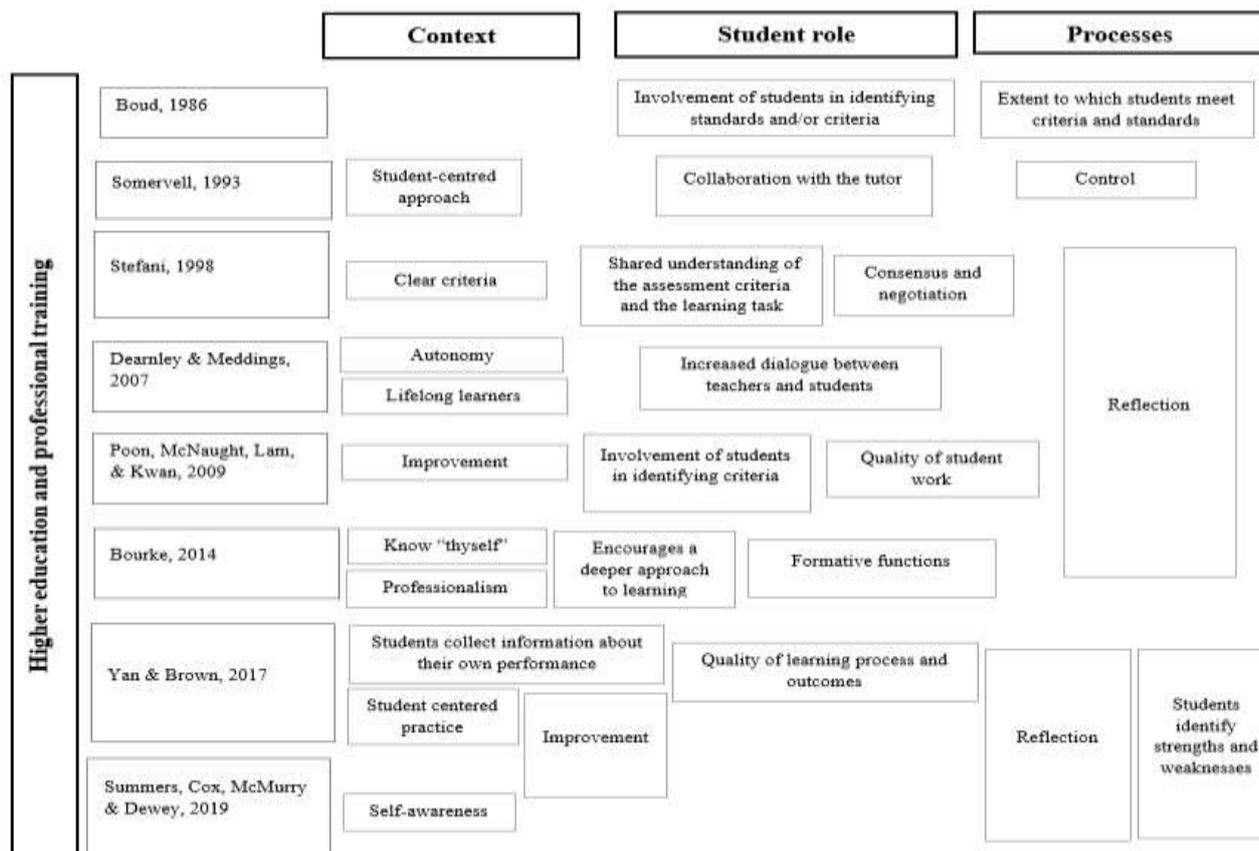


Figure 1: Initial pilot identification of elements of student self-assessment

3. Results

The dimensions of the self-assessment that were most reported in the publications were grouped into the following three categories:

a) the context of the self-assessment

- Student-centered pedagogy
- Feedback
- Learning orientation

b) the role of the student

- Quality learning
- Collaboration/involvement
- Formative assessment

c) the processes

- Monitoring
- Reflection
- Review/control

Table 1 summarizes the publications that were studied and referred to self-assessment in higher education and professional training. For any scientific text, article, or book in which a dimension of self-assessment was part of the definition as it was presented in the publication, the cell associated with this dimension was shaded. Furthermore, the percentages that show the relative frequency of each dimension of the self-assessment are provided.

Table 1: The meaning of student self-assessment in higher education and professional training

		Context			Student role			Processes		
		Student-centered pedagogy	Feedback	Learning orientation	Quality learning	Collaboration/involvement	Formative assessment	Monitoring	Reflection	Review/control
	Percentage including dimension	63%	15%	25%	4%	35%	12%	6%	54%	2%
1	Lublin, 1980									
2	McCarthy, Meier, & Rinderer, 1985									
3	Boyd & Cowan, 1985									
4	Boud, 1986									
5	Woods, Marshall, & Hrymak, 1988									
6	Boud & Falchikov, 1989									
7	Boud, 1989									
8	Boud, 1990									
9	Boud, 1992									
10	Somervell, 1993									
11	Boud, 1995									
12	Adams & King, 1995									
13	Sullivan & Hall, 1997									
14	Gruppen et al., 1997									
15	Stefani, 1998									
16	Davies & Wavering, 1999									
17	Brown & Glasner, 1999									
18	Mehta & Danielson, 1999									
19	Dochy, Segers, & Sluijsmans, 1999									
20	Hanrahan & Isaacs, 2001									

21	Ward, Gruppen, & Regehr, 2002									
22	Tan, 2004									
23	Tan & Keat, 2005									
24	Eva & Regehr, 2005									
25	Carless, Joughin & Mok, 2006									
26	Fjortoft, 2006									
27	Mok, Lung, Cheng, Cheung & Ng, 2006									
28	Andrade & Du, 2007									
29	Dearnley & Meddings, 2007									
30	Tan, 2008									
31	Colthart et al., 2008									
32	Eva & Regehr, 2008									
33	Poon, McNaught, Lam, & Kwan, 2009									
34	McDonald, 2012									
35	Bourke, 2014									
36	Logan, 2015									
37	Isenberg Roy, Veloski, Berg & Yeo, 2015									
38	Li & Chen, 2016									
39	Huang, 2016									
40	Siles-González & Solano-Ruiz, 2016									
41	Yan & Brown, 2017									
42	Wanner & Palmer, 2018									
43	Han & Riazi, 2018									
44	Adachi, Tai, & Dawson, 2018									
45	Mazloomi & Khabiri, 2018									
46	Bourke, 2018									
47	Summers, Cox, McMurry & Dewey, 2019									
48	Seifert & Feliks, 2019									

4. Discussion

The most frequently reported dimension in the definitions is *student-centered pedagogy* (63%), which belongs to the broader category “context”, followed by *reflection* (54%) which belongs to category “processes”, *collaboration/involvement* (35%) which belongs to the category “student role”, *learning orientation* (25%), *feedback* (15%), *formative assessment* (12%), *monitoring* (6%), *quality learning* (4%) and *review/control* (2%).

Student-centered pedagogy is the most basic dimension. This arises from the fact that self-assessment focuses on students (Wanner & Palmer, 2018), as the student is the center (Somervell, 1993) and, as noted by McDonald (2012), student-centered learning is linked to self-assessment, whereas Yan and Brown (2017, p. 1248) characteristically mention that self-assessment “...is an internal practice that is conducted by and within the student.” In the health professions self-assessment is considered to be an integral element of lifelong learning (Colhart et al., 2008) and plays a formative role in professional development (Gruppen et al., 1997), contributes to the continuous

development of students (Fjortoft, 2006), while it is also characterized as the foundation of lifelong learning and self-improvement in medicine (Isenberg et al., 2015). The importance of self-assessment for professional development in the health professions is also noted by Eva and Regehr (2008). Moreover, self-assessment is considered to be the students' ability where students can benefit from it (Huang, 2016), and in the health professions self-assessment is recognized as a key element of professionalism by certification committees and professional organizations (Isenberg et al., 2015). The fact that the self-assessment process (Lublin, 1980) and the assessment criteria must be clear to students (Stefani, 1998), as well as the positive outcomes that students have from the self-assessment process support the dimension *student-centered pedagogy*. Among these positive outcomes are inter alia the fact that self-assessment helps students to make realistic judgments about themselves (Lublin, 1980), empowers them in the assessment process (Tan, 2004), gives them autonomy in learning (Dearnley & Meddings, 2007) and contributes to the intellectual growth (Logan, 2015). Moreover, self-assessment acts as an incentive (Eva & Regehr, 2005), helps students to improve in the future (Poon et al., 2009; Yan & Brown, 2017; Summers et al., 2019) and know themselves (Summers et al., 2019) by establishing their role and identity as professionals (Bourke, 2014). Still, self-assessment helps students participate in self-regulated practice in their spare time (Han & Riazi, 2018), makes them more responsible for their learning (Seifert & Feliks, 2019), orientates ontological knowledge and professional identity in higher education and develops metacognitive strategies (Bourke, 2018), because self-assessment is a tool for building metacognition (Mok et al., 2006). McCarthy et al. (1985) underline the importance for college freshmen to self-assess their writing skills and define self-assessment as assessment of self-efficacy. In addition, self-assessment is an ability that is essential for the successful participation of students in lifelong learning (Boud, 1989, 1995; Dearnley & Meddings, 2007) as students learn lifelong learning skills (Mehta & Danielson, 1999) and self-assessment promotes lifelong learning for continuous professional development (Han & Riazi, 2018), whereas the use of self-assessment is in line with society's need for lifelong students (Dochy et al., 1999; Logan, 2015).

With regard to the dimension *reflection*, Brown and Glasner (1999) note that all self-assessments involve reflection, but reflection does not always lead to self-assessment. From their ascertainment it emerges that reflection is a basic process of self-assessment, which justifies the great presence of this element in relation to other dimensions in definitions and characteristics of self-assessment. The dimension reflection involves the judgment of the achievements and the quality of them, critical examination and identification or assessment of strengths and weaknesses, or identification of gaps in knowledge, as it results from definitions such as the following, in which the self-assessment is defined as "... *the ability to critically examine oneself and appraise professional strengths and weaknesses...*" (Fjortoft, 2006, 1). Moreover, the comparison by the students of performance or learning with defined goals or standards that may or may not have been chosen by them (Boyd & Cowan, 1985) and the assessment of the extent to which they have met the criteria and standards (Boud, 1986) insert the student in a reflection process. Still, in definitions such as the following, it

clearly appears the element of reflection: "*The self-assessment which can be regarded as either a process or an activity involves reflection, but not all reflection is self-assessment...*" (Li & Chen, 2016, p. 782). Furthermore, Sullivan and Hall (1997) underline that self-assessment is a tool of reflection and learning. Other authors mention that reflection is a skill developed by self-assessment (Dearnley & Meddings, 2007). Still, the self-assessment process itself has been characterized as a reflective process where young professionals can enhance their understanding through practical implementation in their professional field when participate in it (Bourke, 2014), whereas Davies and Wavering (1999) characterize self-assessment as a form of alternative assessment that uses reflection both as a process and as a product. Stefani (1998) notes that academic staff should support students to reflect on their performance from the point of view of improvement, while the use of self-assessment, peer-assessment and co-assessment is consistent with the need for lifelong students who constantly reflect on their behavior and the learning processes they experience (Dochy et al., 1999). Finally, Siles-González and Solano-Ruiz (2016) when refer to the students' role in the self-assessment, note that students know the experiences of the learning-teaching process through reflection on learning and critical thinking.

The dimension *collaboration/involvement* is reported to a lesser extent than the previous dimensions and concerns the participation of students in expressing their judgment about their learning (Tan, 2008), the active involvement of students in assessment procedures (Carless et al., 2006), in the assessment of their learning (Boud & Falchikov, 1989), and in the decision-making for the standards (Boud, 1986) and the criteria (Boud, 1986; Boud, 1992; Poon et al., 2009), namely the formulation of the assessment criteria (Tan & Keat, 2005). In particular, the element of collaboration arises from the fact that students collaborate with tutors to determine the criteria (Somervell, 1993), as students participate in the procedures for determining what is good work and what characteristics it should have (Boud, 1995). In addition, Stefani (1998) notes that self-assessment is a capacity that is enhanced through collaboration between the students, the tutors, and the students' peers, whereas, Dearnley and Meddings (2007) mention that self-assessment is a popular practice and one of its positive characteristics is that it integrates the dialogue between teachers and students.

The dimension *learning-orientation*, appears in one quarter of the definitions and approaches of the concept of self-assessment in higher education and professional training. In particular, self-assessment is referred as a learning tool (Sullivan & Hall, 1997; Mehta & Danielson, 1999; Dochy et al., 1999), that focuses on learning (Brown & Glasner, 1999), as a process that aims at assessing learning (Boud & Falchikov, 1989) or as noted by Boyd and Cowan (1985) self-assessment involves the objective comparison of learning with defined standards or goals. Moreover, self-assessment promotes learning (Carless et al., 2006), encourages a deeper approach to learning (Bourke, 2014) and it is procedure-oriented rather than outcome-oriented (Li & Chen, 2016). Finally, Huang (2016) states that the core of self-assessment studies is to facilitate and develop student learning through the process of self-assessment, while for Bourke (2018) self-

assessment is a tool that reflects the collaboration between students and teachers in learning and assessment and tests the relationship between assessment and learning.

Self-assessment is also referred as feedback that students give to themselves from themselves (Andrade & Du, 2007) and provides information on learning as well as the teaching process and its assessment (Mehta & Danielson, 1999), the performance (Yan & Brown, 2017), but also the ability of students (Isenberg et al., 2015), so it is a feedback tool and Huang (2016) notes that students can benefit from the educational inputs they receive. Additionally, Hanrahan and Isaacs (2001) note that feedback is one of the reasons that self-assessment process occurs, and finally, Wanner and Palmer (2018) underline that the development of feedback skills are central aspects of self-assessment. Regarding the particular dimension of *feedback*, there is no so frequent report of this within the definitions of self-assessment.

The dimension *formative assessment* within the definitions of self-assessment is reported slightly less than the dimension *feedback*. Analytically, self-assessment is mentioned as an important formative assessment tool for professions such as interpretation (Han & Riazi, 2018), and it can be used very easily for formative purposes (Dochy et al., 1999), while other researchers emphasize its dual use, for formative and summative assessments (Boud & Falchikov, 1989; Bourke, 2014; Bourke, 2018). The next dimensions, *monitoring*, *quality learning* and *review/control* have an extremely small presence within the definitions.

Eva and Regehr (2005) note that self-assessment functions inter alia as a mechanism of continuous monitoring. The dimension *monitoring* is reported to a small extent and is linked to the monitoring of one's performance, which is a key feature of professional work (Boud, 1989). Furthermore, in higher education through self-assessment which can be implemented with exit cards and journals, the students' thinking can be monitored (Davies & Wavering, 1999).

The dimension *quality learning* concerns the quality of tasks (Poon et al., 2009), of the learning procedure and of the outcomes that students are asked to assess and on which they reflect (Yan & Brown, 2017).

Regarding the dimension *review/control*, as reported by Somervell (1993), self-determined assessment is a type of self-assessment in which the control of the instrument and outcomes should be placed in the hands of the learner.

5. Conclusions

This study focused on the conceptual analysis of student self-assessment in higher education and professional training by collecting and studying elements of self-assessment in books, scientific texts and articles in journals and conferences.

Nine concepts emerged through this analysis, which were included per three in a broader category. Specifically, *student-centered pedagogy*, *feedback* and *learning orientation* have been included in the broader category "context". *Quality learning*, *collaboration/involvement* and *formative assessment* were included in the category "student

role" and, finally, *monitoring*, *reflection* and *review/control* were included in the category "processes".

In particular, *student-centered pedagogy* is the element that prevails in the category "context", the element *collaboration/involvement* prevails in the category "student role" and the element or dimension *reflection* prevails in the category "processes".

Conceptual approaches and self-assessment features that were studied in publications about higher education and professional training are primarily based on the dimension *student-centered pedagogy*, as self-assessment focuses on the student, whereas the process should be clear to students. In addition, there are several benefits that students can gain from the self-assessment process, such as the professional development.

The concept of self-assessment also incorporates the dimension *reflection* to a large extent compared to other dimensions, because self-assessment is a process that involves reflection or otherwise it is a reflective procedure. Additionally, through self-assessment, students reflect on their performance, critically examine, identify and assess strengths and weaknesses in their learning or occupational abilities and weaknesses, differences in knowledge and check whether they meet the requirements, criteria and standards of a task.

Furthermore, *collaboration/involvement* is a dimension that is reported less in definitions, but it is also an important element. Particularly, self-assessment is a process that involves students in assessing their learning and making decisions about the assessment criteria. Still, the dialogue between students and teachers is considered as one of the positive components of self-assessment, whereas the cooperation between them is something that enhances self-assessment ability.

Self-assessment is learning-oriented, as it aims to assess, develop and promote learning, and therefore it functions as a learning tool that emphasizes the process and not the outcome. However, the dimension *learning orientation* does not cover a large part of the definitions compared to the three dimensions outlined above.

Self-assessment plays an important role in formative assessment, however, its formative use is not reported in definitions very often, whereas in some cases the dual purpose of self-assessment, namely its use for formative and summative assessment is obvious.

Also, the presence of dimension *feedback*, is equally small. The concept of self-assessment is the same as that of feedback, as the first is reported as a process where students collect information about their performance, the teaching and learning process or it is also reported as a feedback that one receives for oneself, while on the other hand feedback can also be reported as one of the main reasons for the self-assessment process to be held as students can gain from the educational inputs that they receive.

Moreover, the concept of self-assessment identifies with the concept of *control* that can be placed in the hands of the student.

Quality learning that is related to quality elements of the work, the learning process and the product of learning as a dimension of the definition of self-assessment, and the dimension *monitoring*, which is about monitoring of progress or even the

thinking of students, are both among the elements that are reported less in comparison to other dimensions.

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