Student Self-Assessment in Higher Education: The International Experience and the Greek Example

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Abstract

This study is a review of 34 empirical studies internationally and in Greece from 2008-2018 and aims at investigating: a. the implementation of student self-assessment in Higher education and the outcomes on students, b. the ability of students to self-assess accurately and the factors that affect this ability. According to the main findings, self-assessment is implemented through various ways that include inter alia electronic and non-electronic self-assessment tools. Internationally, most studies have examined and proved the contribution of student self-assessment to improvement of performance and learning. Moreover, self-assessment develops self-regulating learning, increases self-confidence, motivates students to ask guidance from their professors and help from their peers, increases self-efficacy, students' awareness of self-assessment ability and self-control, makes students change attitudes towards course, prepares employability skills of students, reduces anxiety for assessment, increases students' responsibility about their learning, makes them have a critical view on their work and develops critical thinking skills. In Greece, it was found only one study that examined the implementation of student self-assessment in Higher education and its impact on students and findings indicate that self-assessment through a quiz improves performance, self-regulation, motivates students to try more and helps them identify gaps in their learning. Student self-assessment ability and factors that affect this ability have been examined only internationally, so in Greece there is a research gap concerning these parameters. Tertiary students can self-assess accurately and this ability depends on specific factors such as confidence, prior achievement, learning style, scaffolding from professors, training, dialogical interaction and dynamic assessment.

Keywords: accuracy, benefits of student self-assessment, higher education, self-assessment ability, student self-assessment

1. Introduction

Educational assessment has been a prominent element of education in recent years (Keane & Griffin, 2016). Nowadays, assessment in Higher education moves from conventional testing to learning evaluation (Logan, 2015) and has specific goals. Specifically, it introduces methods that are effective, promotes learning, motivates students, protects and defines academic standards, measures the learning results with validity and reliability, emphasizes on the achievement of individual students and focuses on learning (Li & Chen, 2016). Increasingly, teachers are called to involve students in the assessment procedures (Logan, 2015). According to Langan et al. (2008) self and peer assessment are very important skills for professional development and lifelong learning, so there is an increasing interest for including them in Higher education assessment. Especially, student self-assessment is one of the basic field of study in education psychology and contemporary education (Panadero, Jonsson, & Botella, 2017). Despite the fact that student self-assessment can play a very basic role in development of professional ability and in learning and leads to the increased interest of educators and researchers for this type of assessment (Lew, Alwis & Schmidt, 2010), it seems that it is not very popular for several reasons. First, students consider that teachers are responsible for the assessment process. Second, teachers don't trust students for judging and third, students don't have the ability to self-assess (Thawabieh, 2017).

The ability of students to self-assess their work has been one of the implicit goals in Higher education (Boud, Lawson & Thompson, 2013). The intention of self-assessment is to make students be active learners and reflect on

their learning outcomes, styles and processes (Topping, 2003). Teachers should know how self-assessment can be a key process in any learning activity and students need understand their role as agents within the learning and assessment procedure and commit to be realistic in their self-assessments (Harris & Brown, 2018).

According to literature review of Sluijsmans, Dochy, & Moerkerte (1999) tertiary students have the ability to self-assess accurately. Accuracy of student self-assessment is very important so steps should be taken to maximize it (Harris & Brown, 2018). Feedback, ability of student, practice, differences in gender and culture, the nature of the assessment criteria, assessment tools, assessed subject and performance, the degree of scaffolding and advancement in a task affect the accuracy of student self-assessment (Topping, 2003). Still, Ross (2006) supports that specific student training contribute to the enhancement of the strength of student self-assessment. Moreover, Harris and Brown (2018) argue that self-assessment is a complicated practice to implement successfully in the class. Andrade and Valtcheva (2009) underline some factors that are important for successful implementation of student self-assessment such as teaching the application of criteria to students for assessing their work, the provision of efficient time to students to revise their work after the procedure of self-assessment, the provision of feedback and help to students and the definition of criteria that students use for assessing their work.

The literature review shows that self-assessment has positive outcomes for students. Specifically, student self-assessment improves performance, enhances lifelong and deep learning, social competencies, makes students participate in learning, develops their autonomy, make them feel that they can control their own assessment and decreases student anxiety. Furthermore, self-assessment prepares students for a democratic society and improves cognitive (Wride, 2017), metacognitive abilities (Topping, 2003; Wride, 2017), performance (Rolheiser & Ross, 2001; Ross, 2006) and enhances self-efficacy (Rolheiser & Ross, 2001) and motivation (Rolheiser & Ross, 2001; McMillan & Hearn, 2008). Furthermore, self-assessment helps students identify strengths and weaknesses of their work (Ross, 2006). Besides, self-assessment is a procedure where students can provide feedback to themselves and decide for the following steps to enhance their performance (McMillan & Hearn, 2008). According to Alonso-Tapia and Panadero (2010) there are not many studies that examine the impact of student self-assessment on self-regulation.

The contribution of this literature review is to provide evidence for student self-assessment in Higher education. Especially, the aim of this paper is to summarize and provide feedback on the recent studies on student self-assessment in Higher education all over the world over the last decade (2008-2018). This paper can provide professors with useful evidence about student self-assessment concerning implementation ways and tools, the factors that are crucial for effective implementation of student self-assessment, the positive outcomes for students and the ability of students to self-assess. Moreover, this study identifies gaps internationally and in Greek Higher education and makes proposal for further research. The present study includes the following sections: the theoretical framework, the aim of the study and the research questions, the method, the results, the discussion of the main findings, conclusions, implications and proposals for further research.

2. Theoritical Framework

Self-assessment is a procedure where students judge the quality of their own work according to specific criteria for improving their work in the future (Rolheiser & Ross, 2001). Students judge their own learning and achievement and decide about action for future progress in learning (Sebba et al., 2008). It is an act where students describe and assess their academic abilities and work (Harris & Brown, 2018). They collect information and compare their progress or performance to specific criteria or goals and revise their work based on these criteria or goals (Andrade & Valtcheva, 2009). Moreover, self-assessment helps students not only describe but also evaluate their work and it is a very important element of current conceptions of formative assessment (Brown, Andrade, & Chen, 2015).

Self-assessment is a type of assessment that refers to the involvement of students in expressing their view of learning, and particularly their achievements and learning outcomes. Hence, self-assessment is a way of enhancing the role of students as active participants in their learning and it is usually used as a formative assessment that helps students reflect on their learning processes and outcomes (Sluijsmans et al., 1999). Student self-assessment is qualitative assessment of the learning procedure and of its results, based on predefined quality criteria and it doesn't focus on the score, but on understanding this procedure, where the students can learn from their mistakes and achievements. Therefore, self-assessment is a reflection process (Panadero & Alonso-Tapia, 2013).

Petropoulou, Kasimati & Retalis (2015: 131) suggest the following stages of student self-assessment.

- Explanation of the goals per learning unit and link of them to the desired learning outcomes.

- A clear explanation of the criteria to students and confirmation of their progress using examples.
- Description of the educational design in a detailed and clear way (means, flow of educational process, etc.).
- Implementation of self-assessment procedure for evaluating current progress of learning.
- Provide feedback to students to achieve the expected outcomes.

Furthermore, student self-assessment can be done with various ways, quantitatively, qualitatively or descriptively, so students acquire self-knowledge (Papageorgiou, 2017). In particular, student self-assessment includes a wide variety of mechanisms and techniques through which the students describe and evaluate the quality of learning procedure and its products (Panadero, Brown & Strijbos, 2016). Finally, for implementing student self-assessment process there is a range of tools or techniques such as self-assessment checklists, scripts, templates, rubrics, self-marking, estimating future performance and self-assessment templates (Harris & Brown, 2018).

3. Aim of the Study and Research Questions

The present paper is a review of 34 empirical studies and examines the topic of student self-assessment in Higher education in Greece and internationally the last decade (2008-2018). Specifically, the main purpose of this study is to investigate: a. the implementation tools of student self-assessment and the benefits that self-assessment has on students, b. the student self-assessment ability and the factors that affect this ability. Also, this study identifies gaps and makes proposals for further research.

The research questions that this review aims to answer are:

1st: How student self-assessment is implemented in Higher education and what are the benefits of its implementation?

2nd: Can students self-assess accurately and what are the factors that affect this ability?
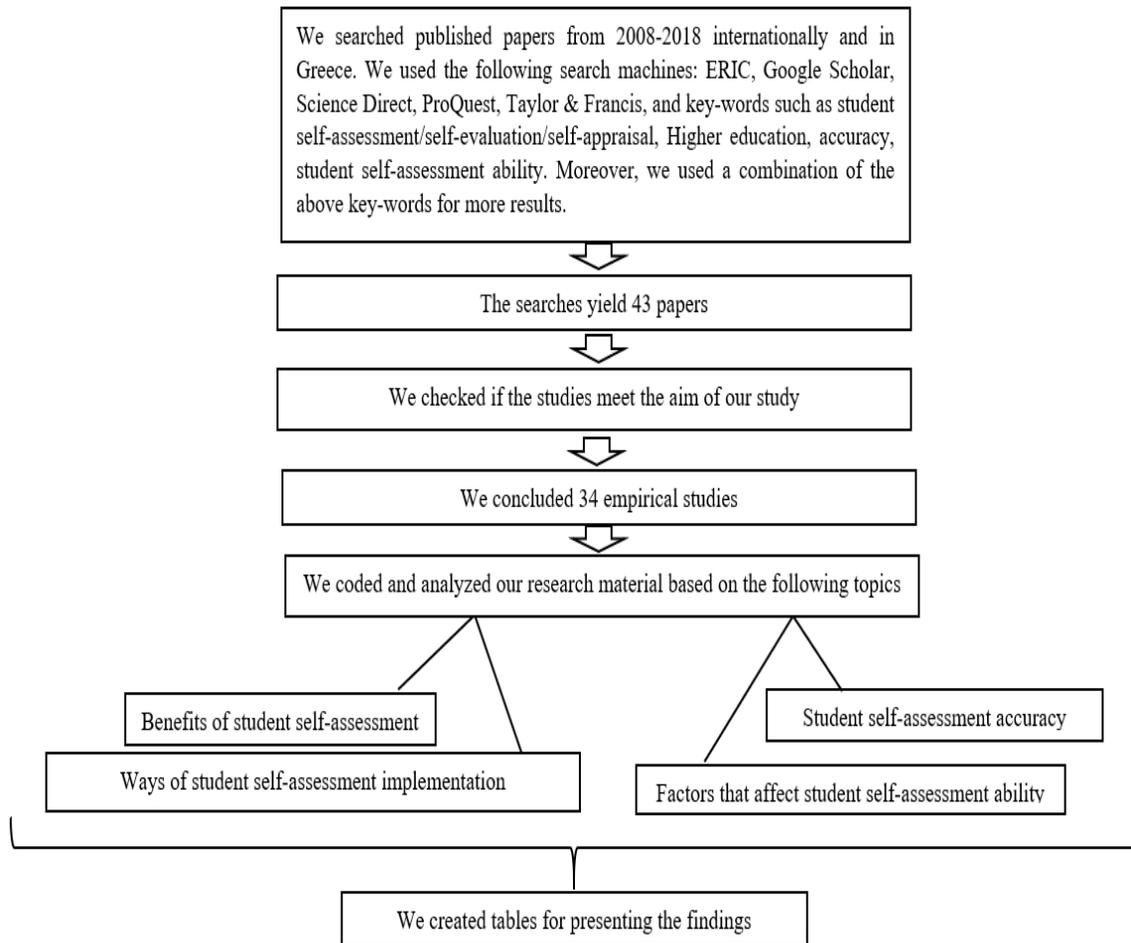
4. Method

Table 1 presents the assessment criteria we used for selecting studies.

Table 1. Assessment Criteria for Studies

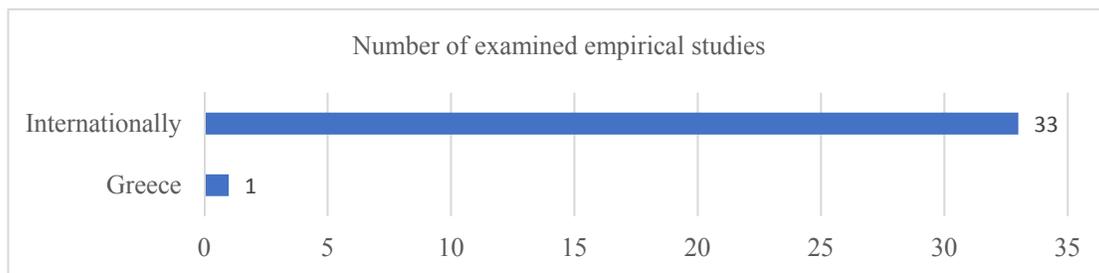| Assessment criteria for studies	
Research questions	a) How student self-assessment is implemented in Higher education and what are the benefits of its implementation? b) Can students self-assess accurately and what are the factors that affect this ability?
Geographical distribution	Global
Year of publication	2008-2018
Language	Greek, English
Type of studies	Empirical studies

Figure 1 shows the steps of methodology we followed.

We searched published papers from 2008-2018 internationally and in Greece. We used the following search machines: ERIC, Google Scholar, Science Direct, ProQuest, Taylor & Francis, and key-words such as student self-assessment/self-evaluation/self-appraisal, Higher education, accuracy, student self-assessment ability. Moreover, we used a combination of the above key-words for more results.

The searches yield 43 papers

We checked if the studies meet the aim of our study

We concluded 34 empirical studies

We coded and analyzed our research material based on the following topics

Benefits of student self-assessment

Ways of student self-assessment implementation

Student self-assessment accuracy

Factors that affect student self-assessment ability

We created tables for presenting the findings

Figure 1. Methodology

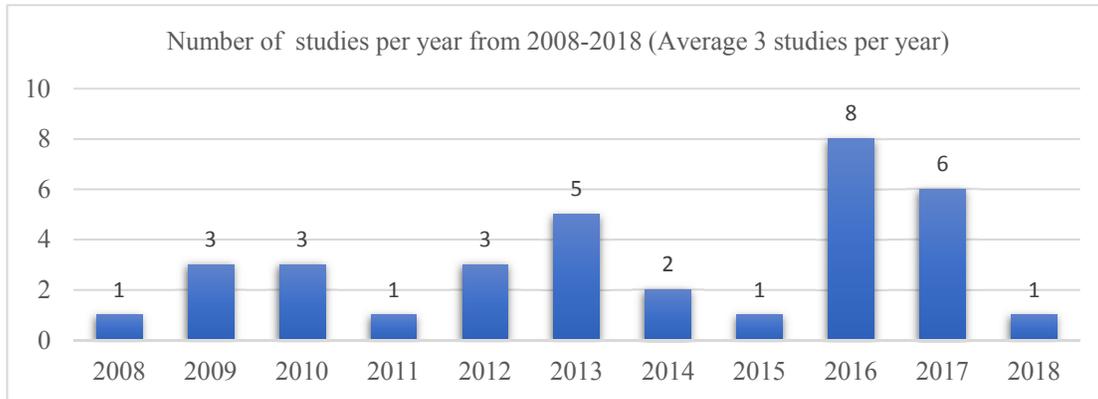## 5. Results

Figure 2 presents the number of examined empirical studies in Greece and internationally.

Number of examined empirical studies

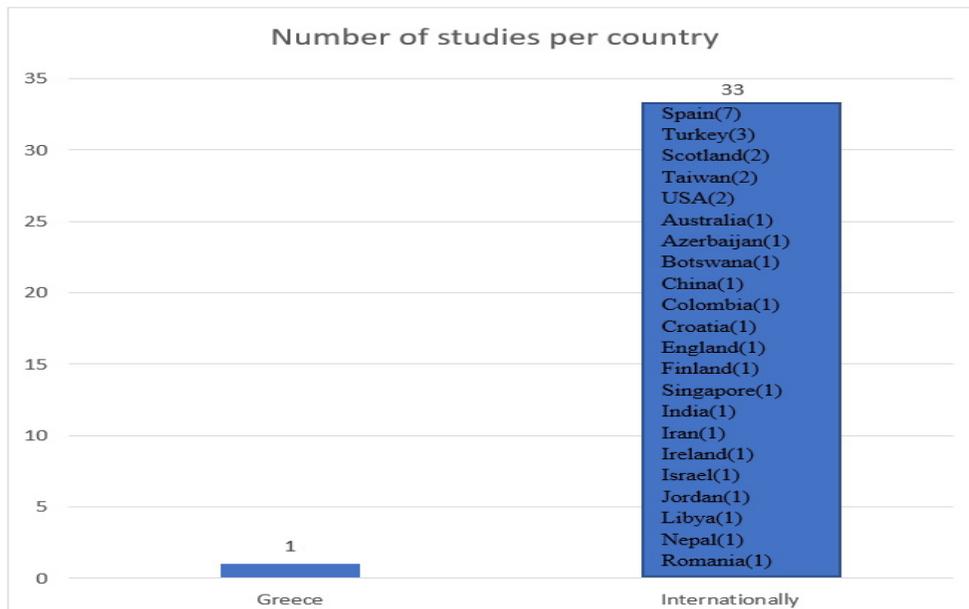Internationally   33

Greece   1

0   5   10   15   20   25   30   35

Figure 2. Number of Examined Empirical Studies

Figure 3 shows the number of studies per year from 2008-2018.

Number of studies per year from 2008-2018 (Average 3 studies per year)

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Studies	1	3	3	1	3	5	2	1	8	6	1

Figure 3. Number of Studies per Year from 2008-2018

Figure 4 shows the number of studies per country.

Number of studies per country

Greece: 1

Internationally: 33
Spain(7)
Turkey(3)
Scotland(2)
Taiwan(2)
USA(2)
Australia(1)
Azerbaijan(1)
Botswana(1)
China(1)
Colombia(1)
Croatia(1)
England(1)
Finland(1)
Singapore(1)
India(1)
Iran(1)
Ireland(1)
Israel(1)
Jordan(1)
Libya(1)
Nepal(1)
Romania(1)

Figure 4. Number of Studies per Country

Research question 1: How student self-assessment is implemented in Higher education and what are the benefits of its implementation?

Table 2 presents how self-assessment is implemented in Higher education and the benefits of its implementation.

Table 2. Ways of Implementation of Student Self-Assessment in Higher Education and Benefits on Students

Researches (Year) Country	Research method-Sample size	Implementation of student self-assessment	Aim of the study	Main findings
1. Hung (2009) Taiwan	Qualitative case study (2 students)	E-portfolio	Investigation of how foreign language students use self-assessment when they write in their e-portfolios.	E-portfolio promotes student self-assessment practice and encourages self-directed language learning.
2. Leaf et al. (2009) USA	Quantitative research (115 students)	On line self-assessment tool	Investigation of the effectiveness of an online self-assessment tool to a traditional curriculum for 2nd year students in medical education.	On line self-assessment tool fills knowledge gaps, enhances learning, improves performance and provides opportunities to practice exam questions.
3. Pournias (2009) Greece	Quantitative research (72 students)	Quiz (Quiz report analysis for moodle)	Development of the Quiz Report Analysis to present the results of student self-assessment through Quiz module of Moodle.	The Quiz report analysis enables students to get feedback on their performance in each test, compare their performance with that of their peers, assess their level of knowledge and have a picture of their learning. In addition, this tool helps students improve their performance, and self-regulation. Still, it motivates the students to try more and helps them identify gaps in their learning.
4. Ibabe & Jauregizar (2010) Spain	Non-experimental research method (116 students)	Self-assessment material with Hot-Potatoes	Development of self-assessment material with Hot-Potatoes and evaluation of the extent to which this material has a beneficial effect on students.	The use of interactive assessment improves academic performance. Still, students with low motivation levels used self-assessment material.
5. Chen (2010) Taiwan	Quantitative research (37 students)	Web-based Mobile Assessment Participation System	Proposal of a web based system that can contribute to the effectiveness of self and peer-assessment.	Students expressed the opinion that their performance has been improved significantly.
6. Antal & Koncz (2011) Romania	Quantitative research (10 students)	On line self-assessment system	Development of a self-assessment system and monitoring its use by students. In addition, proposal of a graphic that presents students' knowledge and provides a more detailed graphical	Self-assessment system helped students in their preparation for the test. Moreover, students found it useful and noticed that it helped them in their individual learning.

				depiction of the progress of student knowledge over time.
7. Tai (2012) Scotland	Mixed methods research design with sequential explorative design (251questionnaires and 18 interviews with students)	Student self-assessment within the framework of Biggs' 3P learning model.	Investigation of students' experiences of participation in assessment.	Self-assessment practice develops self-regulating learning and increases self-confidence.
8. Alishah, & Dolmaci (2013) Turkey	Quasi-experimental design (54 students)	Continuous self-assessment	Investigation of the result of continuous self-assessment on students' self-efficacy.	Continuous self-assessment increases significantly self-efficacy.
9. Duers (2013) Scotland	Qualitative research (25 students)	Peer review and self-assessment	Investigation of students' conceptions and implementation of peer review and self-assessment.	Both peer review and self-assessment help students receive feedback on their knowledge, understanding and skills they have developed.
10. Panadero, Alonso-Tapia, & Reche (2013) Spain	Experimental research (69 students)	Rubrics Self-assessment scripts	Comparison between the effect of rubrics and scripts on performance, self-efficacy and self-regulation.	Scripts contribute to development of self-regulating learning but rubrics have a negative effect on it. Moreover, no significant effect has been found on self-efficacy or academic performance.
11. Wolffensperger & Patkin (2013) Israel	Qualitative research (17 students and 2 lecturers)	Student self-assessment in a procedure of co-teaching	Investigation of self-assessment in a procedure of co-teaching.	Self-assessment contributes to problem-solving. Moreover, it increases students' awareness of development of self-assessment ability and self-control. Moreover, self-assessment makes students change attitude towards the course and recognize the importance and contribution of it to their learning.
12. Ćukušić, Garača, & Jadrić (2014) Croatia	Quantitative and comparative study (1.379 students)	Online self-assessment test	Investigation of the effects of the online self-assessment tests on students.	There is a link between the students' success and the online self-assessment.
13. Panadero & Romero (2014) Spain	Experimental research (Quasi-experiment, 218 students)	Rubric	Comparison between the effects of using rubrics for self-assessment and using no specific tool for self-assessment.	Students who used rubrics mentioned higher accuracy, learning strategies use and higher performance but they faced more problems connected with stress and higher performance or avoidance self-regulation

				that influenced learning negatively.
14. Bhandary, Ghimire, & Shrestha (2016) Nepal	Mixed methods research design (58 students)	Web based self-assessment tool	Evaluation of a web based self-assessment tool.	Web based self-assessment tool makes students self-access continuously and motivates them to ask guidance from their professors and help from their peers. Still, it encourages life-long and self-directed learning habits.
15. Gurbanov (2016) Azerbaijan	Quantitative research (31 professors, 100 students)	Peer and self-assessment	Investigation of students' and professors' beliefs about the grading in student peer and self-assessment.	Peer and self-assessment reduce anxiety for assessment, increase students' responsibility about their learning and make students have a critical eye on their work and on the work of their peers.
16. Ozarslan & Ozan (2016) Turkey	Quantitative research (677 students)	Online self-assessment quiz taking behaviors	Investigation the student self-assessment quiz taking behaviors in an online course.	Students who used the self-assessment quiz taking behaviors frequently were more satisfied with the course, had higher degree of perceived learning and higher scores in the final exam.
17. Rivas & Arrufat (2016) Spain	Mixed methods research design (87 students)	Electronic rubrics for self and peer assessment	Investigation of the use of erubrics to assess learning.	Erubrics reinforce academic performance, learning and promote responsibility.
18. Li & Chen (2016) China	Quantitative research (60 students)	Self and peer-assessment	Investigation of peer and self-assessment as effective tools that can cause a change in the way of student learning.	Peer and self-assessment shift student learning methods from surface to deep approaches to learning and develop learning environment.
19. McKevitt (2016) Ireland	Mixed methods research design (35 students)	Exemplars, self-assessment, criteria, feedback	Investigation of how student self-assessment and feedback from tutor influence students' performance and assessment ability. Examination of students' experience.	Students improved their performance in an assignment.
20. Sharma et al. (2016) India	Quantitative research (89 students)	Self-assessment	Investigation of the effect of student self-assessment on academic performance and examination of students' and professors' perceptions about self-assessment as a tool that contributes to	Self-assessment motivates students and makes them be more interested in subjects that lead to higher academic performance. Still, self-assessment enhances learning and contributes to the development of critical

			enhancement of learning.	skills.
21. Duque Micán & Cuesta Medina (2017) Colombia	Mixed methods research design (24 students)	Systematic cycle where self-assessment is applied as a formative assessment source	Investigation of the effect of self-assessment on vocabulary ability on students' oral fluency.	Students became more able to judge, self-monitored and reacted towards their learning and language gains. They could set learning commitments and identify weaknesses and strengths in their learning. Besides, students used learning strategies.
22. Fraile, Panadero, & Pardo (2017) Spain	Experimental research (65 students)	Co-creating rubrics (students take part in the creation of rubrics)	Comparison between the influence of co-creating rubrics and use of rubrics without the process of co-creating.	Co-creating rubrics may activate learning strategies and have a positive effect on self-regulation and performance.
23. Elgadal (2017) Libya	Experimental research (100 students in Libya and 32 Libyan students who study in England)	Self-assessment sheet, post-study feedback form	Investigation of the effect of self-assessment on the writing of EFL students.	Most students who used self-assessment had a positive attitude towards the procedure of self-assessment and improved their drafts because they made surface and meaning revisions whereas the students who didn't use self-assessment made a few surface revisions.
24. Machera (2017) Botswana	Quantitative research (90 students)	Self and peer assessment	Investigation whether self and peer assessment can increase students' possibilities for access to employment.	Self and peer assessment give important feedback that improves teaching. Moreover, both self and peer assessment contribute to self-directing and prepare employability skills of students.
25. Ndoye (2017) USA	Qualitative research (16 students)	Self and peer assessment	Investigation of students' perceptions about peer and self-assessment procedures and examination how these procedures contribute to their learning.	Self and peer assessment help students identify learning gaps and fill these gaps by developing strategies.

Research question 2: Can students self-assess accurately and what are the factors that affect this ability?

The following table 3 presents student self-assessment ability and the factors that affect this ability.

Table 3. Student Self-Assessment Ability and the Factors That Affect This Ability

Researchers (Year) Country	Research method-Sample size	Aim of the study	Main findings
1. Langan et al. (2008) Spain	Quantitative research (60 students)	Investigation of the influence of gender and level of achievement on marks.	Female students underestimated their performance when they self-assessed. Grades by peer assessment were more associated with the grades from professors than the grades from self-assessment. Moreover, students with low achievement over-marked themselves.
2. Lew et al. (2010) Singapore	Quantitative research (2 studies, the sample size of the first study was 3.588 students and the sample size of the second study was 936 students)	Investigation of accuracy of student self-assessment ability and examination of the time as a factor that may affect this ability. Moreover, examination if students' beliefs about the utility of self-assessment, influences accuracy.	Students could assess themselves accurately to a limited extent. Moreover, students who are academically capable could self-assess with higher accuracy than students who are less capable. Accuracy of student self-assessment wasn't improved over time. There was no link between the accuracy of student self-assessment and students' beliefs about the utility of self-assessment process.
3. Chen (2010) Taiwan	Quantitative research (37 students)	Proposal of a web based system that can contribute to the effectiveness of self and peer-assessment.	There was no consistency between professors' and students' grades. This may be happened because students received first feedback from their peers and then revised their work.
4. Alaoutinen (2012) Finland	Quantitative research (145 students)	Investigation of the factors that influence performance and self-assessment accuracy.	Students who are advanced are more able to self-asses accurately than students who are novices. Clearly visual, active, balanced sequential, and sensing students are more accurate.
5. Sasmaz Oren (2012) Turkey	Quantitative research (203 students)	Investigation of the impact of a) prior students' experience upon self and peer assessment and b) gender, on scores.	Based on gender female students had higher mean scores than male students in all types of scoring. With regard to past experience there wasn't found any significant difference between students who had experience in examined assessment procedures and students who didn't have experience.
6. Boud et al. (2013) Australia	Quantitative (2.196 self-assessments, 182 students)	Examination of the relationship between the voluntary participation of students in self-assessment and the students' ability to self-assess.	Overall students' assessments were aligned with those of professors, but weaker students had little improvement.
7.	Qualitative research (17	Investigation of	At the beginning of the process of

Wolffensperger & Patkin (2013) Israel	students and 2 lecturers)	self-assessment in a procedure of co-teaching.	self-assessment students had difficulty, displayed hesitation and they couldn't self-assess accurately. Students who had higher achievement didn't' assess themselves higher than
			their professors and vice versa. Moreover, students' awareness of development of self-assessment ability was increased.
8. Alemi (2015) Iran	Quantitative research and treatment (22 students)	Investigation of EFL students' self-assessment and self-scoring of their writing competence and examination of the influence of dynamic assessment on students' self-assessment accuracy. Examination of the interrelationships among professors' scoring, self-scoring and self-assessment in the writing performance.	Scaffolding from professors, dialogical interaction and dynamic assessment can help students self-assess more accurately.
9. Domínguez, Jaime, Sánchez, Blanco, & Heras (2016) Spain	Quantitative (97 students)	Investigation of the difference and consistency among online self, peer, external and professor assessments.	Existence of high-level of consistency across all types of assessment.
10. McKevitt (2016) Ireland	Mixed methods research design (35 students)	Investigation of how procedure of student self-assessment affects performance and assessment ability. Examination of students' experiences.	Students can assess their performance similarly to the professor using the same criteria, whereas numerical and written feedback from professors can affect the assessment procedure.
11. Sharma et al. (2016) India	Quantitative (89 students)	Investigation of the effect of student self-assessment on academic performance and examination of students' and professors' perceptions about self-assessment as a tool that contributes to enhancement of learning.	There was a significantly positive correlation between professor and student marking.
12. Thawabieh (2017) Jordan	Quasi-experimental research (70 students)	Comparison between professors' assessment and students' self-assessments.	Training in implementation of student self-assessment can help students self-assess accurately.
13. Hosein & Harle (2018) England	Quantitative (63 students)	Investigation of the factors that affect students' competence to self-assess accurately their work in a mathematical subject test.	Students' self-assessment accuracy is related to confidence and prior achievement in Mathematics. Students with low and high prior achievement in Mathematics are better self-assessors than those with moderate prior achievement.

6. Discussion

The average of empirical studies per year the last decade from 2008-2018 that examined the results of implementation of student self-assessment in Higher education, the ability of students to self-assess accurately and the factors that affect this ability is (N=3). Most of the studies are from international area (N=33). Spain is the country with most studies (N=7), whereas in Greece it was found only one research.

Analytically, the findings of the present study indicate that internationally, student self-assessment is implemented through a variety of ways and has positive effect mainly on learning and performance. Specifically, in the field of electronic self-assessment, e-portfolio promotes self-assessment and encourages self-directed language learning (Hung, 2009), on line self-assessment tool helps students fill knowledge gaps, improves performance as students can practice exam questions (Leaf et al., 2009) and encourages life-long and self-directed learning habits (Bhandary et al., 2016). Moreover, self-assessment material with Hot-Potatoes (Ibabe & Jauregizar, 2010), on-line self-assessment test (Ćukušić et al., 2014) and web based mobile assessment improve academic performance (Chen, 2010), whereas self-assessment system helps students in their individual learning and prepares them for future test (Antal & Koncz, 2011). Online self-assessment quiz taking behaviors increases perceived learning and improves performance (Ozarslan & Ozan, 2016), whereas electronic rubrics reinforce learning and academic performance (Rivas & Arrufat, 2016). Regarding the above research evidence of this review, digital self-assessment tools can be implemented in the context of student self-assessment in Higher education and have positive outcomes on students. Harris and Brown (2018) underlines that electronic self-assessment can be a very interesting and promising space for student self-assessment and there is need for further investigation.

Both peer and self-assessment help students receive feedback on their knowledge, understanding and skills they have developed (Duers, 2013), contribute to the shift of student learning method from surface to deep approaches to learning (Li & Chen, 2016), improve learning and promote student responsibility towards learning (Ndoye, 2017). Rubrics promote the use of learning strategies and improve performance (Panadero & Romero, 2014), whereas the process of co-creating rubrics may activate learning strategies and have a positive effect on performance (Fraile et al., 2017), whereas the implementation of a systematic cycle where self-assessment is applied as formative assessment source makes students set learning commitments, use learning strategies and identify weaknesses and strengths in their learning (Duque Micán & Cuesta Medina, 2017). This finding is consistent with the finding in Ross (2006) where self-assessment helps students identify strengths and weaknesses in their work. Moreover, exemplars, provision of feedback and use of criteria as parts of self-assessment procedure improve performance (McKevitt, 2016), whereas the self-assessment sheet and the post-study feedback form help students make surface and meaning revisions of their work (Elgadal, 2017). In general, implementation of self-assessment process leads to higher academic performance and enhances learning (Sharma et al., 2016). From the above research evidence of this review, improvement of performance has also been identified by Rolheiser and Ross (2001), Ross (2006), McMillan and Hearn (2008) and Wride (2017).

Furthermore, web based self-assessment tool motivates students to ask guidance from their professors and help from their peers (Bhandary et al., 2016), whereas self-assessment within the framework of Biggs' 3P learning model develops self-regulating learning and increases self-confidence (Tai, 2012). Still, scripts (Panadero et al., 2013), and involvement of students in creation of rubrics contribute to the development of self-regulating learning (Fraile et al., 2017), whereas continuous self-assessment increases importantly self-efficacy (Alishah & Dolmaci, 2013). Findings also show that student self-assessment in the process of co-teaching contributes to problem-solving, increases students' awareness of self-assessment ability and self-control and makes students change attitudes towards the course and recognize the importance and contribution of it to their learning (Wollfensperger & Patkin, 2013). Still, electronic rubrics foster responsibility (Rivas & Arrufat, 2016), whereas self and peer assessment prepare employability skills of students and make them be competitive in labor market (Machera, 2017), reduce anxiety for assessment, increase students' responsibility about their learning and make them have a critical view on their work and the work of their peers (Gurbanov, 2016). Moreover, self-assessment contributes to the development of critical thinking skills (Sharma et al., 2016). In Greece, it was found only one study where the quiz report analysis for moodle which is used for presenting student self-assessment results helped students improve their performance and self-regulation. Besides, it motivated students to try more and helped them identify gaps in their learning (Pournias, 2009). Some of the previous findings such as decrease of student anxiety has also highlighted by Wride (2017), whereas enhancement of motivation has also underlined by Rolheiser and Ross (2001) and McMillan and Hearn (2008) and enhancement of self-efficacy has also identified by Rolheiser and Ross (2001). Alonso-Tapia and Panadero (2010) mention that there are not many studies that examine the impact of student self-assessment on self-regulation and the present study confirms that as there are a few studies that examine the self-regulation as an

outcome of student self-assessment.

Internationally, findings of this review show that students in Higher education can self-assess accurately (Boud et al., 2013; McKevitt, 2016; Sharma et al., 2016). Self-assessment ability of tertiary students has also been confirmed by Sluijsmans et al. (1999). On the other hand, there are findings that show lack of self-assessment skills (Langan et al., 2008; Chen, 2010) or accuracy of self-assessment to a limited extend (Lew et al., 2010). Harris and Brown (2018) underline that self-assessment is a complicated practice to implement successfully in the class. Indeed, the findings of the present study indicates that at the beginning of student self-assessment students can have difficulty and display hesitation towards self-assessment procedure but students' awareness of development of self-assessment ability can be increased (Wolffensperger & Patkin, 2013).

With regard to the findings of the present study self-assessment ability depends on specific factors. Especially, students who are advanced are more able to self-assess than students who are novices. Moreover, learning style is an important factor that influences this ability as visual, active, balanced, sequential, and sensing students are more accurate (Alaoutinen, 2012). Besides, weaker students have more difficulty to self-assess (Boud et al., 2013), so students who are academically capable can self-assess with higher accuracy than students who are less capable (Lew et al., 2010). Moreover, training in implementation of student self-assessment helps students self-assess accurately (Thawabieh, 2017) and this finding is in line with the finding in Ross (2006) where is supported that student training contributes to the enhancement of the strength of student self-assessment. Still, confidence and prior achievement are related to students' self-assessment accuracy, whereas students with low and high prior achievement are better self-assessors than students with moderate prior achievement (Hosein & Harle, 2018). Furthermore, scaffolding from professors, dialogical interaction and dynamic assessment help students to be better self-assessors (Alemi, 2015), whereas, gender is a factor that influences self-assessment ability as women seem to underestimate their performance when they self-assess (Langan et al., 2008). On the other hand, time and students' beliefs about the utility of the process of self-assessment don't influence accuracy of student self-assessment (Lew et al., 2010). Besides, with regard to relationship between student self-assessment ability and experience, there wasn't found any significance difference between students who had past experience with assessment procedures and students who were inexperienced (Sasmaz Oren, 2012). Some of the above findings that are associated with factors that influence self-assessment ability such as, gender, teach scaffolding and progress of students agree with previous literature (Topping, 2003). In Greece there is no research that examines student self-assessment ability and the factors that influence this ability in Higher education.

7. Conclusions

Most of the studies that examined the outcomes of the implementation of student self-assessment in Higher education, the ability of students to self-assess accurately and the factors that affect this ability are from international area whereas in Greece it was found only one research that examined the impact of student self-assessment on students. Moreover, the average of studies per year is 3 and Spain is the country with most studies.

Specifically, internationally, most studies have examined and proved the contribution of student self-assessment to improvement of performance and learning with very interesting and important findings. Self-assessment has been implemented through various ways that include inter alia electronic or non-electronic self-assessment tools. Still, self-assessment has been implemented in the context of learning models or with other practices such as co-teaching or peer assessment.

Analytically, e-portfolio encourages self-directed language learning, whereas on line self-assessment tools help students fill knowledge gaps, improve performance and encourage life-long and self-directed learning habits. Moreover, self-assessment material with Hot-Potatoes, on-line self-assessment tests and web based mobile assessment improve academic performance. Still, self-assessment system helps students in their individual learning and prepares them for future test, whereas the online self-assessment quiz taking behaviors increases perceived learning of students and improves performance. Besides, electronic rubrics reinforce learning and academic performance.

Both peer and self-assessment help students receive feedback on their knowledge, understanding and skills they have developed, shift student learning methods from surface to deep approaches to learning, improve learning and promote student responsibility towards learning. Furthermore, rubrics promote the use of learning strategies and improve performance, whereas web based self-assessment tool can motivate students to ask guidance from their professors and help from their peers. Co-creating rubric may activate learning strategies and have a positive effect on performance whereas the implementation of a systematic cycle where self-assessment is applied as formative

assessment source makes students use learning strategies, set learning commitments and identify weaknesses and strengths in their learning. Moreover, exemplars, provision of feedback and use of criteria as parts of self-assessment process improve performance, whereas the self-assessment sheet and the post-study feedback form help students make surface and meaning revisions on their work.

Self-assessment within the framework of Biggs' 3P learning model develops self-regulating learning and increases self-confidence. Besides, scripts and involvement of students in creation of rubrics develop self-regulation learning. Still, continuous self-assessment increases significantly self-efficacy. Self-assessment within the context of co-teaching contributes to problem-solving, increases student awareness of self-assessment ability and self-control and makes students change attitudes towards the course and recognize the importance and contribution of it to their learning. Furthermore, electronic rubrics foster responsibility, whereas both self and peer assessment prepare employability skills of students and help them be competitive in labor market, reduce anxiety for assessment, increase students' responsibility about their learning and make them have a critical view on their work and the work of their peers. Still, self-assessment contributes to the development of critical thinking skills.

In Greece it was found only one relevant research where implementation of student self-assessment through the quiz report analysis for moodle improved students' performance, self-regulation, motivated students to try more and helped them identify shortcomings in their learning.

Self-regulating learning, motivation, self-confidence, self-efficacy, self-control, employability skills and students' responsibility have not examined so much in the context of student self-assessment in Higher education. Hence, internationally and in Greece there is need for more investigation of these variables as research has focused more on the impact of student self-assessment on learning and performance. This review reveals that electronic self-assessment is an upcoming research issue of student self-assessment internationally and in Greek Higher education. Besides, the positive outcomes of student self-assessment in Higher education lead to the conclusion that this type of assessment should be implemented more systematically because helps students not only within the context of their studies but also later in their working life providing them with necessary skills.

Student self-assessment ability and the factors that affect this ability have been examined only internationally so in Greece there is a research gap concerning these parameters. Students may have difficulty and show hesitation with self-assessment because it is a complicated process, however students' awareness of development of self-assessment ability can be increased. Tertiary students can self-assess accurately and this ability depends on specific factors. Analytically, students who are advanced are more able to self-assess than students who are novices and learning style seems to influence self-assessment ability as visual, active, balanced, sequential, and sensing students are more accurate. Still, students who are academically capable can self-assess with higher accuracy than students who are less capable. Moreover, students with low and high prior achievement are better self-assessors than students with moderate prior achievement. Confidence, prior achievement, scaffolding from professors, training, dialogical interaction and dynamic assessment are related to students' self-assessment accuracy. Besides, gender is a factor that influences self-assessment ability, as women seem to underestimate their performance when they self-assess. On the other hand, time, beliefs about the utility of the process of self-assessment are factors that don't influence accuracy of student self-assessment, whereas there is research evidence where students who have experience with assessment procedures don't differentiate from students who don't have experience.

8. Limitations and Proposals for Further Research

The present study has several limitations. First, the search of the examined studies is limited to specific bases of data and search machines and second, the review focuses only on tertiary students.

For future research, it is necessary to investigate the student self-assessment ability and the factors that affect this ability in Greek Higher education as there is research gap. Besides, examination of the contribution of student self-assessment to self-regulating learning, self-efficacy and employability skills in Greek Higher education is needed.

Additional studies to understand more completely the factors that affect student self-assessment ability are also required. Furthermore, there is need for empirical studies that will examine the effect of new electronic self-assessment tools on students in Higher education. Moreover, studies that will compare the results of electronic and non-electronic student self-assessment tools and examine the characteristics of these tools, the ease and frequency of their use could be interesting.

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