International Journal of Learning, Teaching and Educational Research Vol. 22, No. 4, pp. 310-325, April 2023 https://doi.org/10.26803/ijlter.22.4.18 Received Feb 20, 2023; Revised Apr 15, 2023; Accepted May 3, 2023

Metasynthesis of Classroom-Based Assessment Implementation: Impact and Issues

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Abstract. Classroom-based assessment (CBA) is continuous assessment of the teaching and learning process by applying summative and formative elements aimed at student development, progress, and achievement. A metasynthesis study was conducted on previous scientific studies to explore two main objectives, namely the inherent positive impact, and issues in the implementation of CBA. A total of seven articles were selected based on in-depth screening using Scopus, Science Direct, and Springer search agents. Two keywords were employed for data screening, assessment and CBA, and the article publication period was from around 2018 until 2022. The findings of this study show that CBA had increased the self-achievement of students, and developed assessment and pedagogy practices of teachers. Among the positive impacts of CBA are increasing student motivation and achievement and holistic learning. The findings also explain the issues in knowledge, skills, and implementation of CBA. The findings of this metasynthesis study highlight the positive impacts of CBA on student self-achievement, motivation, and holistic learning, while emphasizing the need for checks and balances in implementation. These insights have significant implications for education practitioners, and call for informed decisionmaking and ongoing professional development in assessment literacy to optimize the effectiveness of CBA in supporting student outcomes.

Keywords: metasynthesis; classroom-based assessment; teaching and learning; implementation; pedagogy practices

1. Introduction

Classroom-based assessment (CBA) has been used for a long time in education systems all over the world, in most countries, to assess and evaluate students holistically (Arumugham, 2020). Scriven (1967) was the first to introduce formative and summative assessment. CBA is driven by the fundamental factors and principles and goals of an education system and has undergone several phases of evolution in terms of the form in which it is implemented. These changes have been brought about by shifts in education policy (Lewkowicz & Leung, 2021). To guarantee effective CBA implementation, which benefits students, a variety of initiatives and frameworks have been developed (Brandmo et al., 2020), of which some are assessment literacy frameworks, assessment for learning frameworks, formative assessment frameworks, and CBA frameworks. These frameworks provide guidance and structure for educators to effectively design, implement, and evaluate CBA practices in the classroom, and to, ultimately, enhance student learning and achievement. Different countries have modified the application of CBA to accommodate their particular policy requirements. For instance, in the year 1980, the United Kingdom established the Task Group on Assessment and Testing (TGAT) to resolve issues that had arisen concerning student assessment through public examinations based on statutory curriculum specifications and education-oriented assessment. Therefore, government ought to provide guidance for making decisions about the learning needs of students, which should emphasize formative assessment, as recommended by TGAT (1987).

Because the goal of CBA is to improve a country's education system, it can be implemented in various ways, which helps to make it a dynamic type of assessment. Most education systems recognize that a student's ability should be developed through their potential, space, and opportunity (Climie & Henley, 2016) and that the system should not only measure the achievement of an individual. According to Hawe and Dixon (2017), CBA is implemented to make it possible for students to take control of their learning. Throughout the entirety of the learning session, CBA takes the development of students' abilities into account, thereby empowering students to develop these abilities. According to Lewkowicz and Leung (2021), CBA is an effort to ensure that the goals and intentions of the evaluation are successfully implemented and that the students' final achievement is meaningful. In other words, CBA is an effort to make sure that students have a purposeful educational experience. Therefore, if the concept of CBA is effectively implemented, students will be evaluated holistically and, as a result, their potential will be increased.

In a broader sense, CBA can be understood as an assessment that is split into two distinct parts: academic and non-academic. The purpose of a test is to evaluate a

subject's cognitive (intellectual), psychomotor (physical), affective (emotional and spiritual), and social capabilities (Omar, 2019). According to Hopfenbeck (2018), CBA is connected to formative assessment in the sense that it was first implemented many years ago. Researchers in Malaysia who are involved in education discovered that formative assessment has been given more weight in that country's education system for some time now. Prior to the implementation of CBA, school-based assessment already had this component built in as one of its components. The Malaysian Ministry of Education divides the academic part of CBA into two constituent parts – central and school assessments – to serve students better. In turn, the non-academic part of assessment is broken down into subcategories, such as physical assessment, sports assessment, co-curricular assessment, and psychometric testing (Curriculum Development Division, Ministry of Education Malaysia, 2019).

Assessment practices in the classroom have been a subject of ongoing debate and research in the field of education. Nichols and Gianopulos (2021) argue that assessment plays a critical role in evaluating student learning outcomes and informing instructional practices, and further research and debate on the topic of classroom assessment are needed as contributions to ongoing discourse in the field of mathematics education. Classroom assessment of English language learners (ELLs) is the topic of investigation of Clark-Gareca (2016), who conducted a study on teachers' implementation of accommodations for ELLs during routine maths and science tests. Clark-Gareca found that teachers' implementation of accommodations was influenced by various factors, including their beliefs about ELLs' abilities and language proficiency, their understanding of accommodations, and contextual factors in the classroom.

Regarding Chinese primary school mathematics teachers, Zhao et al. (2017) reviewed teacher-written papers on classroom assessment practices. The authors found that Chinese primary school mathematics teachers had varying perspectives and practices related to classroom assessment, which were influenced by cultural, contextual, and educational factors. Assessment literacy and practices of teachers were examined in the field of writing pedagogy by Acar (2023), who proposes genre pedagogy as a writing pedagogy to help second-language writing instructors enact their classroom writing assessment literacy and feedback literacy. Lam (2019) surveyed the knowledge, conceptions, and practices of classroom-based writing assessment of Hong Kong teachers, while Barnes et al. (2020) explored teachers' epistemic cognition of classroom assessment in situ.

In recent years, multimodal digital classroom assessment has attracted attention. Fjørtoft (2020) examined the use of multimodal digital assessment in the classroom, and Alloway et al. (2009) developed a classroom-based behavioral assessment of working memory, the Working Memory Rating Scale, to measure students' working memory abilities. Furthermore, studies have explored assessment practices in other specific contexts, such as that of in-service EFL teachers (Lan & Fan, 2019) and early childhood education (Thorpe et al., 2020). These studies highlight the importance of understanding assessment practices in

diverse education settings and the need for ongoing research and development in the field of classroom assessment. Alloway et al. (2009) discuss the development and application of the Working Memory Rating Scale and provide insights into potential uses of this assessment tool in education settings. They consider it to be relevant for measuring and the supporting working memory skills of students.

Based on a metasynthesis study of research, this study investigated the problems inherent in implementing CBA, as well as the extent to which those problems have an impact. Future CBA-focused researchers may find the findings of this study to be helpful references. The issues analyzed and their impacts could provide guidance and make recommendations for the successful implementation of a CBA. The objective of this research was to demonstrate that implementing CBA does not always result in problems, or a negative impact. This study presents a discussion and a critical analysis to assist education system practitioners to realize the benefits of CBA and to improve their CBA-based practices.

Based on a metasynthesis study of research, this study offers a novel approach to investigating the inherent problems of CBA implementation and the extent of the impact of these problems. This research fills a gap in the literature by providing a comprehensive analysis of the issues associated with CBA implementation and its implications. The findings of this study can serve as a valuable reference for future researchers focused on CBA and could provide guidance and recommendations for successful implementation of CBA. By critically examining the problems and impacts of CBA, this study contributes to a deeper understanding of CBA-based practices and offers insights for education system practitioners to further enhance the benefits of CBA and improve its implementation. This research challenges the notion that implementing CBA frequently has negative impacts and presents a unique perspective to inform future research and practice in this field.

2. Purpose and Research Objectives

This study reviewed several studies on CBA. The objectives of this research were as follows:

- 1. To identify the positive impact of the implementation of CBA.
- 2. To identify the inherent issues in the implementation of CBA.

3. Research Methodology

Metasynthesis is a qualitative research method that involves systematically reviewing and synthesizing findings from multiple qualitative studies to generate new insights or understandings. It includes stages such as defining the research question, identifying relevant studies, extracting data, synthesizing findings, and interpreting the results to generate new insights or theoretical frameworks (Walsh & Downe, 2005). In the context of this metasynthesis study, the findings of other studies were analyzed qualitatively. According to Hass and Springer (1998), metasynthesis studies have the potential to increase the benefits of research by providing in-depth narrative descriptions, and allow extensive exploration. Scopus, Science Direct, and Springer were some search agents used for data collection. The data that were obtained were subjected to a screening based on

two keywords: assessment and CBA. Other criteria for inclusion were that articles had to have been published between 2018 and 2022 and had to report on evaluations carried out in schools.

The research methodology of this metasynthesis study involved systematically reviewing and synthesizing qualitative findings from multiple studies using the method proposed by Walsh and Downe (2005). Data gathering involved screening articles based on keywords and other criteria, and the instrument used for data extraction was thematic analysis. Qualitative validation techniques, such as triangulation and member checking, were employed to ensure validity. The methodology allowed for the development of in-depth narrative descriptions and extensive exploration of the research question, in accordance with the potential benefits of meta-synthesis studies highlighted by Hass and Springer (1998).

4. Findings

Based on the article search screening, seven articles were selected for analyis in this metasynthesis study, as summarized in Table 1.

Title	Author/s	Year	Journal
Classroom-based assessment	Lewkowicz & Leung	2021	<i>Language Teaching, 54</i> (1) <i>,</i> 47-57. https://doi.org/10.1017/S0261 444820000506
Teachers' views on classroom-based assessment: An exploratory study at an Islamic boarding school in Indonesia	Puad & Ashton	2021	Asia Pacific Journal of Education, 41(2), 253–265, https://doi.org/10.1080/02188 791.2020.1761775
Implementing classroom- based assessment for young EFL learners in the Chinese context: A case study.	Yan et al.	2021	<i>The Asia-Pacific Education</i> <i>Researcher, 30,</i> 541–552. https://doi.org/10.1007/s4029 9-021-00602-9
Bridging classroom assessment and self- regulated learning	Brandmo et al.	2020	Assessment in Education: Principles, Policy & Practice, 27:4, 319-331, https://doi.org/10.1080/09695 94X.2020.1803589
Classroom assessment as the co-regulation of learning	Andrade & Brookhart	2020	Assessment in Education: Principles, Policy & Practice, 27(4), 350-372, https://doi.org/10.1080/09695 94X.2019.1571992
Classroom assessment practices in the middle school science lessons: A study among Greek science teachers	Vlachou	2018	Cogent Education, 5(1), 1455633, https://doi.org/10.1080/23311 86X.2018.1455633

Table 1: Meta-Analysis Findings

Teachers' approaches to classroom assessment: A	DeLuca et al.	2018	Assessment in Education: Principles, Policy & Practice, 25(4), 355–375.
large-scale survey			https://doi.org/10.1080/09695 94X.2016.1244514

Positive impacts of CBA implementation

The implementation of CBA can have various positive impacts. For example, the results of the metasynthesis study reveals that CBA increases students' self-achievement, improves teachers' assessment and pedagogy practices, increases student motivation and achievement, and it encourages holistic learning. Figure 1 depicts the positive impacts of the implementation of CBA.

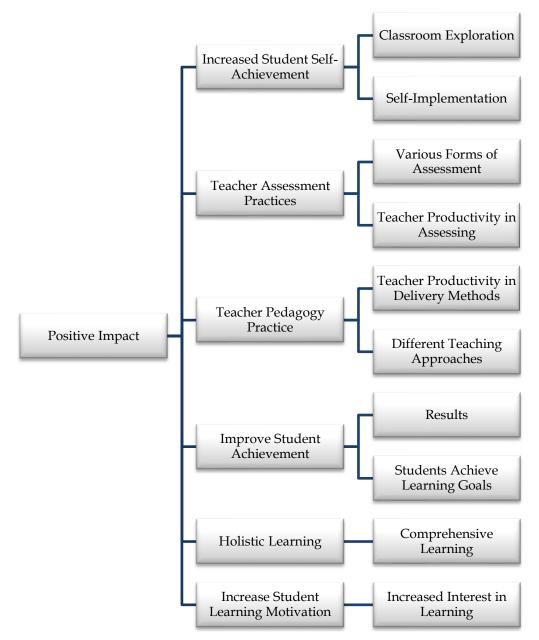


Figure 1. Impact of Implementing CBA

Through a deeper and more comprehensive examination of the topic at hand, from a variety of perspectives, it was found that CBA helps students become more self-sufficient. Students can participate in learning in a manner tailored to their individual requirements, areas of interest, and levels of aptitude (Lewkowicz & Leung, 2021). When CBA is applied, students learn via self-regulated learning, because CBA requires them to perform tasks that have been planned, while they adjust the activities in the classroom to achieve the intended learning objectives. Whether CBA is successful is dependent on a number of factors, including educators' attitudes and beliefs about learning, and their confidence in their abilities as teachers (Brandmo et al., 2020). Because CBA has the ability to improve students' levels of self-achievement, it also has the potential to improve teachers' assessment practices. This is clear from the various assessment methods implemented by educators, who each emphasize continuous and repeated processes to develop student knowledge and abilities (Brandmo et al., 2020). When they implement CBA, teachers are responsible for determining the following aspects of CBA: the purpose of the evaluation; the assessment process; the fairness of assessment; and measurement theory (DeLuca et al., 2018).

Additionally, when applying CBA, teachers frequently use opportunities for impromptu assessment, such as questioning and observational sessions. The primary purpose of closed-ended questions is to elicit specific information or to determine the general comprehension of an individual student or the entire class (DeLuca et al., 2018). This kind of questioning practice allows educators to adjust their lessons as required. Educators usually offer students some form of descriptive feedback about their evaluation of students' progress, to assist students to recognize and correct errors. Educators can guide students, through oral questions, to recognize and correct errors (Yan et al., 2021). Educators can employ CBA as a standard against which to measure their productivity in the classroom, and to develop more effective lesson plans (Vlachou, 2018). CBA provides a meaningful learning experience for students and helps teachers to develop their own potential in a broader range of aspects of teaching.

CBA has also contributed to improved pedagogical practices among educators, as evidenced by their increased use of various instructional strategies and practices to ensure students meet the desired academic goals (Vlachou, 2018). DeLuca et al. (2018) categorize teachers who use CBA into three distinct groups: novice teachers, who will implement CBA in accordance with the standard approach; intermediate teachers, who will use a fair approach; and experienced teachers, who will use a variety of CBA approaches. The pedagogical approaches that teachers use significantly impact how teachers engage in assessment education and incorporate that education into their teaching practice (DeLuca et al., 2018). In addition, CBA learning is holistic, which means that it takes into account the constructive exploration of the instructor, as well as the utilization of a variety of methodological components to ensure that the learning goals and vision can be implemented perfectly (Brandmo et al., 2020). Students receive additional motivation from the implementation of CBA. Students with low achievement levels can be motivated to improve their achievement by considering their existing successes based on their summative performance (Yan et al., 2021). In addition to using elements of reward, Yan et al. (2021) used their research to motivate students to achieve positive results.

The final positive impact that the implementation of CBA has, and one that is highly effective in the education system, is to increase students' academic achievement levels. Teachers will gain a better understanding of their role of managing learning sessions to assist students to achieve the learning goals that have been targeted through CBA. In addition, teachers will assess students' levels of comprehension, in order to ensure that every student benefits from the learning experience (Vlachou, 2018). Consequently, students are incentivized to improve their academic performance at school, which could narrow the gap between students with high, medium, and low levels of achievement (Vlachou, 2018). According to Puad and Ashton (2021), students' behavior and attitudes can be improved by implementing CBA, and by emphasizing resiliency and seriousness. In addition, CBA generates excitement among students about the potential for their academic performance to improve during the learning session.

Inherent issues of CBA implementation

Through the metasynthesis analysis, several inherent issues of CBA implementation were identified. The three main issues underlying the implementation of CBA are knowledge, skills, and implementation, as shown in Figure 2.

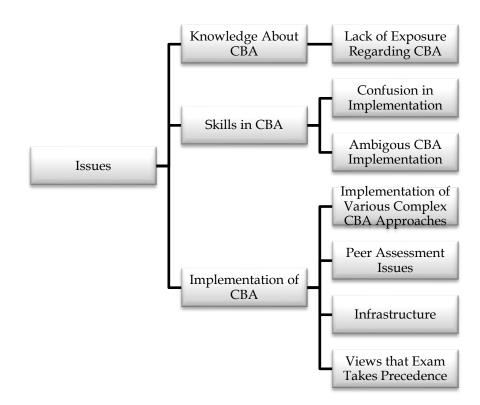


Figure 2. Inherent issues of CBA implementation

The first problem concerns an individual's level of knowledge regarding CBA. A study found that teachers lacked the knowledge and exposure necessary to implement CBA successfully. For instance, the Educational Assessment Course in Greece included preservice training for new teachers, and the professional development continuum program did not specifically include CBA (Vlachou, 2018). Despite the fact that this finding focused on Greece, findings in countries concur. According to a study conducted by Yan et al. (2021), teachers are not provided with the professional knowledge and skills about CBA associated with assessment literacy training when they pursue a Bachelor of Arts degree in education. Even though a study by Yan et al. (2021) stated that some teachers did not directly receive CBA training during the in-service teacher education program, CBA was not included as the primary component of the lesson syllabus. As a consequence, teachers were uncertain on how the interaction process should take place between teachers and students during the implementation of the CBA process; as a consequence, meaningful learning was not achieved (Lewkowicz & Leung, 2021). In addition, instructors found it difficult to determine the role students should play in the evaluation process and how peer evaluation should be carried out effectively in the classroom (Lewkowicz & Leung, 2021).

The second problem is a shortage of the skills needed to implement CBA. According to the findings of this study, educators were uncertain about how CBA was to be carried out. The teachers were unable to explain the goals and standards for success required by the evaluation of students. CBA sessions used various assessment methods; teachers relied more on formal assessments than assessments involving students, such as oral reading tasks and textbook exercises (Yan et al., 2021). Additionally, educators were confused when administering the CBA to students, because educators were more dominant in the classroom setting than the students themselves (Vlachou, 2018). Because of this, students played a passive role in the student-centered assessment process, preventing it from being implemented in a manner consistent with the purpose of CBA. While implementing CBA, teachers gathered evidence of student achievement but did not work to address deficiencies that surfaced throughout the learning session. As a result, students did not improve the quality of their work (Vlachou, 2018). CBA is a process that takes place continuously over time, beginning before, continuing throughout, and concluding after a learning session (Campbell, 2013). Competition among students is strongly encouraged within the context of the implementation of CBA. However, competition also has negative effects, because of the confusion of implementation, which occurs when teachers compare the achievements of different students to such an extent that students' self-confidence and their social relationships suffer (Yan et al., 2021).

The third problem pertains to the actual application of CBA. It is considered difficult to implement because various pedagogical ideas and learning theories need to be viewed simultaneously. The utilization of CBA places restrictions on the practicability of the preeminent psychometric paradigm when it is applied to summative evaluation. As a result of the activities carried out, educators must implicitly discover their students' abilities using CBA. It also requires teachers to be more sensitive; if they fail, it will be detrimental to both students and teachers

(Lewkowicz & Leung, 2021). In addition, the problem of peer evaluation was also addressed by other research. According to Puad and Ashton (2021), students may not fully understand the material being taught. As a result, they have difficulty evaluating the work of either themselves or their peers. In addition, Puad and Ashton (2021) found that one of the reasons teachers give students homework in the classroom is to observe students' responsibilities in their effort to complete their work this was found to be one of the reasons teachers give students assignments. However, there are concerns regarding responsibility when putting CBA into practice.

The issue of CBA implementation is also mentioned by Yan et al. (2021), who discuss the difficulty of implementing CBA sessions due to infrastructure factors. The typical number of students enrolled in a single classroom in some countries with a high population density, such as China, is very high, averaging between 40 and 50 individuals. As teachers found it difficult to put together a variety of strategies and tasks, CBA could only be used on an ad hoc basis. The large number of students made it difficult for teachers to provide students with detailed feedback and prevented teachers from consistently observing large numbers of students on an individual basis. In fact, according to Yan et al. (2021), researchers consider the implementation of CBA to be unimportant, because examinations have been commonly practiced, and summative marks do not play an essential role in students' lives. In other words, CBA is deemed to be irrelevant. Most teachers used a grading system that involved assigning points to students' work, to prepare them for high-stakes exams. In addition, in the context of the education system in Chinese schools, the culture of focusing on examinations has affected the CBA practices of teachers. The schools put a significant amount of weight on the summative grades. The examination structure was divided into two parts: the first was continuous assessment, which included aspects such as student performance and in-class assignments; the second was the final examination. These two sections of the assignment were used to determine students' overall performance, based on the summative marks they received. Even though teachers participated in formative CBA activities with their students, such as self and peer assessment and descriptive feedback, teachers remained committed to the examination system. It was a significant hurdle for the process of putting the CBA into effect.

5. Discussion

According to the findings of the metasynthesis study, CBA is regarded as a valuable assessment that has beneficial effects on both students and teachers. In spite of the inherent problems that were brought to light by this research, CBA is still capable of producing a variety of beneficial effects overall. In this discussion section, the inherent problems are broken down into minute details of their components.

The primary issue that was discovered by this research pertains to the knowledge component. Due to its significant impact on the actual implementation of CBA and its intended purpose, the role of knowledge must not be taken lightly. Failure to implement CBA due to a lack of knowledge will result in failure. Fullan (2005)

repeatedly emphasizes the importance of alterations to educational practices in tandem with fundamental facets of knowledge. Sadly, a significant number of educators were unable to comprehend the whole idea behind CBA. Misconceptions regarding assessment lead to educators having the impression that CBA will add a new burden to their workload. Officials, such as education officers who are responsible for implementing CBA, are still not knowledgeable about it, due to ambiguous information regarding the implementation of CBA. The relation of CBA practices to education officers may suggest that these officers are involved in the implementation of CBA in educational settings. Officers' shortcomings regarding knowledge of CBA may negatively impact assessment results, as it may lead to improper or inconsistent implementation of CBA, which can affect the accuracy and reliability of assessment outcomes. Further research and investigation is needed to explore in more detail the specific relationship between education officers, CBA practices, and the impact of their knowledge weaknesses on assessment results.

The topic of expertise also emerged in this investigation. Expertise has a close connection to knowledge foundation, which is the primary pillar. Nevertheless, this problem can be solved, by providing persistent training to educators on implementing CBA in their classrooms (Randel et al., 2016). Selecting trainers to guide educators will ensure that skills can be improved and that confusion in the implementation of CBA can be overcome (Christoforidou & Kyriakides, 2021).

The third issue emphasized throughout this investigation is the application of CBA. According to a comprehensive review of the relevant literature, the problem of application constitutes a significant barrier to the application of CBA. Teachers need to adapt to a dynamic and varied education system, which will create inconsistency in the CBA's priority policy, and may result in the policy occasionally being empowered or becoming a side issue. This inconsistency ultimately results in a situation that is neither stable nor certain and, consequently, CBA is not given priority by the education system. Furthermore, the problem of inadequate or nonexistent infrastructure is an essential topic of discussion among educators. CBA cannot be implemented perfectly in a classroom that lacks conducive conditions, and which is overcrowded with too many students because of these factors (Marais, 2016).

Even though CBA has some problems, it has a number of positive effects on the education system as a whole, especially on the students and the teachers. CBA can help students achieve more in their own lives. Participating in CBA will teach students how to achieve their education goals through healthy competition. As is well known, the concept of CBA calls for an ongoing and thorough evaluation, which may be verbal, written, or observational feedback. Students can improve their achievement levels using these three assessment strategies. This self-accomplishment can be evaluated using observational assessment. It may include skills in areas such as attitudes and behavior, practical, manipulation, social, kinesthetic, computer literacy, and creative abilities (Curriculum Development Division, Ministry of Education Malaysia, 2019). In general, the seven facets mentioned above refer to the efforts that students make on their own to improve

their overall performance. The purpose of observation that is part of the assessment involves looking at each student's efforts to improve all the skills taught to them by the instructor throughout the process of teaching and learning, through learning with other students (Hopfenbeck, 2020). This facet is evaluated by the number of students demonstrating positive changes and improvements in their achievements.

Self-assessment, shaped by beliefs about its nature, has the potential to influence students' attitudes and behaviors. Proficient students can act as mentors, and can foster social skills and interactions. By applying prior knowledge and engaging in creative problem-solving, students produce unique outcomes. Self-assessment promotes holistic development and enhanced learning outcomes by developing processing skills and creativity. Self-achievement also has the potential to mold each student's attitudes and behavior. A student who possesses a particular skill or a good level of mastery could act as a guide and mentor to a student who lacks these qualities. It helps the student's social skills and interaction with others in a roundabout way. There is room for development in the students' processing and creative abilities. Students apply the prior knowledge they have gained through teaching and learning to a process of generating and refining ideas, ultimately working towards producing something superior to and distinct from what their classmates have produced. CBA affects not only students, but also benefits teachers, particularly the way they approach pedagogical practices. The skills of a teacher to select and employ pedagogy appropriate for the student group can be trained and improved through the use of CBA. In their role as educators, teachers are required to recognize the proper pedagogy to be applied during the teaching and learning process. This is necessary, because each student comes equipped with unique knowledge, skills, and areas of weakness. Educators are encouraged to vary the pedagogy they implement for teaching and learning. It is essential that they choose an appropriate pedagogy to ensure that each student masters the material. Differentiated pedagogy refers to selecting a learning strategy appropriate for each student to meet learning goals and objectives.

Integrating assessment perspectives in teachers' practices can greatly improve the overall quality of education. Traditional methods of evaluation that are based solely on academic performance may not fully capture the diverse needs and abilities of students. However, with the help of CBA, teachers can adopt a more comprehensive approach to assessment, which takes into consideration students' attitudes and behaviors, in addition to their academic performance.

One of the key benefits of incorporating CBA in teachers' practices is that it enables them to select the most appropriate type of pedagogy based on the individual needs and interests of their students. By understanding the unique characteristics of their students, teachers can tailor their instructional methods and applications accordingly. Doing so helps teachers to create a more engaging and inclusive learning environment, in which students are motivated to learn and where they actively participate in the educational process.

Furthermore, CBA encourages teachers to think creatively and innovatively about the types of assessments that are most suitable for their students. CBA goes

beyond the traditional methods of assessment and encourages teachers to develop a wide range of assessment strategies that cater to the diverse abilities and strengths of their students. CBA promotes a student-centered approach to education, where the focus is on understanding the individual needs of students and providing them with appropriate opportunities for learning and growth.

The adoption of CBA in teachers' practices also aligns with the recommendations of education experts such as Fullan (2005), who emphasize the importance of educators, including teachers, for generating ideas and insights related to assessment. It empowers teachers to take an active role in shaping the assessment practices in their classrooms, based on their professional judgement and expertise. This promotes a culture of continuous improvement in education, where teachers are encouraged to reflect on their practices and adapt them to meet the needs of their students better. In addition, using CBA in teacher practices promotes a holistic approach to assessment, which goes beyond academic performance and considers students' attitudes, behaviors, and abilities. Doing so helps foster a more well-rounded and comprehensive evaluation of students' progress, and provides valuable insights into their overall development and growth.

To implement CBA effectively, teachers must be equipped with the necessary knowledge and skills in assessment design, implementation, and interpretation. Professional development opportunities and training programs can be provided to support teachers to enhance their assessment practices and to ensure that they align with the principles of CBA. Collaborative efforts among teachers, administrators, and policymakers can also be encouraged to create a conducive environment for the integration of CBA in teachers' practices. In conclusion, the integration of assessment perspective in teachers' practices, particularly through the use of CBA, can greatly enhance the quality of education. It empowers teachers to adopt a student-centered approach, fosters creativity and innovation in assessment as a tool for learning and growth, teachers can improve their instructional practices and create a more engaging and inclusive learning environment for their students.

6. Conclusion

CBA is a crucial process that evaluates students' knowledge, skills, and abilities in the classroom through various methods, such as tests, quizzes, projects, and observations. Its purposes include providing feedback to students, guiding instructional planning for teachers, monitoring student progress, evaluating teaching strategies, and informing parents about their children's academic performance. Effective CBA requires educators to possess the necessary skills and knowledge related to content standards, learning levels, and teaching syllabus performance standards. CBA plays a significant role in facilitating student selfassessment, guiding instructional planning, monitoring progress, and evaluating teaching effectiveness. It provides valuable feedback to students, helps teachers enhance instructional strategies, allows monitoring of student progress, and evaluates teaching effectiveness. CBA also informs parents about their child's academic progress, and enables them to provide support at home. By analyzing student performance data, teachers can assess the success of their instructional methods and make the necessary adjustments. Overall, CBA has practical applications in various aspects of education, by serving as a valuable tool for enhancing student learning, improving instructional practices, and promoting parental involvement in the educational process.

In conclusion, CBA is a critical process that evaluates students' knowledge, skills, and abilities in the classroom. It requires careful implementation by educators with the necessary skills and knowledge to align assessment methods with learning objectives. CBA serves multiple purposes, including providing feedback to students, guiding instructional planning, monitoring progress, evaluating teaching effectiveness, and informing parents. Recommendations for future research and stakeholders include establishing clear guidelines for assessment purpose, design, administration, scoring, and feedback, providing adequate training for teachers and stakeholders, fostering a collaborative approach involving students, considering contextual factors, addressing validity and reliability issues, and promoting balanced assessment approaches, continuous monitoring and evaluation, research and innovation, and collaboration between researchers and practitioners to improve CBA implementation.

Acknowledgments

The authors would like to extend their gratitude to the Research Management and Innovation Centre (RMIC), Sultan Idris Education University (UPSI), for the University Special Interest Group Research Grants (code: 2022-0034-106-01) that helped fund the research.

7. References

- Acar, A. S. (2023). Genre pedagogy: A writing pedagogy to help L2 writing instructors enact their classroom writing assessment literacy and feedback literacy. Assessing Writing, 56, 100717. https://doi.org/10.1016/j.asw.2023.100717
- Alloway, T. P., Gathercole, S. E., Kirkwood, H., & Elliott, J. (2009). The working memory rating scale: A classroom-based behavioral assessment of working memory. *Learning and Individual Differences*, 19(2), 242–245. https://doi.org/10.1016/j.lindif.2008.10.003
- Andrade, H. L., & Brookhart, S. M. (2020). Classroom assessment as the co-regulation of learning. Assessment in Education: Principles, Policy & Practice, 27(4), 350–372. https://doi.org/10.1080/0969594X.2019.1571992
- Arumugham, K. S. (2020). Kurikulum, pengajaran dan pentaksiran dari perspektif pelaksanaan pentaksiran bilik darjah [Curriculum, teaching and assessment from the perspective of classroom assessment implementation]. Asian People Journal (APJ), 3(1), 152–161. https://doi.org/10.37231/apj.2020.3.1.175
- Barnes, N., Fives, H., Mabrouk-Hattab, S., & SaizdeLaMora, K. (2020). Teachers' epistemic cognition in situ: Evidence from classroom assessment. *Contemporary Educational Psychology*, 60, 101837. https://doi.org/10.1016/j.cedpsych.2020.101837
- Brandmo, C., Panadero, E., & Hopfenbeck, T. N. (2020). Bridging classroom assessment and self-regulated learning. Assessment in Education: Principles, Policy & Practice, 27(4), 319–331. https://doi.org/10.1080/0969594X.2020.1803589

- Curriculum Development Division, Ministry of Education Malaysia, (2019). *Classroom* assessment implementation guide (2nd ed).
- Campbell, C. (2013). Research on teacher competency in classroom based assessment. In J. H. McMillan (Ed.), *SAGE handbook of research on classroom assessment*. Sage. https://doi.org/10.4135/9781452218649.n5
- Christoforidou, M., & Kyriakides, L. (2021). Developing teacher assessment skills: The impact of the dynamic approach to teacher professional development. *Studies in Educational Evaluation*, 70, 101051. https://doi.org/10.1016/j.stueduc.2021.101051
- Clark-Gareca, B. (2016). Classroom assessment and English Language Learners: Teachers' accommodations implementation on routine math and science tests. *Teaching and Teacher Education*, 54, 139-148. https://doi.org/10.1016/j.tate.2015.11.003
- Climie, E., & Henley, L. (2016). A renewed focus on strengths-based assessment in schools. British Journal of Special Education, 43(2), 108–121. https://doi.org/10.1111/1467-8578.12131
- DeLuca, C., Valiquette, A., Coombs, A., LaPointe-McEwan, D., & Luhanga, U. (2018). Teachers' approaches to classroom assessment: A large-scale survey. Assessment in Education: Principles, Policy & Practice, 25(4), 355-375. https://doi.org/10.1080/0969594X.2016.1244514
- Fjørtoft, H. (2020). Multimodal digital classroom assessments. *Computers & Education*, 152, 103892. https://doi.org/10.1016/j.compedu.2020.103892
- Fullan, M. (2005). The meaning of educational change: A quarter of a century of learning. In A. Lieberman (Ed.), *The roots of educational change: International handbook of educational change* (pp. 202–216). Springer. https://10.1007/1-4020-4451-8_12
- Haas, P. J., & Springer, J. F. (2014). *Applied policy research: Concepts and cases* (Vol. 1051). Routledge.
- Hawe, E., & Dixon, H. (2017). Assessment for learning: a catalyst for student selfregulation. Assessment & Evaluation in Higher Education, 42(8), 1181–1192. https://doi.org/10.1080/02602938.2016.1236360
- Hopfenbeck, T. N. (2018). Classroom assessment, pedagogy and learning twenty years after Black and Wiliam 1998. Assessment in Education, Principles, Policy & Practice, 25(6), 545–550. https://doi.org/http://ezproxyprd.bodleian.ox.ac.uk:2094/10.1080/0969594X.2 018.1553695
- Hopfenbeck, T. N. (2020). The need for actionable feedback in assessment literacy. *Assessment in Education: Principles, Policy & Practice,* 27(3), 249–251. https://doi.org/10.1080/0969594X.2020.1771665
- Lam, R. (2019). Teacher assessment literacy: Surveying knowledge, conceptions and practices of classroom-based writing assessment in Hong Kong. System, 81, 78-89. https://doi.org/10.1016/j.system.2019.01.006
- Lan, C., & Fan, S. (2019). Developing classroom-based language assessment literacy for inservice EFL teachers: The gaps. *Studies in Educational Evaluation*, 61, 112–122. https://doi.org/10.1016/j.stueduc.2019.03.003
- Lewkowicz, J., & Leung, C. (2021). Classroom-based assessment. Language Teaching, 54(1), 47–57. https://10.1017/S0261444820000506
- Marais, P. (2016). "We can't believe what we see": Overcrowded classrooms through the eyes of student teachers. *South African Journal of Education*, 36(2), 1–10. https://10.15700/saje.v36n2a1201
- Nichols, P. D., & Gianopulos, G. (2021). Arguing about the effectiveness of assessments for the classroom. *The Journal of Mathematical Behavior*, 61, 100839. https://doi.org/10.1016/j.jmathb.2020.100839

- Omar, S. S. H. W. (2019). Pengetahuan, kemahiran, sikap dan masalah guru dalam melaksanakan pentaksiran bilik darjah bahasa Melayu di sekolah rendah. [Knowledge, skills, attitude and problem of teacher's in implementing classroom based assessment Malay language in primary schools]. Jurnal Pendidikan Bahasa Melayu, 9(3), 56-67. http://journalarticle.ukm.my/14524/
- Puad, L. M. A. Z., & Ashton, K. (2021). Teachers' views on classroom-based assessment: an exploratory study at an Islamic boarding school in Indonesia. *Asia Pacific Journal of Education*, 41(2), 253–265. https://doi.org/10.1080/02188791.2020.1761775
- Randel, B., Apthorp, H., Beesley, A. D., Clark, T. F., & Wang, X. (2016). Impacts of professional development in classroom assessment on teacher and student outcomes. *The Journal of Educational Research*, 109(5), 491–502. https://doi.org/10.1080/00220671.2014.992581
- Scriven, M. (1967). The methodology of evaluation. In Stake, R. E. (Ed.), *Curriculum evaluation* (pp. 39–83). Rand McNally.
- TGAT. (1987). *National curriculum: A report*. Department of Education and Science and the Welsh Office Association.
- Thorpe, K., Rankin, P., Beatton, T., Houen, S., Sandi, M., Siraj, I., & Staton, S. (2020). The when and what of measuring ECE quality: Analysis of variation in the Classroom Assessment Scoring System (CLASS) across the ECE day. *Early Childhood Research Quarterly*, *53*, 274–286. https://doi.org/10.1016/j.ecresq.2020.05.003
- Vlachou, M. A. (2018). Classroom assessment practices in middle school science lessons: A study among Greek science teachers. *Cogent Education*, 5(1), 1455633. https://doi.org/10.1080/2331186X.2018.1455633
- Walsh, D., & Downe, S. (2005). Meta-synthesis method for qualitative research: a literature review. *Journal of Advanced Nursing*, 50(2), 204–211. https://doi.org/10.1111/j.1365-2648.2005.03380.x
- Yan, Q., Zhang, L. J., & Cheng, X. (2021). Implementing classroom-based assessment for young EFL learners in the Chinese context: a case study. *The Asia-Pacific Education Researcher*, 30, 541-552. https://doi.org/10.1007/s40299-021-00602-9
- Zhao, X., Van den Heuvel-Panhuizen, M., & Veldhuis, M. (2017). Classroom assessment in the eyes of Chinese primary mathematics teachers: A review of teacher-written papers. *Studies in Educational Evaluation*, 52, 42–54. https://doi.org/10.1016/j.stueduc.2016.12.002