Journal of Education and Learning (EduLearn)
Vol. 15, No. 4, November 2021, pp. 483~489
ISSN: 2089-9823 DOI: 10.11591/edulearn.v15i4.20341

Factors affecting teacher educators adoption of formative assessment strategies in the mathematics classroom

Justice Enu
Department of Teacher Education, Faculty of Educational Studies, Kwame Nkrumah University of Science and Technology, Ghana

Article Info

Article history:

Received Jul 25, 2021
Revised Oct 23, 2021
Accepted Nov 29, 2021

Keywords:

Formative assessment
Mathematics
Teacher educator

ABSTRACT

The purpose of this study was to look into the factors that influence mathematics teacher educators' formative assessment practices. This paper took a qualitative case study research design approach with six educators teaching mathematics in three teacher Colleges of Education in Ghana. The exploration focused on factors that hinders teacher educators use of formative assessment practices. Data were generated through the administration of semi – structured interviews and lesson observations. The qualitative data was analyzed using thematic analysis. Findings revealed that major factors which limit teacher educators formative assessment practices were: large class size, time, lack of transparency in assessment, and internal and external summative assessment issues. The factors limiting teacher educators' use of formative assessment (FA) discussed in this study are beneficial for teacher college administration in addressing the issues and educators in assisting pre-service teachers in eliminating these factors during their training and after passing out from the college of education to the teaching field. Based on the findings, it is recommended that a large scale study is conducted on factors that affect teachers formative assessment practices and the effect on students mathematics learning.

Corresponding Author:

Justice Enu
Department of Teacher Education, Faculty of Educational Studies
Kwame Nkrumah University of Science and Technology
Private Mail Bag, University Post Office, Kumasi, Ghana
Email: enukj28@gmail.com

1. INTRODUCTION

Naturally, assessment is part of peoples' everyday world. People make decisions based on the information available to them, which they see as relevant for the purposes of their decision. In the context of education, assessment forms an integral component of the instruction and learning process; therefore, assessment and instruction cannot be viewed or understood in isolation [1]. According to Broadfoot [2], without assessment, teachers and students would have no way of knowing whether or what learning is taking place. In other words, assessment is a way of finding out if learning has taken place, which requires teachers' understanding and skills to ensure effective implementation. Moss [3] posits that assessment is "undeniably one of the teachers most complex and important tasks." Formative assessment (FA) has been identified as classroom practices that teachers can employ to ascertain the progress of their students' learning and identify learning gaps to make instructional adjustments that lead to greater success for the students. Research has shown that FA affects the academic performance of students [4], [5]. For example Lau [6] studied the impact of FA of 71 undergraduate students in Educational Psychology and found that students in the experimental

group had a 9-point gain in performance, which is significantly better than in the control group (2-point gain). Although literature has revealed positive feedback about FA in relation to learning, this positive feedback is based on the instructors' knowledge and practice. Knowing about FA is necessary, but knowing how the instructors know about and practice it during teaching and learning is critical.

However, there are many challenges facing teachers' assessment practices in general, and specifically FA, that need to be understood and addressed for better learning outcomes. According to Black and Wiliam in Ho [5] FA is seldom used in the classroom. Similarly, Leahy, *et al*. [7] posit that teachers may be aware of FA and its strategies, but they do not use it in their classrooms. According to various studies conducted in assessment and assessment practices, several factors have been mentioned to affect the assessment practices of academic staff [8]. Academic level, class size, type of university, and assessment-based training acquired by academic staff are some of the factors that inhibit teachers' assessment practices [8], [9]. Kanjee [10] also observed that teachers still face challenges in implementing FA in the classroom because there is still a major influence of summative assessment on FA. These studies were conducted on in-service teachers at the high school level, not on teacher educators at the college or university level. It is important to note that teacher educators are responsible for training teachers and equipping them with skills and knowledge to become effective practitioners in the school settings. Therefore, teacher educators knowledge on assessment issues is not only vital for planning and designing teaching and learning activities, but also for addressing the learning needs of students. Their knowledge is vital for equipping preservice teachers with the necessary knowledge to become master craftsperson of assessment in their classroom when they become classroom practitioners.

The policy of assessment in Ghana calls for both assessment for learning (FA) and assessment of learning with more emphasis placed on assessment for learning, further stressing that educators need to implement it to enhance learning. What seems to be missing even now are measure to ensure that it is being implemented [11]. A review of literature on this phenomenon in the context of Ghana has shown that limited studies have been conducted in this area and specifically in mathematics. The few studies conducted on teacher educators' problems in utilizing formative assessment in the lecturer room focused on English and Social studies and not on mathematics [12]. For example, Ankomah and Oduro [12] explored lecturers' dilemma in improving learning via formative assessment in English and found time constraints and class size as inhibitors in the teachers' implementation of formative assessment. In this context, this study aims to discuss the perspectives of mathematics teacher educators (MTEs) on the factors that influence their adoption of FA strategies.

2. LITERATURE REVIEW

Formative assessment is held up as an assessment practice that can help teachers adjust and improve their instructional practices to enhance students' academic performance. However, certain contextual factors impede teacher educators' practice of FA. According to Young and Jackman [13], teachers have a positive attitude towards FA practices but are less confident when it comes to the enactment of FA strategies [7]. Literature has shown that teachers' lack of confidence in implementing FA techniques might be attributed to constraints such as reforms in education, change in curriculum, school context, and learning culture [14]. Contributing to the debate, Hui, Brown, and Chan [15] indicate that school curriculum, high stakes, summative and examination-oriented practices influence teachers' adoption and implementation of FA strategies. Drawing from the position and reasons presented by researchers [14], [15], it can be argued that both internal and external factors influence teachers' adoption and implementation of FA strategies. An external threat to FA implementation could be pressures from outside the classroom; for instance, if teachers are required to keep up with a fast-paced schedule and complete a prescribed module (course of study). A shortage of teaching and learning materials affects the effective implementation of classroom assessment practice [16]. Another threat that inhibits teachers' adoption and implementation of FA in the classroom is the lack of material resources. Also, the challenge of large classroom size has been found to impede effective FA practice [17]–[19]. It is worth noting that success in the implementation of FA at the classroom level heavily depends on how teachers understand FA. Because of this, Husain [20] argues that the most critical threat which hinders effective implementation of FA is teachers' lack of knowledge of FA and the use of FA strategies.

On the other hand, Carless [21] believe that pressuring teachers to use FA strategies would not result in widespread adoption. Instead, stakeholders must motivate teachers about how to develop their FA practices. It also necessitates an inquiry into how barriers to teachers' FA practice in the classroom can be removed [17]. From the foregoing, it is clear that various factors hinder teachers' FA adoption and implementation. As a result, it's critical to recognize possible factors that could influence a teacher educator's willingness to use formative assessment in their classroom in Ghana.

2.1. Framework for this Study

The study adapted [17] model on factors that affect teachers formative assessment practices, both in the data generation method used and the analysis of data. Izci model as seen in Figure 1 is based on teachers changed environment model developed by Clarke and Hollingsworth [22]. The model highlight four factors that influence teachers adoption of formative assessment in their instructional practices. In the following the four components are described briefly: i) Personal factors: Teachers perceptions of formative assessment constitute the personal factors [17]. Extent literature have established that factors such as teachers attitude; teachers beliefs and values; teachers pedagogical content knowledge (PCK); teachers understanding of assessment principals influence teachers adoption of formative assessment strategies; ii) Resource – related factors: Studies done in assessment highlight large class size, instructional materials, time, funds as examples of resource factors which influences the way academic staff assess their students [23], [24]. Teachers assess the students they teach poorly as a result of large class size [23] and therefore for effective assessment practices, teachers need sizable or small classes so that they can handle the assessment adequately; iii) Contextual factors: These factors relate to school factors such as school environment and policy that affects teachers formative assessment practices. Among the contextual factors which affect teachers decisions about formative assessment includes; views of parents, school context and assessment polices [17], [25]. Studies have shown that school policy usually require the use of test in reporting students improvement on standard. According to Mudin [26], [27] pressure from school management forces teachers to employ summative assessment to maintain high assessment scores rather that meeting learnings of students that requires the use of FA; iv) External factors: Izci [17] mooted that external factors are not controlled or directed under the teacher but affects teachers practices and decisions about formative assessment. External factors captured and highlighted that affects teachers FA adoption include: State and local education policies, high stakes and accountability assessment and curriculum developers [17], [28]. From the foregoing, these factors causes a gap between theory and practices of formative assessment.

Figure 1. Factors that affect teachers' adoption of formative assessment (adapted from Izci [17])

3. RESEARCH METHOD

In this study, interviews and non-participatory observations were used to generate data from six mathematics teacher educators from three teacher colleges situated in the Central Region, Ghana. According to Schreiber and Asner-Self [29] in a qualitative study, the sample size is not the most highly considered issue – the richness of the views on a particular situation that are unearthed matter more than the numbers. In each of the colleges, the researcher gave a short presentation explaining the whole research project to teacher educators of the mathematics unit of the Department of Mathematics and ICT Education before they were invited to participate. Consent was sort and documented (signing of consent letter) from educators who volunteered to participate in the study. The interview guide mainly required educators to share their views on factors that impede their adoption and enactment of formative assessment in their instructional activities. Interviews were audio-recorded, and the data transcribed verbatim. Participants' responses were assigned numbers to differentiate their responses and a letter (P) to denote the participant. For instance (P#1) indicate the response for participant one. The transcribed data were analyzed through the identification of themes in line with the critical question for the study. The theoretical position which the design of this study followed was interpretivism, which used a qualitative methodological approach to determine the actual reality regarding the study. Qualitative researchers aim to gain an understanding of the social world from the participants' perspective. It is on the basis of this premise that the researcher chose a qualitative approach for this study [30].

4. RESULTS

From the data, four major factors emerged as factors which limit mathematics teacher educators adoption of formative assessment strategies: Issues of internal and external summative assessment, Lack of instructional resources, overfull class, and lack of assessment transparency.

4.1. Issues of internal and external summative assessment

Participants mentioned during the semi-structured interview that they produce continuous assessment marks for their affiliate university. These marks contribute 40% towards the final module assessment marks of the students. This is exemplified in the extract below.

> **P#4:** … *we produce a continuous assessment of 40% which is used in addition to the 60% end-of-semester mark* (by affiliate university).

> This was confirmed by **P#2**: *Students are graded based on the ratio of 40 against 60. We produce 40% [of the] marks, which is more formative because it is based on the quizzes and assignment, while the 60% is for the end of semester examination* (external by affiliate university).

MTEs responses above suggest that the continuous assessment marks are combined with the marks from the external examination (end of semester examination) to arrive at the final score of the module. Therefore, all six teacher educators involved in this study were observed engaging in a series of activities to generate continuous assessment scores for their students. Classroom observation revealed that teacher educators' interaction focuses more on external examination to maximize their students' grades rather than assess to inform learning. It appears that the high stakes nature of the end-of-semester examination distracts teacher educators' attention from implementing some of the elements of FA strategies in their lecturer room.

4.2. Formative assessment is time-consuming

In this study, some of the participants indicated that FA techniques consume time when enacting it. These notions are supported by excerpts from the interview transcripts that follow:

> **P#6**: *Some of the techniques consume time. You have to allow time so that you will be able to exhaust some concepts*.

P#6 mentioned peer assessment/group presentation as a technique that requires time for implementation in a follow-up question. This strategy might be seen as time-consuming, particularly when teachers have to complete the course outline for their modules to enable their students to sit for the external examination.

> **P#3**: *In formative assessment, teachers are able to find out whether what was taught had been understood by students before other concepts can be introduced. Therefore, if students are not able to submit their exercise or assignment on time for necessary action to be taken, it affects the process.*

P#3 comment indicates that students' delay in submitting assessment tasks affects how feedback can be provided and delays instructional progress since early concepts need to be understood before building on them.

In addition, P#4 stated:

> *It is time-consuming as one tries to end the lesson without untying all knots, which may inhibit conception and formulating of higher-order questions on the spot to test understanding of a concept. Sometimes it is very challenging.*

P#4, on the other hand, believes that FA becomes time-consuming when addressing misconceptions that students hold and more challenging when the teacher is unable to correct all of the misconceptions of the students.

4.3. Lack of instructional resources and overfull class

Meaningful learning of mathematics requires useful mathematical tools or manipulatives, such as algebra tiles, geoboards, counters, and so on [31]. This means that the absence of or inadequate learning resources will have a detrimental effect on teachers' pedagogy and students' learning. Teacher educators

expressed that there was a lack of teaching-learning materials. They said that the absence of instructional material hinders their implementation of various assessment strategies.

P#5: Lack of (teaching) materials makes it difficult to implement some of these assessment techniques.

> This was reaffirmed by **P#6**: *Some mathematics concepts require teaching-learning materials (TLMs) to support the teaching. So, when a college or school lacks these materials, then it makes it difficult to teach, and creating arbitrary materials might not work to the expected standard.*

Another participant felt a need for authorities to provide teaching-learning materials to enable them to perform their duties to ensure improvement of students' mathematics performance. This was evident in P#3's comments:

> *Even though we have embraced formative assessment techniques to improve students' performance, but colleges lack teaching-learning materials, so management needs to provide teaching materials* (**P#3**).

Lack of instructional materials limited most of the learning activities in the lecture room. For example, P#1 has to teach the concept of fractions using the Cuisenaire rod in an abstract form, which does not help in bridging the gap between concept and facilitation of conception formation in mathematics. FA implementation may not always require complex technology to be effective [32], but productive learning could be supported through equipment and conducive physical conditions [33].

In addition, classroom observation showed that overcrowded classrooms impeded teacher educators' implementation of FA strategies. The student enrollment of most of the modules observed was large, with large lecture areas. Packed lecture halls with limited tables and chairs made it impossible for teacher educators to implement some FA techniques effectively in their modules. For example, Fordjour found it difficult to ensure students' collaboration during his lecture since most of the students had to stand during instruction due to there being inadequate tables and chairs in the lecture hall. Likewise, it was difficult for *Sekyi* to move around during hands-on activities. The arrangement of desks was such that there was not enough space for him to move around; this, therefore, resulted in him observing only students sitting in the front row, with instructional adjustment or provision of feedback based on data gathered from those students only. Teacher–students' engagement was limited in these teachers' lessons as a result of the large class size. Teacher educators were observed focusing more on the completion of the lesson tasks while paying less attention to individual students' needs.

4.4. Lack of transparency in constructing assessment criteria

For transparency, one needs to ensure that individuals involved in the assessment process clearly understand what is expected. Black and Wiliam [34] argued that FA requires teachers to discuss learning intentions and share criteria for success with the students. The intention of involving students in determining the assessment criteria, according to Reddy and Andrade [35], is to facilitate the formative use of these criteria by students. This means that assessment criteria and standards need to be transparent for both students and the teacher. However, classroom observation revealed that teacher educators made an attempt to inform students about the intentions or goals of assessment. Students did not have any input into the learning intentions. That is, teachers failed to discuss the learning intentions with the students. There was no evidence of teacher educators collaborating with students in developing the standards against which their learning will be assessed. Teacher educators assumed authoritative power by keeping the assessment criteria to themselves. On the other side, Jonsson [36] argued that transparency in assessment is established when students become aware of the assessment intention and assessment criteria. Other studies revealed that collaborative assessment occurs when students and teachers co-create the criteria for assessment [37].

5. DISCUSSION

The purpose of this study was to explore factors which affect teacher educators adoption of FA strategies. From the interview questions on the problems teacher educators faced in formative assessment practices, all the six teacher educators responded that, FA practices are difficult and unmanageable under the teacher college context. Specifically, the study established that factors relating to instructional materials, time and large class size hinders or limit mathematics teacher educators' formative assessment practices. This result give credence to the findings of [16], [34] that shortage of teaching learning materials and time affect

teachers usage of FA in the classroom. Class observation also showed evidence of overfull lecture halls as a result of the number of students registered for the mathematics module. The congested lecture halls posed a challenge to teacher educators in attending to the learning needs of individual students. For instance, the large classes limit MTEs in giving individual feedback. The finding that large class affect effective feedback, and paying attention to individual students learning needs is consistent with research literature [17], [19], [38]. Reviewing from the Izci [17] model one can contend that instructional materials, time and large class size are resource –related factors. Another important finding that emerged as a factor which affect teacher educators FA practices was the Colleges assessment policy. Teacher educators revealed that as a policy they generate a continuous assessment mark of 40% for the affiliate university. As a result, MTEs teach to have their students do well in the external end of semester examination. Teacher educators Classroom activities (assessment practices) were test-driven due to the continuous assessment policy with the intention of maintaining high scores rather than meeting the learning needs of students. This finding resonate with the claims advanced by Bichi and Musa [39] that the present continuous assessment system does not serve formative evaluative purposes, because it is characterized by frequent test-taking. The pressure on teacher educators to produce continuous assessment marks forces them to adopt transmission and testing-driven activities [17].

The finding, lack of transparency of assessment criteria is a serious concern. The evidence of MTEs nontransparent on assessment criteria was grounded in the context of practice and can be argued that mathematics teacher educators continue to hold onto their authoritative role in assessment by keeping assessment criteria to themselves. This finding contradict literature that learning is co-constructed, and therefore requires all participants to have a shared understanding of the assessment goals and standards according to which classroom activities would be assessed [33], [34], [40].

6. CONCLUSION

The current study's findings have implications for higher education. First, the academic board of colleges of education would do well in resolving or minimizing MTEs challenges of formative assessment to facilitate effective mathematics instructional delivery, learning, and assessment. Second, teacher educators assessment practices are critical in the development of preservice mathematics teachers assessment practices when they finally become practitioners at school. More importantly, it is recommend that in planning classroom instruction, teacher educators would involve students in reaching decisions about the learning goals and how their work would be assessed. Once a forum for discussion and communication is established, the issue of lack of transparency in the assessment process will be addressed.

REFERENCES

[1] R. Hernández, "Does continuous assessment in higher education support student learning?," *Higher Education*, vol. 64, no. 4, pp. 489–502, Oct. 2012, doi: 10.1007/s10734-012-9506-7.
[2] P. Broadfoot, *Assessment, Schools and Society*. Routledge, 2012.
[3] C. M. Moss, "Research on Classroom Summative Assessment," in *SAGE Handbook of Research on Classroom Assessment*, 2455 Teller Road, Thousand Oaks California 91320 United States: SAGE Publications, Inc., pp. 235–255.
[4] R. E. Bennett, "Formative assessment: a critical review," *Assessment in Education: Principles, Policy & Practice*, vol. 18, no. 1, pp. 5–25, Feb. 2011, doi: 10.1080/0969594X.2010.513678.
[5] T. N. Ho, "An exploratory investigation of the practice of assessment for learning in Vietnamese higher education: Three case studies of lecturers' practice," Queensland University of Technology, 2015.
[6] A. M. Lau, "Formative good, summative bad?'–A review of the dichotomy in assessment literature.," *Journal of Further and Higher Education*, vol. 40, no. 4, pp. 509–525, Mar. 2016.
[7] S. Leahy, C. Lyon, M. Thompson and D. Wiliam, "Classroom assessment: Minute, minute and day," *Educational Leadership*, vol. 63, no. 3, pp. 18–24, 2005.
[8] A. Remesal, "Primary and secondary teachers' conceptions of assessment: A qualitative study," *Teaching and Teacher Education*, vol. 27, no. 2, pp. 472–482, Feb. 2011, doi: 10.1016/j.tate.2010.09.017.
[9] I. H. J. Decristan, E. Klieme, M. Kunter, J. Hochweber, G. Büttner, B. Fauth, A.L.Hondrich, S. Rieser, S. Hertel, "Embedded formative assessment and classroom process quality: How do they interact in promoting science understanding?," *American Educational Research Journal*, vol. 52, no. 6, pp. 133–159, 2015.
[10] A. Kanjee and J. Mthembu, "Assessment literacy of foundation phase teachers: An exploratory study," *South African Journal of Childhood Education*, vol. 5, no. 1, pp. 142–168, Sep. 2015, doi: 10.4102/sajce.v5i1.354.
[11] J. Enu, "An exploration of mathematics teacher educators understanding and practices of formative assessment: a case of three colleges in Ghana," University of KwaZulu – Natal, 2021.
[12] Y. Ankomah and G. Oduro, "Improving learning through formative assessment: the lecturer's dilemma," *Makerere Journal of Higher Education*, vol. 1, no. 1, pp. 134–142, Sep. 2006, doi: 10.4314/majohe.v1i1.38236.

[13] J. E. J. Young and M. G.-A. Jackman, "Formative assessment in the Grenadian lower secondary school: teachers' perceptions, attitudes and practices," *Assessment in Education: Principles, Policy & Practice*, vol. 21, no. 4, pp. 398–411, Oct. 2014, doi: 10.1080/0969594X.2014.919248.
[14] B. Adamson, "Embedding assessment for learning," in *Assessment Reform in Education*, Dordrecht: Springer Netherlands, 2011, pp. 197–203.
[15] S. K. F. Hui, G. T. L. Brown, and S. W. M. Chan, "Assessment for learning and for accountability in classrooms: The experience of four Hong Kong primary school curriculum leaders," *Asia Pacific Education Review*, vol. 18, no. 1, pp. 41–51, Mar. 2017, doi: 10.1007/s12564-017-9469-6.
[16] G. V Akom, "Using formative assessment despite the constraints of high stakes testing and limited resources: A case study of chemistry teachers in Anglophone Cameroon," Western Michigan University, 2010.
[17] K. Izci, "Internal and external factors affecting teachers' adoption of formative assessment to support learning," *International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, vol. 10, no. 8, pp. 2541–2548, 2016, doi: 10.5281/zenodo.1126103.
[18] J. Jones and M. Webb, "Assessment for learning (AfL) across the school: A case study in whole school capacity building," 2007.
[19] R. Sutton, "Making Formative Assessment the Way the School Does Business: The Impact and Implications of Formative Assessment for Teachers, Students and School Leaders," in *Second International Handbook of Educational Change*, Dordrecht: Springer Netherlands, 2010, pp. 883–899.
[20] N. Husain, "ESL teachers' perceptions and practices on formative assessments in classroom," Universiti Teknologi Malaysia, 2013.
[21] D. Carless, *From Testing to Productive Student Learning*. Routledge, 2012.
[22] D. Clarke and H. Hollingsworth, "Elaborating a model of teacher professional growth," *Teaching and Teacher Education*, vol. 18, no. 8, pp. 947–967, Nov. 2002, doi: 10.1016/S0742-051X(02)00053-7.
[23] T. M. Masole, "Enhancing the quality of performance assessment in agriculture in Botswana," University of Pretoria, 2011.
[24] K. McKinney, *Enhancing learning through the scholarship of teaching and learning: The challenges and joys of juggling*. John Wiley & Sons, 2010.
[25] P. Antoniou and M. James, "Exploring formative assessment in primary school classrooms: Developing a framework of actions and strategies," *Educational Assessment, Evaluation and Accountability*, vol. 26, no. 2, pp. 153–176, May 2014, doi: 10.1007/s11092-013-9188-4.
[26] F. V Mudin, *An Investigation into English Teachers' Understandings and Practices of Formative Assessment in the Malaysian Primary ESL Classroom: Three Case Studies*. University of East Anglia, 2019.
[27] B. Boyle and M. Charles, *Formative assessment for teaching and learning*. SAGE Publications, Inc., 2013.
[28] M. F. Bayissa and C. A. Jote, "Factors Affecting the Implementation of Formative Assessment in Some Selected Primary Schools in Nekemte Town, Oromia Region, Ethiopia," *Annals of Social Sciences & Management Studies*, vol. 4, no. 3, pp. 71–80, Sep. 2019, doi: 10.19080/ASM.2019.04.555637.
[29] J. Schreiber and K. Asner-Self, *Educational research: The interrelationship of questions, sampling, design, and analysis*. Hoboken, NJ : Wiley, 2011.
[30] F. Astin and A. Long, "Characteristics of qualitative research and its application," *British Journal of Cardiac Nursing*, vol. 9, no. 2, pp. 93–98, Feb. 2014, doi: 10.12968/bjca.2014.9.2.93.
[31] NCTM, *Principles to actions: Ensuring Mathematics Success for all*. National Council of Teachers of Mathematics, 2014.
[32] P. Black, C. Harrison, and C. Lee, *Assessment for learning: putting it into practice*. London: McGraw-Hill Education, 2003.
[33] M. A. K. J.G. Figa, W.M.Tarekegne, "The practice of formative assessment in Ethiopian secondary school curriculum implementation: The case of West Arsi Zone Secondary Schools," *Educational Assessment, Evaluation and Accountability*, vol. 25, no. 4, pp. 276–287, 2020.
[34] D. Wiliam and S. Leahy, *Embedding formative assessment*. Hawker Brownlow Education, 2016.
[35] Y. M. Reddy and H. Andrade, "A review of rubric use in higher education," *Assessment & Evaluation in Higher Education*, vol. 35, no. 4, pp. 435–448, Jul. 2010, doi: 10.1080/02602930902862859.
[36] A. Jonsson, "Rubrics as a way of providing transparency in assessment," *Assessment & Evaluation in Higher Education*, vol. 39, no. 7, pp. 840–852, Oct. 2014, doi: 10.1080/02602938.2013.875117.
[37] J. C. Ngwenya, "Formative assessment in accounting: exploring teachers' understanding and practices," University of KwaZulu-Natal, 2012.
[38] N. L. Webb, "Issues Related to Judging the Alignment of Curriculum Standards and Assessments," *Applied Measurement in Education*, vol. 20, no. 1, pp. 7–25, Jan. 2007, doi: 10.1080/08957340709336728.
[39] A. A. Bichi and A. Musa, "Assessing the correlation between continuous assessment and examination scores of education courses," *American International Journal of Research in Humanities, Arts and Social Sciences*, vol. 10, no. 3, pp. 290–294, 2015.
[40] M. Heritage, "Knowing what to do next: the hard part of formative assessment?," *CADMO*, no. 1, pp. 67–84, Jun. 2011, doi: 10.3280/CAD2011-001009.