A CRITICAL REVIEW OF RESEARCH ON SELF-ASSESSMENT AS AN ALTERNATIVE TO TRADITIONAL ASSESSMENT IN A DIGITAL AGE

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ABSTRACT

This article is a critical review of research on student self-assessment as alternative to traditional assessment in digital age. While it is frequently argued that assessment sits at the heart of the learning process, in practice assessment often remains narrowly focused on qualifications and reporting achievements, driven by institutional and societal aspirations and tensions such as accountability and economic wellbeing. The purpose of this review is to provide an updated overview of theory and research, the treatment of theory and research involves articulating a refined definition and operationalization of student self-assessment, Process of self- assessment, importance of self-assessment, theoretical rationale of self-assessment, implication practices or how self-assessment, challenges of self-assessment and future of self-assessment in classroom practices. The review of empirical studies offers a critical perspective on what has been investigated. Empirical research signals that self-assessment is an important factor supporting and engaging students with learning. Despite this, there has been no explicit comparison or evaluation of theoretical rational or challenges of student self-assessment. To the uninitiated, self-assessment often appears as an amorphous, unique process. This paper evaluates the theoretical rational of self-assessment its importance, challenges, and technological learning assessment. This paper also provides overview of empirical research related to the self-assessment.

Keywords: *Self-assessment, digital age, Self-regulating, metacognition and efficacy*

INTRODUCTION

Assessment sits at the heart of the learning process. Indeed, it could be said that an institution, culture, or society encapsulates its conceptualization of learning and its aspirations for its future citizens by how it creates and uses assessment. Although it can be argued that the central purpose of educational assessment should be to support learning, in practice, assessment is often more focused on qualifications and the reporting of achievement. The growing importance in many countries of so-called 'high-

stakes' assessment in recent years as a policy tool to encourage greater competition and accountability between schools and across the education system as a whole, has greatly increased this focus on periodic, summative judgments of student performance in terms of overall grades and percentages.

In a world increasingly transformed by technology in the way people communicate, do business and live their daily lives, schools,

colleges and universities have been slow to adapt to such changes, particularly in assessment modes and practices (Shute et al., 2010). Although it is still unclear how deeply digital technologies might transform the practices of education, the advent of interactive technologies of all kinds offers significant opportunities for more engaging pedagogy and for new forms of assessment. As Pellegrino and Quellmalz (2010, p. 130) state: 'There is an interesting and powerful confluence among theory, research, technology, and practice, especially when it comes to the integration of curriculum, instruction, and assessment.

Many researchers worked on self-assessment but unfortunately this area is vacuum in Pakistani context and neglected in our assessment system because our education system and institutions policies not allowed us to practice this form of assessment in our day-to-day teaching and learning environment.

It's an understood reality that assessment is an essential part of the education system, used for the evaluation of learners' achievements after teaching specific material. Active participation of the learners is clear and obvious, which motivates them to take more responsibility and brings ultimate confidence in learners. It makes them able to judge their learning, weakness, and strength. This is an essential element of assessment but still has been ignored in Pakistan. Citation: Farooq, M., Ahmed, K., & Farooq, S. (2020). Introducing Self-Assessment for Evaluating Learners in Pakistan. Global Social Sciences Review, V(IV), 120-136. https://doi.org/10.31703/gssr.2020(V-IV).14.

A lot of research has been done on the subject since then, including at least two meta-analyses; (Sargeant, 2008; Brown and Harris, 2013) hence this expanded review, in which I provide an updated overview of theory and research. The treatment of theory presented here involves articulating a refined definition and operationalization of self-assessment through a lens of feedback, digital technology learning and assessment, rational of theoretical perspective, challenges, strategies, and future of self-assessment in classroom practices. My review of the growing body of empirical research offers a

critical perspective, in the interest of provoking new investigations into neglected areas.

Objectives of Research Review:
In order to develop a broader understanding of the current landscape of assessment practices, an extended review of the literature on self-assessment was conducted from 2,000 and two meta-analysis (Sargeant, 2008; Brown and Harris, 2013). The aim was to document existing research in order to identify what progress was being made in developing new digital self-assessment models and the barriers inhibiting their implementation in practice. The review was structured around following key questions:
i) What do digital technologies offer for educational assessment?
ii) What and why self-assessment is an alternative to traditional assessment?
iii) What is the theoretical rationale to enhance self-assessment?
iv) What are the challenges or barriers in the way of self-assessment practices?
v) How self-assessment can be implemented in the classroom practices?

Research Methodology:
This study was structured base on the systematic review of meta-analysis from onwards 2000. It also including at least two meta-analyses; (Sargeant, 2008; Brown and Harris, 2013) hence this expanded review, in which I provide an updated overview of theory and research and practices of student self-assessment as alternative to traditional assessment in digital age.

The literature review was conducted in two phases. Initially, a broad literature search was undertaken and included both well-established innovations in the field and research that addresses self-assessment perspective. Over 150 sources were included: mainly from peer-reviewed, academic publications, meta-analysis review, books and dissertations (primarily since 2000). An initial draft was then revised following feedback from experts convened for specific purpose. In a further development, the literature review provided the basis for the publication of a series of empirical briefings on key topics aimed at policymakers and

practitioners, designed to generate further discussion self-assessment in digital age.

This paper takes the findings of the research review (literature review, briefings and associated discussions) forward by focusing specifically on the theoretical rationale, challenges, implementation and digital technology learning assessment of self-assessment and its potential for influencing the wider culture and practice of assessment in education.

Sample of the Study:

The sample of the research were contained over 150 sources mainly from peer-reviewed, academic publications, meta-analysis review, books and dissertations (primarily since 2000). An initial draft was then revised following feedback from experts convened for specific purpose. In a further development, the literature review provided the basis for the publication of a series of empirical research on key topics aimed at policymakers and practitioners, designed to generate further discussion about self-assessment in digital age.

Search Engine:

To reach the sources the researcher used different search engine for this purpose which include google, google scholar, Elsevier, springer and j-store. There were some paid sources about self-assessment which is not available free of cost therefor to access these publications researcher used SCI-HUB. For the selection of specific and relevant data about self-assessment researcher used SCOPUS with the help of foreign friend.

Inclusion Criteria:

The inclusion criteria for study were open access available resources including academic publication, review papers, books, theoretical paper and govt report mainly since 2000. This inclusion criterion includes 150 sources of data including two meta-analyses. The focus of inclusion criteria was student self-assessment and self-assessment as alternative to traditional assessment.

Exclusion Criteria:

The exclusion criteria for this study were focus on empirical research especially in Pakistani context but there were not sufficient sources in Pakistani context for exclusion therefor the researcher used specific empirical studies about self-assessment as exclusion criteria and this was contained 16 academic publications including two meta-analysis and one review paper.

Total available Papers Chronological Order:

The total number of open access publication which were structured and selected for review was 150 mainly since 2000. The blow table shows the categorical division of numbers of paper in five years.

Chronological Order Divided into Categories of Years:

Years	2000-2005	2006-2010	2011-2015	2016-2020	2021 to date
No of papers	14	41	40	19	36

The above table shows the total numbers of publications or sources which search for revise purpose these include open and paid sources which was access through Scopus and Sci-hub.

An overview of Researches on Self-assessment:

Researcher (Date)	Title of Study	Context	Methodology	Results
Maddalena Taras (2010)	Student self-assessment: processes and consequences	Higher Education UK	Document Analysis	Self-assessment process provides the opportunity for learners to provide feedback about their learning. Self-assessment provides a mechanism to evaluate student self- assessment practices in terms of student involvement and power sharing.
Despina Vasileiadouand Konstantinos Karadimitriou (2021)	Examining the impact of self-assessment with the use of rubrics on primary school	70students of 5\u1d57\u02b0and 6\u1d57\u02b0grade from two classes of	Self-Assessment rubric with contain eight statements and four performance levels	The primary result was the improvement of school performance by Students aged 10 to 12 in the intervention classes compared to students in the control groups. The students of the experimental groups who used rubrics to self-assess improved their scores on the knowledge test three subjects in which the intervention took place.
Lubna Quddus Warsi and Khalid Khurshid (2022)	The Role of Self-Assessment in English Language Teachers' Professional Development in Pakistan	Pakistan	Two standardize questionnaire	Descriptive analyze result revealed that They do not use a skill- based approaching language teaching. However, they focused on teaching of grammar. Overall, they use a traditional approach to teaching with the prime focus on rote learning. Qualitative analysis results shows that ELTs, SAITP is helpful in self-assessing the core competencies which an English teacher needs for quality teaching.
Abdou Ndoye (2017)	Peer/Self-Assessment and Student Learning	Highland / 31graduate participants were selected as sample	Google survey questionnaire used and guideline also provided about self-assessment	Results indicate that, according to students' perceptions, peer and self-assessment contribute to their learning through effective feedback, a supportive learning environment, and collaboration among learners.
	The Effect of Self-Assessment on Inexperienced EFL Students' Writing During Revision	Libyan University	Essays writing and self-assessment sheet were used.	Results of the study showed that the writers in the experimental group who used self-assessment to guide their revision made surface and meaning revisions which improved their revised drafts.

				Their study demonstrated that the majority of students in the experimental group had a positive attitude towards the incorporation of self-assessment in EFL writing classrooms in Libya.
Heidi L. Andrade(2019)	A critical review of research on student self-assessment	University at Albany, Albany, NY, United States	Meta-Analysis of research from 2013 to 2018	An argument is made for less research on consistency and summative self-assessment, and more on the cognitive and affective mechanisms of formative self-assessment.
Kanwal Ameen (2008)	Perceptions and self- assessment of university librarians regarding Collection Management (CM): a case study of Pakistan	40 top universities of Pakistan were selected randomly	Self-structure questionnaire was used.	It was found that the university librarians are still not fully conversant with the changing scenario of CM in both theoretical and practical terms. It also appeared that the university librarians were not satisfied with the overall status of managing a collection in the majority of cases.
Gavin T. L. Brownand Lois R.Harris(2014)	The future of self- assessment in classroom practice: Reframing self-assessment as a core competency	Auckland Newzland	Meta-Analysis	Student self-assessment generally has a positive impact on academic performance, although it is not a robust assessment method in terms of validity and reliability. Student self-assessment is an important aspect of and contributor to greater self-regulation of learning. Student self-assessment needs a curricular framework to ensure it is an effective treated as a self-regulating competence.
Mahwish Farooq, Khalid Ahmed and Sahirish Farooq (2020)	Introducing Self-Assessment for Evaluating Learners in Pakistan	Pakistan	Essay rubric of Punjab University used as assessment rubric	Self-assessment of second language learners has a positive backwash effect on their performance in essay writing assessment. It is concluded that students can evaluate their written performance with some instructions and guidance. It is also concluded a significant difference between self- assessment and teacher assessment. In the second round of assessment, this difference reduces after understanding the rubric and its usage.

Meta-Analysis of the Research:
In the following section researcher outline the review meta-analysis and address the blow-mentioned research questions through literature review.

Q.1 What do digital technologies offer for educational assessment?

Digital Technologies learning and assessment:
Over several decades, there has been a growing interest in the use of digital technologies as a means

of supporting learning and rethinking how teaching, learning and assessment are configured (S€aljo, 2010). The rise of Web 2.0 has further increased opportunities for participation and artefact production in online environments and social networking technologies offer new opportunities for communicating, experiential learning and assessment (Bonderup Dohn, 2009). Indeed, the influence of digitally mediated cultures throughout society means that young people are taking on new participatory and collaborative roles in learning online and outside the classroom and there is increasing interest in incorporating these roles and practices inside formal education (Facer, 2012).

Central to the international concern to use emerging technologies to help inculcate the skills, knowledge, creative practices and dispositions to learn is the question of how they can be assessed. There is a need to develop assessment tools that are capable of capturing such learning priorities (Honey et al., 2005; Shute et al., 2010; Quellmalz et al., 2012) and widespread agreement about the difficulty of transforming such aspirations into practice (Claxton, 2007).

Despite the belief that the use of technology for assessment could become a major agent for change within the education system (Mansell, 2009) and a growing recognition of the potential of technology in this respect, the implementation of genuinely innovative assessment practices using technological affordances appears to remain narrow in scope (Whitelock & Watt, 2008; Beevers, 2011; Mogey, 2011).

Q.2 What is Self-Assessment in Education?

Defining and Operationalizing Student Self-Assessment:

In contemporary education students' autonomy and ability to monitor and control their learning are now being asked. In the modern educational context emphasis is placed on educating students in a way that they are able to monitor themselves and control their learning. The aim is to develop their own knowledge through their active participation in the learning process and by assessing the work they produce by setting future goals.

Self-assessment is defined as a process where "students are directed to assess their performance against pre-determined standard criteria and involves the students in goal setting and more informal, dynamic self-regulation and self-reflection" (Bourke & Mentis, 2011, p. 859). Self-assessment is a modern way of assessing and involves students' own work and / or their results (Brown & Harris, 2013).

According to McMillan and Hearn (2008), self-assessment is a guided, taught process that involves four steps: (a) establishing assessment criteria with cooperation between teachers and students, (b) showing students how to apply the assessment criteria and providing the necessary practice time in order to apply them, (c) providing students with feedback on the results of applying those criteria in their work, and (d) setting learning goals and strategies to achieve in the future.

It is a process that actively involves students in the learning process, thus providing them self-management, self- control, self-transformation, making them independent researchers of their learning and knowledge (Kantas, 2014). Self-assessment supports future professional development and lifelong learning (Taras, 2010).

Based on the above definitions and concept we cand define self-assessment as a process of formative assessment during which students reflect on and evaluate the quality of their work and their learning, judge the degree to which they reflect explicitly stated goals or criteria, identify strengths and weaknesses in their work, and revise accordingly. Self- assessment features make learners to a critical thinker and decision maker in academic process through the self-assessment learners' owner their learning and performance.

Q.3 Why Self-Assessment is an alternative to traditional assessment?

Why Self-Assessment?

Studies have shown that students can give themselves feedback in a very effective way (Andrade et al., 2008; Andrade, Du & Mycek, 2010; Ross, Rolheiser & Hogaboam-Gray, 1998). Self- assessment makes them responsible for their learning by controlling their work, assessing themselves and making critical decisions about how they can improve their work. Furthermore,

self-assessment raises students' interest and their level of motivation, leading them both to increased learning and better academic performance as well as to develop their critical skills for analyzing their work (Sharma et al., 2016).

Self-assessment has been shown to support student learning. Theories of formative assessment support the mandatory use of self-assessment (Sadler 1989; Taras 2002, 2005), as does extensive empirical research across sectors and age ranges which signals the importance of self-assessment to support student learning (Black and Wiliam 1998; Boud 1995; Taras 2001). Self-assessment is considered one of the most important skills that students require for effective learning and for future professional development and life-long learning (Boud 1986, 1; Dearing 1997, 8, 12).

Self-assessment highlights students' learning needs during the assessment process and focuses on the students rather than the teacher. Students, during the educational process, become active from passive receivers of knowledge as they have the ability to supervise and assess their progress. Students' involvement in the assessment process also helps teachers to understand the way their students think and learn, and so their teaching interventions are more effective (Black & Wiliam, 1998). Teachers can also provide feedback on the accuracy of the content of student self- assessment (Panadero, Brown & Strijbos, 2016) so that students can get useful information to improve themselves. Providing feedback to students is necessary to help them identify the points they have not understood, or they may have gaps, which improves their self-confidence (Ross, 2006).

Educating students with the practice of self-assessment leads to higher learning outcomes and self- regulating learning (Kostons, 2010). It increases students' interest and motivation while leading to higher quality in learning and better academic performance, helping them to develop critical competence in analyzing their work. In this way, students develop higher self-efficacy and increase their personal satisfaction along with their performance. The learners are able to describe their achievements, develop metacognition and self-regulating learning as well as improve their learning and development (Rekalidou, 2016).

Q.4 What is the cycle of Self-Assessment as alternative assessment?

The Self-Assessment Process:
Many researchers believe that student self-assessment more accurately can be define as a dynamic process by which student can monitor and evaluate their thinking and behavior, Knowing the progress towards targets and identify strategies to understand the skills when learning. Thus, self-assessment is conceptualized here as the combination of three components related in a cyclical, ongoing process: self-monitoring, self-evaluation, and identification and implementation of instructional correctives as needed (see Figure 1). Which is develop by Harris & Brown 2018.
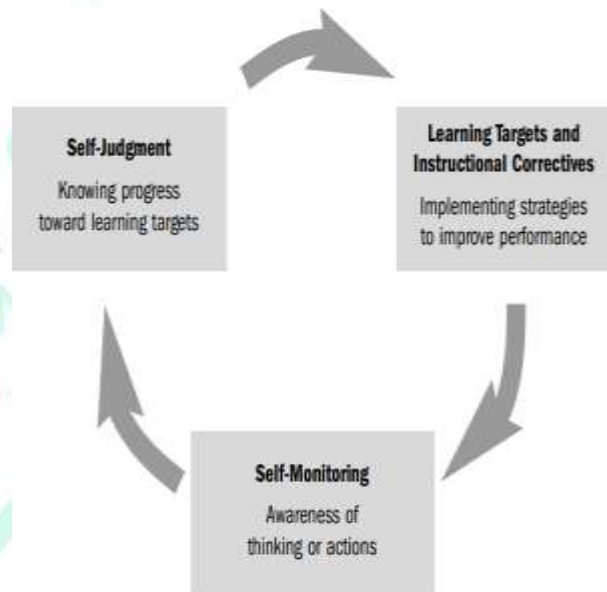

Figure 1. Student Self-Assessment Cycle

Q.5 How Self-assessment can be implemented in classroom practices?

Implication for Practice of Student Self-Assessment (How):
Intensive conversations with students need to occur before introducing any self-assessment practices. It is particularly important to explore the assumptions and principles that underlie the self-assessment innovation. Introduce the concept and begin providing practice opportunities very early in a paper if you are going to use it. Boud (1995) argues that the way in which self-assessment is

implemented is critical to its acceptance by students.

For classroom teachers, student self-assessment develops an awareness of which metacognitive strategies to use and when to use them. Teachers and students learn these skills when they establish clear learning goals and articulate evaluative criteria that enable students to assess their own work. To help teachers implement student self-assessment in the classroom, Rolheiser (1996) identifies four stages of teaching student self-assessment. At each stage, initiating different levels of teacher and student involvement gradually gives students less structure and specific direction and more responsibility and freedom.

stage 1, teachers involve students in determining criteria. Often students brainstorm ideas and negotiate with teachers to arrive at final criteria that are specific, immediately applicable, and moderately difficult.

In stage 2 the teacher shows students how to apply the criteria to evaluate work samples. Providing examples of evaluated work helps students understand, specifically, the meaning of the criteria and how to use them. Students need to practice classifying products using the established criteria. Cooperative learning groups can effectively facilitate this process.

In the third stage teachers provide students feedback concerning their application of the criteria. At this point it is helpful if they show students qualitatively different products to illustrate how criteria are applied.

The last stage involves identifying subsequent learning goals and strategies that can attain the goals. Initially, the teacher determines the goals and strategies; eventually students construct their own goals and strategies with teacher guidance.

Q.6 What are the challenges or barriers in the way of self-assessment practices?

Challenges of Student Self-Assessment in Pakistan:

Although studies have shown that most students are fairly capable self-assessors, but in Pakistani context there are lot of challenges and issues to introducing self-assessment as practices of teaching and learning because the institutional policy not allowed teacher to provide opportunity for learners to judge their performance. In our culture of education assessment is always a neglected area as priority and reforms that's why the quality of education and students lifelong learning is questionable in every sector. That is why student self-assessment is facing many challenges that need to be understood and addressed for better learning outcomes student self-assessment can raise dilemmas and challenges:

The first challenge refers to the experienced cognitive load when students perform a task for the first time, that is, the majority of their cognitive resources is invested in performing the task (Plass et al. 2010; Sweller et al. 2011), thus leaving little or no space for monitoring what they are doing (Fabriz et al. 2013). Therefore, novice learners experience a higher degree of cognitive load when processing material that has not been automatized; thus, SSA challenges working memory capacity. Second, novice learners either lack or have less elaborate cognitive schemata (i.e., declarative, and procedural knowledge) for the task at hand which also increases cognitive load. Both conditions imply that the monitoring component of self-assessment is more challenging for novices. Furthermore, as a consequence of being a novice, students do not have clear standards about quality work in the domain, cannot easily change their actions during performance, and have difficulty in evaluating the quality of their products (Kostons et al. 2009, 2012; Kostons 2010).

Second challenge refers to students' knowledge of the task at hand: if students do not have any idea of what they are supposed to do within a task domain, SSA is unlikely to be a pleasant or a beneficial exercise. Especially novice or lower ability students would be repeatedly confronted with knowledge about lack of (or substandard) performance, especially if reinforced by external assessments. This may be a threat to the self and/or even encourage learned helplessness and decreased self-efficacy the latter being a crucial component of self-regulatory strategies. Just as we cannot ask students to perform a novel task with the ease and fluency of an expert, so we should not expect students to conduct SSA with ease and accuracy, until they have mastered the relevant skills.

Discussion and Conclusion:

In this paper, researcher has shown that across a range of educational sectors, digital technologies have the potential to be used to change the purposes of assessment, how these processes happen and what students are expected to know and demonstrate. The examples of new tools and practices discussed earlier have shown that self-assessment has considerable potential to enhance the educational process in a variety of different ways. It can provide rich, dynamic individual or group feedback, which can support motivation and engagement in the learning process. It offers ways of integrating formative and summative assessment to make it more relevant to learners and support collaborative and peer assessment. It can allow learners multiple ways of representing their progress and achievements over longer or more flexible timescales and support new forms of crowd-sourced grading and decision-making in assessment so enhancing the validity of assessment.

The critical review showed how self-assessment offers potential for assessing complex problem solving skills, new ways of recording and valuing achievement and exploring learning analytics. It may even lead to a beneficial 'wash-back' effect on curriculum priorities and design. However, we have also identified the considerable challenges and risks associated with such developments.

Self-assessment is the act of monitoring one's processes and products in order to make adjustments that deepen learning and enhance performance of students. Although it can be summative or formative, the evidence presented in this review strongly suggests that self-assessment is most beneficial, in terms of both achievement and self-regulated learning, when it is used formatively and supported by training. What is not yet clear is why and how self-assessment works in Pakistan because in our context the area of student self-assessment and its practices are vacuumed. Those of you who like to investigate phenomena that are maddeningly difficult to measure will rejoice to hear that the cognitive and affective mechanisms of self-assessment are the next black box. Studies of the ways in which learners think and feel, the interactions between their thoughts and feelings and their context, and the implications for pedagogy will make major contributions to our field.

In this paper, researcher have attempted to clarify what the field of student self-assessment has robustly established, which is much more than is often considered in teacher education, teachers' professional development, or assessment for learning research. Additionally, I have also discussed operationalized concept of student self-assessment, process, theoretical rational, implementation practices and some of the issues or challenges that are yet to be explored about SSA and especially in Pakistani context. Basically, this paper provides a review of research about student self- assessment and open doors for future practices and implication of self-assessment in the classroom culture and educational setting.

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