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Effect of Self-assessment Practices on Students' Academic Performance during their Elementary Schooling

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Abstract

Independent and self-learning is recognized to be important, which can be promoted through formative-cum-summative assessments. Unfortunately. similar practices in Pakistan are rare to ensure timely, valid and constructive feedback to the students. To address the issue, self-assessment was manipulated to study its effect empirically. For the purpose, 7th graders, through mechanical match, randomly selected to make two groups, which randomly assigned as control and experimental groups, A, and B, to be treated through routine and cum self-assessment practices, respectively. During instruction, students reviewed of their own performance on the test, to find out learning gaps for self-improvement.. Results of data analysis revealed visible improvement in learning of those engaged themselves in self-assessment as compared to those underwent summative assessment. The results supported the argument that, 'self-assessment integrated class instruction', enhances and promotes independent learning among the students. The results of the study encourage implementation of self-assessment practices into classroom for effective and efficient teaching-learning processes.

Keywords: *self-assessment practices, independent and enhanced learning, Academic performance.*

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Introduction

A very famous statement of Linn, R.L. and Gronlund N. E. (2000) is that, 'what we test, that we get, (WWT,TWG), accordingly there is pervasive perception among the educationist in Pakistan is that our testing and assessment practices are content based, least comprehensive and hardly contribute particularly in students' leaning enhancement. Similarly, the tests results discriminate among students on scores, rather than on the all three domains of Bloom's taxonomy and on the skills required in day to day lives. Accordingly, Khalid (2024) explored key issues of the assessment practices and concluded, 'over reliance on yearly assessment that promotes rote learning, whereas formative assessment, a crucial one learning enhancement through feedback is not a regular and formal part during day-to-day elementary schooling. To Halia, 2011, current assessment practices in Pakistani classrooms rarely render effective support students' learning, but the same distract from meaning learning process in the classroom (Khan, 2012).

The issue is that students in Pakistan, during teaching-learning processes least receive comprehensive and effective feedback, although verification feedback through blind tick marks is given on the written test. Whereas elaborative and scaffolding feedback, recommended to be effective ones, are rare and least helpful for promoting supportive learning process in classroom teaching. Resultantly the learners are unable to identify the areas of their studies to improve or recognize their strengths, which hinders their ability to adjust their learning strategies. Thus, almost the absence of formative assessment limits the successive improvement in quality classroom instruction (Andrade & Cizek, 2010).

In order to overcome the identified challenges being faced during teaching by the teachers' in general and students in particular, there is need to improve the efficacy of the prevailing assessment system by applying alternative assessment approaches, like peer, teacher, and self-assessments. Such approaches would enable to support and enhance learning through immediate, direct and continuous feedback and thus the learning processes in classroom would necessarily bring the meaningful achievement of the learning outcomes.

Teachers can foster continued growth and development by providing students with the opportunity to reflect on what they have learned. There is common understanding among the experts that we do not learn from experiences, we learn from reflecting on experience. Such understanding about classroom assessments leads towards the ubiquitous implementation of formative assessment practices. More over the central aspect of formative assessment is self-assessment, where learners, understand how

their own learning experiences are workable for enhancing their academic performance. Through the later strategy of assessment, i.e., self-assessments, learners can prepare themselves through exploring their deficiencies and strengths which enhance their motivation and academic achievement.

Through self-assessment students are given the opportunity to reflect on their own understanding and hence offer scope for improvement, an active role one takes in their learning process. This improves critical thinking and self-regulation in the process (Andrade & Valtcheva, 2009). Further it falls in the realm of contemporary learning designs where education encourages students toward self-motivated agency-based environments, hence resulting in intrinsically motivating the children to learn over time to become lifelong learners (Panadero, et. al., 2017).

Furthermore, self-monitoring procedures are effective in increasing feedback and can be useful even in large classrooms when immediate feedback from teachers is impossible (Skinner, Turco, Beatty, & Rasavage, 1989). Accordingly, the theoretical framework in Figure:1, guides the present study to assume and hypothesize, through the connecting threads of students' self- assessments practices, where classroom engagement, self-review, reflection on self-performance, strategizing for improvement through independent learning etc., are the implied factors for enhancing students learning.

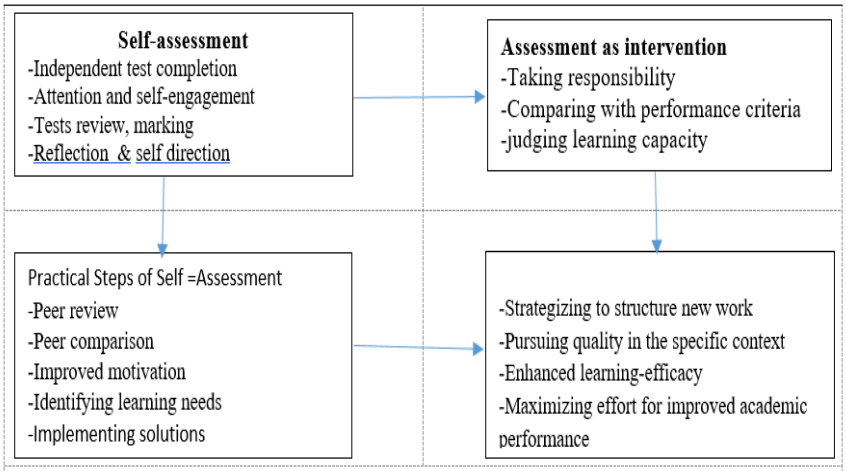

Figure 1: Framework of Self-assessment to achieving learning goals

Keeping in view the above theoretical framework given in figure 1, the important factors behind the effectiveness of self-assessment are the 'learner's itself engagement' to review, reflect, and strategies to improve

her/his learning. Thus, it obviously is to enable students of doing things independently through their own individualized learning approach. The same perspective was also supported by Hwang et al. (2015), that self-assessment makes students to reflect on their performance to find their learning needs, as well as to address the areas of improvement through practical steps for effective learning practices. Meanwhile, the feedback that students get through self-assessment is crucial for critical thinking and effective performance (Heritage, 2010).

The theorized framework of formative/self-assessments has certain limitations in the existing instructional phenomena, whereas, integrating student self-assessment is challenging. But the current study pursues to pave way forward for promoting self-assessments as part of the formative assessment, to play its probably significant role in enhancing students' learning and academic performance. Definitely the students are encouraged through self-assessment, where they reflect on their performance and improve their academic achievement (Atrash et al., 2023; Bowman, (2017), also supports even peer as well as self-assessment owing to the resultant inclusion of students throughout the teaching learning processes, which give better learning outcomes then feedback from teachers.

As mentioned above in the theoretical framework, peer-assessment is an important complement and is a prior requirement for self-assessment. Such assessments are reported to improve the motivation of students to work more carefully to assess and mark through discussion and clear understanding of their own work, and can assess and mark the work of others as well. The same occurs in mature and sensible way to prove itself to be a worthwhile experiment. This can also make the teachers task more manageable, for it helps the learners to recognize their own learning needs and to inform the teacher about these needs. A further advantage is that when students are busy, involved in assessment in the classroom, the teacher can be free to observe and reflect on what is happening and to frame helpful interventions.

Contrary to the above is the problem of exclusive and frequent teachers' assessment was also report in Pakistan by Hussain, Idris, and Akhtar, (2019), that teachers tend to rely more on traditional assessment methods than on alternative and effective ones. Thus there is a lack of focus on learning-centered strategies, which are essential for effective teaching in 21st-century classrooms.

In light of the above presented scenario, the study as assumed, aims to verify the effect of self-assessment, as a formative assessment strategy, on the learners' academic performance for paving way forward to the quality classroom teaching learning processes. Furthermore, the study aims to

examine the effect of integrating self-assessment practices into classrooms focusing on how such strategies can promote independent, reflective learners, being self-motivated, self-directed and capable to obtain improved academic outcomes.

Review of Related Literature

Teachers' roles are evolving. A student-centered collaborative learning environment has replaced a teacher-centered lecture setting. The role of the teacher as a facilitator is becoming more apparent. In addition to the fact that the roles of the teacher and the student are evolving, traditional forms of assessment, such quizzes and paper-pencil tests, are thought to be less useful in assessing students' understanding of the intended results. "Such assessment measures become increasingly inadequate as our educational objectives broaden in scope" (Clarke, Clarke, and Lovitt 1990).

In other words, alternative methodologies include teacher-led formative assessment and peer assessment, which could complement self-assessment to make more benefits further. Black and Wiliam (1998) in their seminal work on formative assessment suggest that students benefit most when self-assessment is integrated into a wider framework of feedback and collaborative learning with the guidance of the teacher in setting and then achieving realistic goals. Pausch and Zaslow (2008) emphasized as their Coach Graham taught them, "that one can improve, only by developing the ability to assess oneself, if we cannot administer that, how can we say that we are getting better or worse?. In the words of Boud (1998), "how can we teach what we don't know?'

Student self-assessment has become of growing interest in educational research in recent times, especially in schools where 21st-century skills and learner-centered pedagogy are given prime importance. It has been revealed that self-assessment wherein students reflect on their understanding, set goals, and assess their progress, will enhance metacognitive awareness, motivation, and even academic performance (Brown & Harris, 2013).

Self-assessment is an excellent strategy for formative assessment in that students give themselves immediate feedback, based on specific aspects of their performance according to standards and criteria, and make adjustment to how and what they are learning (Crooks, 2007). They improve their performance by taking responsibility for their own learning, gaining an understanding of their strengths and weaknesses. It empowers students to independently guide their own learning by using internal feedback to determine whether and when to seek assistance, when to keep moving forward, and when to adapt new learning strategies to reach learning targets (Heritage & Anderson, 2009; Heritage, 2013).

The research of Andrade proves that structured self-assessment helps students become of their strength and weaknesses, which leads to increased self-efficacy and independence in learning. Some scholars however offer opposing perspectives on the same issue which argues that self-assessment cannot be benefit to all as it may not necessarily apply to less mature, younger students lack the abilities needed to make proper assessment of their graduation (Ross, 2006). It was subsumed into both the feedback and self-assessment categories: with feedback, criteria came to represent the framework from which teachers evolved appropriate comments to provide information to learners about achievement and for improvement; with self-assessment, it formed the framework that helped learners decide both how to make judgements about their own work and how to structure or detail their next piece of work.

According to Sadler (1989), self-assessment is an essential part of formative assessment because, in the end, the student must need to "close that gap" between her actual performance (as determined by assessment) and the desired standard. A student will not learn to monitor and self-adjust her work if she just follows the teacher's instructions without comprehending their purpose. Self-assessment is therefore not “an interesting option or luxury” (p. 54e55), as stressed by Black and Wiliam (1998), but rather is necessary for effective learning, and empirical data does support this point.

Key research by Andrade and Valtcheva (2009) supports that structured self-assessment improves academic performance by promoting a growth-oriented mindset and self-regulation among students. In addition, the development of a positive learning disposition, characterized by resilience, curiosity, and openness to feedback, has also been linked to self-assessment practices (McMillan & Hearn, 2008).

This approach promotes a learning environment in which students assess their own work, establish objectives, and constantly improve their understanding, process that is especially crucial for the growth of critical thinking. Self-assessment may greatly improve students' academic performance and learning attitude since it is aligned with active learning and feedback-centered instruction paradigms.

According to Panadero et al. (2012) and Topping (2003), students who get instruction in the use of student self-assessment typically learn more and perform better academically. According to Brown and Harris' (2013) analysis of 23 self-assessment research studies, student self-assessment improved learning and academic performance in a variety of grade levels and subject areas. They found that more important than the type of evaluation was the application and intricacy of a self-assessment.

After reviewing the literature, Sitzmann et al. (2010) found that learning and self-assessment were more strongly correlated in courses with teacher feedback than in those without. For feedback to be most successful, it must be concise, courteous, specific, distinct, prompt, and open to follow-up (Tomlinson & Moon, 2013). Additionally, it ought to promote trust between the student and the instructor. Students are encouraged to evaluate themselves in order to improve their academic performance (Atrash et al., 2023).

Self-assessment aligns itself with 21st century educational goals and highlights the need to implement such practices that enhance student's continuous independent growth and development. Primary goal of education in the 21st century is to help people develop the ability and confidence to participate in lifelong learning rather than to impart a particular set of information, skills, and understanding (Carr & Claxton, 2002). For the purpose, there is need for the recognition of formative self-assessment practices within the classroom as well as in the real-life practices. However, self-assessment practices having their importance in learning and development, are not the regular feature of our teaching learning process, even amongst the classroom instruction of those teachers who take assessment seriously (Black & Wiliam, 1998).

The above representative related literature established the need, significance and crucial role of self-assessment, but even then summative assessment, is a stable traditional practice, which is emphasized in the testing and examination system of Pakistan. Although the present assessment practices are least fulfilling the individual and independent academic growth and success among students. Similarly, Ahmad and Malik (2011) critically concluded that assessment in the classroom teaching have not yet taken its essential place in the prevailing teaching-learning process in Pakistan. Although Single National Curriculum emphasizes to include four types of assessments: teacher assessment, self-assessment, peer assessment and group assessment (Government of Pakistan, 2020). The current study is therefore conducted to explore the significance of implementing student self-assessment practices as formative strategy to promote learning, growth and improved academic performance.

Methodology of the Study

The present study has to determine the effect of self-assessment on students' academic performance, hence follows quantitative approach, where the two variables were studied as cause (IV) and effect (DV), was more appropriate. Following the given approach, the study proceeded through randomized, 'pretest-posttest control group design'. During the

implementation phase, control group was taught through routine teaching-cum-summative assessment while the experimental groups was taught through, 'adding up self-assessment practices', as an intervention (Fraenkel, 1993). Design of the study, for easier understanding of the methodological flow of the study is illustrated in the following.

Treatment Group	*R*	*O*	*X*	*O*
Control Group	*R*	*O*	*C*	*O*

Figure 2: The Randomized pretest- posttest control group design
R=random assignment, O=pretest, X=experimental group, C=control group whereas O=posttest.

A public school, from District Mandi Baha-u-Din, Pakistan, was selected conveniently; in the sense of permission to conduct the experiment prolonged for 30 working days, i.e., 6 weeks. Total enrolled students over there in grade 7 were taken as an intact group (57 students in total) as the sample of the study. Where the selected cases were randomly and through mechanical matching, divided into two groups (n=29, and n=28), and later were randomly assigned as control and experimental groups, to be taught through routine teaching with summative assessment by the teacher, whereas the later was taught by the same teacher, in addition with self-assessment practices. The given design in figure 2 controls almost all the threats to internal validity except, data collector bias and attitudes towards the test, of the subjects of the study

Intervention of the study

Experimental group was treated with students' self-assessment practices (SSAP) throughout teaching learning process. Teacher role in treatment group was as a facilitator that helped students to participate actively in the instructional process. Researcher as teacher, implemented self-assessment practices such as peer review, peer comparison, improved motivation, identifying learning needs, implementing solutions. The given steps of the self-assessment practices might have most probably been resulted in strategizing to structure improved work, pursuing quality in the specific context, enhanced learning-efficacy and maximizing effort for improved academic performance.

Conclusively the actual motive of the given treatment was to develop the ability of assessing themselves, not for assigning the grades but for the purpose of improvement in their self-learning, through recognizing their learning deficiencies, for strategic revisions to ensure improved learning. All this occurs according to Sadler, (1989) held self-assessment as

essential to learning, for it is difficult for the learners to achieve a learning goal unless they understand that goal and can assess what they need to do to attain the learning targets.

Instrumentation

Researcher constructed an achievement test to collect data at the pre and post stage of the experiment. The test comprised of the 'review section' of the English Textbook, designated for 7th graders. The English academic performance test on English was based on first three levels of cognitive domain remembering/knowing language sounds and items, understanding meanings and applying rules for sentence structure etc. It was finalized on the basis of the pinions of the experts, whereas CVR of each item and CVI of the whole test was calculated (0.94), with alpha value .71, representing reliability if the test.

Data analysis

First the descriptive statistics are presented in the bar graphs for better understanding of the differences resulted from the intervention, i.e, through routine summative assessment and self -assessment by the students. The given graph reflects the factor wise, i.e., remembering, understanding and applying knowledge as well as overall academic achievement. Afterwards the calculated on the factors and overall were compared through inferential statistics, i.e., t-test, to find the differences in academic performance of the students taught with routine/summative assessment and of those taught through self-assessments.

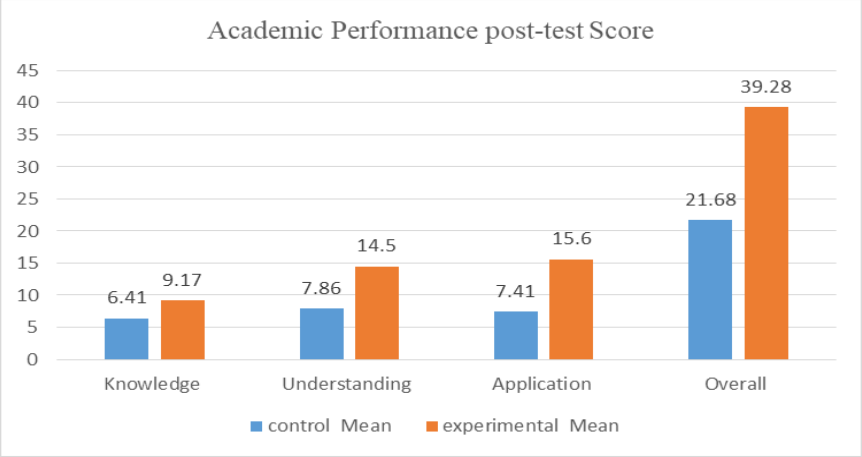

Figure 3: Comparison of factor wise and overall mean scores of the two groups

Moreover, the results of the t-test to find out academic performance differences of the control and experimental groups are presented in following table.

group	Control N (29)		Experimental group N (28)					
	Mean	SD	Mean	SD	Df	T	Sig	Mean difference
Knowledge	6.41	3.15	9.17	2.66	55	3.56	.001	2.76
Understanding	7.86	3.46	14.50	4.14	55	6.57	.000	6.63
Application	7.41	3.48	15.60	3.64	55	8.67	.000	8.19
Overall	21.68	8.69	39.28	9.41	55	7.33	.000	17.59

Table 1: shows the analysis results of an independent sample t-test, i.e., comparison of students' academic performance, as well as on their lower order thinking levels, i.e., their knowledge, comprehension and application levels. The students taught through routine teaching-cum-self-assessments significantly improved their academic performance on their knowledge (M= 9.17, SD= 2.66) as compared to the group underwent summative assessments, (M= 6.41, SD=3.15); t (55) =3.56, p=.001 with a mean difference of 2.76.

On the understanding level, students taught with self-assessments (M=14.50, SD=4.14) outperformed those taught with summative assessments (M=7.86, SD=3.46) and the difference was statistically significant as t (55) =6.57, p< .001 with the mean difference 6.63.

Results related to application level, reflect that students taught with self-assessments (M = 15.60, SD = 3.64) outperformed those taught with summative assessments (M= 7.41, SD=3.48); t (55) =8.67, p <. 001 with mean difference of 8.19.

The results on application level of the participants academic performance, are also respectively reflecting significant difference between both groups i.e., control group (M=21.68, SD= 8.69) and experimental group (M = 39.28, SD = 9.41. significance = 0.00 is p<.05).

Having the critical review of the two groups results on three different levels of lower order thinking, a trend is visible that engaging students in their own i.e., test performance, enhancing the efficiency of their mental process more through engaged learning, on the success in English as second language. Conclusively the self-assessment practices are established to be highly effective particularly the higher order thinking levels in language particularly and for other disciplines in general with very large eta squared =0.4 calculated on the given data.

Discussion on the Results of Analysis

The current study aimed to explore the factors that possibly result from self-assessments by the learners due to its effect on students' effort, cognitive growth, and learning. The research on the basis of the significantly improved post-test results, conclude that self-assessment is visibly supportive for students' enhanced learning. Self-assessment enables students at individual as well as collective levels, to have timely, acceptable feedback which informs them about their leaning gaps, i.e., areas of improvements, and their strengths due to their maximum performance on certain assessment tasks.

The results of the study highlight that self-assessment practices having intervention and implications like, Peer-reviews and comparisons, enhanced motivation, more focus on learning needs and applying individualized leaning strategies, can improve their academic performance. Furthermore, they can through continuous active -reflective cognitive engagements. Moreover, students' development in basic cognitive renders more impact on the succeeding levels of the cognitive skills, e.g., more information, enhance more understanding and frequent application of the knowledge in ever evolving situations. It means that self-assessment practices are more effective beyond memorization, hence foster deeper learning.

Thus, to be more effective for the higher mental process, it can be safely claimed on the basis of relatively increased effect of self-assessment on the cognitive level having involved more thought processes. It can be inferred that this enhance effect is the consequence of self-assessment strategies, enabling active and reflective thinking successively for every next level of cognitive development. It also supports students to be confident to build their knowledge through reflection on their performance and to take ownership for their learning.

Intervention process revolves around the reflection of students on their thought progress. SSAP gives an opportunity of reflection on activities which help students to figure out areas of weakness and strength in their learning process. Accordingly, students can make effort to improve their weak area by suitable strategies and taking feedback from peers and teacher. This learning process and real-time feedback promotes continuous improvement and better performance.

Self- assessment intervention claimed in the present study is similar to the formative assessment at the level of individual student. The ideas of formative assessments that motivated the teachers to change their practices were initially drawn from the four areas: questioning, feedback, sharing criteria, and self-assessment (Black and Wiliam 1998b). Both the assessments, i.e., formative or self-assessments work as intervention,

resulted in attention and participation in learning, as well as independent completion of classwork and homework. I makes sure self-direction on successful completion of the learning tasks, focusing on accuracy and fluency of academic skills, targeting individual effort, pair-share, peer or group classroom work, review of the test responses, revisions for enhanced learning (Shapiro & Kratochwill, 2000a, 2000b).

Additionally, Andrade and Valtcheva (2009) argue that self-assessment shouldn't be used to determine one's own grade, but rather should be a formative type of assessment considering on drafts throughout the learning progress. Therefore, the goals of self-assessment are to identify one's strengths and weaknesses in particular areas, for the improvement to foster refined thoughts and enhanced quality learning. Similar results support as argued by Black and Wiliam (1998), that implementation of self-assessment practices supported and facilitated by the teachers ensure timely feedback led to significant improvements in the learning and academic performance of the target students.

According to Andrade & Valtcheva ,2009, self-assessment is a type of feedback meant to help students make well-informed changes to their learning objectives and procedures. In this context, the primary purpose of feedback is to improve performance and encourage ongoing learning. Therefore, self-assessment works best when it is used formatively, giving pupils the chance to think, edit, and get better. Self-assessment probably is the development of peer-assessment practices, where habits and skills of collaboration, developing objectivity render the concept of quality in a specific context and also the motivation to seek improvement assessment (Shapiro & Kratochwill, 2000a, 2000b).

Through Self-assessment students engage in self-observation and making them monitor their work and identifying gaps in their current and desired performance (McMillan & Hearn, 2008; Ross, 2006). This ability to monitor and self-regulate contributes not only to immediate feedback but also to the cultivation of independent, reflective learners an essential objective of 21st century education. This study highlights the effectiveness of student self-assessment in fostering active learning, encouraging students to improve their work, take responsibility for their progress, and develop lifelong learning habits.

Conclusion

Students' self-assessment learning has significant impact on students' performance in knowledge, understanding and application. This is also observed during intervention that students in experimental group tend to be more engaged and motivated as the focus was learning not just right and wrong answers. These findings highlight the importance and

implementation of formative and self-assessment practices during teaching learning process for student's growth and learning.

The results of the study lead the classroom practices in Pakistan, to include formative-cum-self assessments, to raise educational standards and learning results, through strengthening teachers' effectiveness (Khalid, 2024). Thus it advocates more focus on student-centered learning strategies, like active participation and engagement in classroom to promote learning autonomy.

Significant improvement in students' academic performance, allows to conclude and recommend teachers to introduce self-assessment activities while lesson planning, giving opportunities to students for self-review of their test tasks.

It is recommended to the administrators to introduce professional development trainings for teachers for administering self-assessment as formative assessment strategy and implementation of its practices in classrooms.

The criteria for assessing and evaluating any test task, must be objective, to enable students to have a clear overview through concrete examples in modelling tasks performance. For this purpose, collaborative and peer-assessment, having intrinsic value, is more helpful to develop the objectivity required for effective self-assessment.

- Students should be encouraged to bear in mind the aims of their work and to assess their own progress to meet these aims as they proceed. They will then be able to guide their own work and so become independent learners.

The main point here is that peer- and self-assessment make unique contributions to the development of students' learning – they secure aims that cannot be achieved in any other way.

Shortly speaking promoting self-assessment by students, in classroom instruction as a component of teaching-learning strategies, develops their capacity to take responsibility for their own learning, which is the fundamental principle of self and independent learning.

References

Ahmad, S. & Malik, S. (2011) Examination Scheme at Secondary School Level in Pakistan: *Composite vs Split, Canadian Social Science, 7* (1), 130-139.

Andrade, H. L., & Cizek, G. J. (2010). Handbook of formative assessment. Routledge.

Andrade, H., & Valtcheva, A. (2009). Promoting learning and achievement through self-assessment. *Theory into practice, 48*(1), 12-19.

Atrash, H., Katz-Leurer, M., & Shahar, G. (2023). The effect of self-assessment on student competence in physiotherapy clinical training: a randomized controlled trial. BMC Medical Education, 23(1), 780.

Black, P. Harrison, C. Lee, C., Marshall, B., and Wiliam, D., (2005). Assessment for Learning: Putting it into practice, 3ed: Open University Press, McGraw-Hill Education

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: principles, policy & practice*, *5*(1), 7-74.

Boud, D. (1998). How we teach what we don't know. Inaugural Professorial Lecture, University of Technology Sidney, Australia.

Bowman, J. E. (2017). Engaging students in the assessment process: A quantitative study of peer and self-assessment (Publication No. 10683143) [Doctoral dissertation, Notre Dame of Maryland University). ProQuest Dissertations and Theses Global.

Brown, G. T. L., & Harris, L. R. (2013). Student self-assessment. In J. H. McMillan (Ed.), The SAGE handbook of research on classroom assessment (pp. 367 393). Sage.

Carr, M., & Claxton, G. (2002). Tracking the development of learning dispositions. *Assessment in education: Principles, policy & practice, 9* (1), 9 37.

Clarke, David J., Doug M. Clarke, and Charles J. Lovitt. "Changes in Mathematics Teaching Call for Assessment Alternatives." In Teaching and learning Mathematics in the 1990s, 1990 Yearbook of the National Council of Teachers of Mathematics, edited by Thomas J. Cooney and Christian R. Hirsch, 118-29. Reston, Va.: The Council, 199

Crooks, T. (2007, April). Key factors in the effectiveness of assessment for learning. Paper presented at the Annual of the American Educational Research Association, Chicago.

Fraenkel, N. E. (1993). *How to design and evaluate research in education*. Francisco, San Francisco State University: McGraw Hill.

Government of Pakistan. (2020). Single national curriculum, general knowledge, 2020. National Curriculum Council, Ministry of Federal Education and Professional Training. http://www.mofept.gov.pk/SiteImage/Misc/files/SNCGeneralKnowledge1 3.pdf

Halai, N., Khan, M. A. (2011). Developing pedagogical content knowledge of science teachers through action research: A case study from Pakistan. Asia Pacific Forum on Science Teaching and Learning, 12(1).Available at: http://ecommons.aku.edu/pakistan_ied_pdck/1

Heritage, M. (2010). Formative Assessment and Next-Generation Assessment Systems: Are We Losing an Opportunity?. Council of Chief State School Officers.

Heritage, M. (2013). Gathering evidence of student under- standing. In J. H. McMillan (Ed.), Sage handbook of research on classroom assessment (pp. 179-196). Thou sand Oaks, CA: Sage.

Heritage, M.(2013; & Anderson, C. (2009, April), Laying the groundwork for formative assessment. Paper presented at the 2009 Annual Meeting of the American Educational Research Association

Hussain, S., Idris, M., & Akhtar, Z. (2019). A Correlational Study on Assessment Beliefs and Classroom Assessment Practices of School Teachers. *Journal of Research & Reflections in Education (JRRE), 13*(1).

Hwang, W. Y., Hsu, J. L., Shadiev, R., Chang, C. L., & Huang, Y. M. (2015). Employing self-assessment, journaling, and peer sharing to enhance learning from an online course. Journal of Computing in Higher education, 27, 114-133.

Khalid, U., (2024). Reforming Assessment Methods: Addressing the Gaps in Pakistan's Education System. Spry Contemporary Educational Practices (SCEP), 3(1), 704-716. https://doi.org/10.62681/sprypublishers.scep/3/1/38

Khan, S. &. (2012). Authentic Assessment: An Instructional Tool To Enhance Students Learning. Academic Research International, 1, 2

Linn, R. L., Gronlund, N.E., (2000), Measurement and assessment in Teaching, (8th Ed.) Printice hall, Inc. Pearson Education

McMillan, J. H., & Hearn, J. (2008). Student self-assessment: The key to stronger student motivation and higher achievement. Educational horizons, 87(1), 40 49.

Panadero, E., Jonsson, A., & Botella, J. (2017). Effects of self-assessment on self regulated learning and self-efficacy: Four meta-analyses. Educational research review, 22, 74-98.

Panadero, E., Tapia, J. A., & Huertas, J. A. (2012). Rubrics and self-assessment scripts effects on selfregulation, learning and self-efficacy

in secondary education. Learning and Individual Differences, https://doi.org/10.1016/j.lindif.2012.04.007

Pausch, R., & Zaslow, J. (2008). *The last lecture*. London: Hodder & Stoughton.

Ross, J. A. (2006). The reliability, validity, and utility of self- assessment. Practical Assessment, Research & Evaluation, 11(10). Available online at http://pareonline.net/ getvn.asp?v=11&n=10

Sadler, D. R. (1989). Formative assessment and the design of instructional systems. I*nstructional Science, 18*(2), 119–144. https://doi.org/10.1007/bf00117714

Shapiro, E. S. (2000a, 2000b). in T. R. Kratochwill (Ed.), *Behavioral assessment in schools: theory, research, and clinical foundations* (2nd ed.). The Guilford Press.

Sitzmann, T., Ely, K., Brown, K. G., & Bauer, K. N. (2010). Self-assessment of knowledge: A cognitive learning or affective measure? Academy of Management Learning and https://doi.org/10.5465/amle.9.2.zqr169

Skinner, C. H., Turco, T. L., Beatty, K. L., & Rasavage, C. (1989). Cover, copy, and compare: A

method for increasing multiplication performance. *School Psychology Review,18,* 412–420.

Tomlinson, C. A., & Moon, T. R. (2013). Assessment and student success in a differentiated classroom. Association for Supervision and Curriculum Development.

Topping, K. J. (2003). Self and peer assessment in school and university: Reliability, validity and utility. In M. Segers, F. Dochy, & E. Cascallar (Eds.), Optimising new modes of assessment: In search of qualities and standards, *Springer, 1,* 55 87.

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