A systematic review on the formative assessment practice in teaching and learning in secondary school

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Article Info	ABSTRACT
	Formative assessment is an assessment that is conducted throughout the teaching and learning process. Therefore, teachers should play an important role in mastering the appropriate approaches to practicing formative assessment. According to previous studies, some teachers are unable to comprehend the roles of formative assessment practices in teaching and learning, which prevents them from using them effectively in the classroom. Many researchers have conducted research related to the practice of formative assessment in schools due to this issue. Therefore, this article aims to conduct a systematic literature review (SLR) on past studies related to the practice of formative assessment in teaching and learning in secondary schools. This SLR writing process has been referred to as the Preferred Reporting Items for systematic review and meta-analysis (PRISMA) writing standard. To find related articles and resources in this systematic literature review, two main databases, namely Web of Science and Scopus, were used. A total of 19 articles were extracted from 366 from 2017 to 2021, with exceptions and inclusion criteria considered. Based on the theme analysis, this SLR has three main themes: assessment diversity; assessment strategies, and student learning development. Thus, this study suggests that all compulsory levels of education understand formative assessment conceptually and its implementation comprehensively. This can be disseminated through teacher professional development training programs. It is hoped that such programs will develop teachers who are committed to integrating the concept and practice of assessment for the benefit of students in twenty-first century education.

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1. INTRODUCTION

Formative assessment plays a role as a teaching and learning process that is carried out to evaluate and improve student learning development continuously in the classroom [1]–[3]. In line with the assessment system of the 21st century, formative assessment is given more emphasis in the global education system as a transformation to the current quality of education [4]. Therefore, formative assessment is one of the strategies to assess students that should be empowered to help teachers identify the individual development of students through activities that will be planned with the aim of improving the teaching process [5]. In order to achieve success in the formative assessment process, [6] stated that the strategy to be carried out should take place with the integration of the roles of teachers, students, and peers to make learning more meaningful.

However, previous studies have reported that some teachers are still lacking in understanding the concept of the role of formative assessment that should be practiced in teaching [7], [8]. In addition, another problem is the attitude of some teachers, who focus more on student achievement through exam orientation [9]. The focus is more on cognitive achievement, such as emphasizing recall questions and factual questions only [10], [11]. Researchers [12], [13] also reported that the assessment practices of a few teachers are still weak, in the form of traditional and summative assessments. As a result, individual student development cannot be measured holistically, and the goal of formative assessment cannot be achieved even though it has been outlined in the standard curriculum [14]. Teachers should continue to be given a comprehensive understanding of the formative assessment practices that should be carried out. Therefore, this study intends to gather a systematic literature review (SLR) on the practice of formative assessment conducted in the classroom.

This is because previous studies in the form of a SLR are still limited. A study by Yan *et al.* [15] identified factors that support or hinder teachers' beliefs and implementation related to formative assessment. This is to contribute to the understanding of the construct so that it can be refined to make the implementation of formative assessment a success. Meanwhile, Schildkamp *et al.* [16] have also conducted a study on the prerequisites for teachers to practice formative assessment to improve student learning. A previous study [16] is seen as similar to that of Heitink *et al.* [17], who also identified aspects of teachers' prerequisites in carrying out assessment. On the other hand, Heitink *et al.* [17] specialized in four prerequisites, which are teachers, students, assessment, and context, as a requirement to be considered as a prerequisite for implementing assessment for learning (AfL). Hartmeyer *et al.* [18] has conducted a study specializing in science subjects based on concept mapping. In their study, formative assessment strategies are taken into account with concept mapping in science subjects as a necessity for science subject teachers. Therefore, some of the previous studies that have been highlighted have focused on factors that support or hinder being followed up as a prerequisite for teachers in implementing formative assessment. Yan *et al.* [15] explained in their study that the study should be expanded from the perspective of context, i.e., teacher practice, and ii. the scope of the school so that the assessment practices used can be thoroughly examined. In addition, Schildkamp *et al.* [16] emphasized that student participation in the formative assessment process is another context that also needs to be discussed.

This study aims to systematically examine the literature review to identify formative assessment practices implemented in teaching and learning at the secondary school level by focusing on the gap between context and practice. In addition, this study will discuss the practice of formative assessment, including three implementing agents, namely teachers, students, and peers based on the sources of the field of assessment, namely Black and William's formative assessment model [19], which consists of: objective sharing, teacher and student feedback practice, questioning, self-assessment, and peer assessment. Therefore, this study will be guided by one main research question: how are formative assessment practices practiced in teaching and learning in secondary schools?

2. RESEARCH METHOD

The authors have referred to preferred reporting items for systematic review and meta-analysis (PRISMA) to analyze the collected journal articles. There are four steps in PRISMA, which include identification, screening, eligibility, and inclusion. The PRISMA method is still suitable for reference even though it is a standard publication that is widely used in the fields of medicine and public health. PRISMA also has 27 items that can be followed in the SLR formation process [20]. With PRISMA, it can help the authors form a clear research question, and a systematic search can be done. In addition, PRISMA is able to minimize various types of bias as well as help the authors synthesize the study well [21].

2.1. Identification

Identification is a process to identify and diversify the appropriate keywords to use in the article/reference search process for SLRs. Keywords are required in the search process, and they can increase the accuracy of the article obtained for reference in the SLR. Based on the research questions mentioned earlier, four main keywords were selected: formative assessment, practice, teachers, and secondary school. To diversify the keywords that can be used, synonyms, related words, and variations on the main keywords were searched. This search effort was conducted through an online thesaurus, referring to past research keywords and the Scopus database as well as obtaining expert views. The results of this identification process can be found in Table 1.

Based on the keywords that have been selected, the article search process has been done in two main databases, namely the Web of Science and Scopus. All these databases were selected based on some of the advantages they possessed. First, according to a study by Gusenbauer and Haddaway [22], databases such as

Web of Science, Scopus, and Science Direct have strengths in terms of comprehensive search, more stable search results, and more advanced search functionality than other databases. Previous researchers [23] emphasized the advantages of Web of Science and Scopus in terms of quality control as well as a systematic indexing system.

The search technique used to find articles in this database (Web of Science and Scopus) is advanced searching, which uses basic functions such as the Boolean operator (AND, OR), phrase searching, truncation, wild card, and field code's function (Table 1). Based on the keywords, database, and search techniques used, a total of 238 Scopus and 128 Web of Science articles were successfully obtained, and all these articles will go through the second stage of the systematic search strategy, which is screening.

Table 1. Search string formed for the purpose of article search/database reference

	Database search string
Web of Sciences (WoS) (n=128)	TS = (("classroom assessment" OR "formative assessment" OR "assessment for learning") AND ("practice*" OR "implement*") AND ("teacher" OR "educator") AND ("secondary school" OR "high school "))
Scopus (n=238)	TITLE-ABS-KEY (("classroom assessment" OR "formative assessment" OR "assessment for learning") AND ("practice*" OR "implement*") AND ("teacher" OR "educator") AND ("secondary school" OR "high school "))

2.2. Screening

Screening is a process where you need to set inclusion and exclusion criteria that can be used to select articles and references appropriate to the SLR [24]. A total of 366 articles that were successfully obtained in the identification process will go through the screening process. The first criterion used in this SLR is the year of publication, where publications from the last five years (2017 to 2021) have been selected. The selection of this period is based on several justifications. First, it is in line with the concept of study maturity discussed [25], where during this period, many related articles have been successfully obtained. Furthermore, to control the quality, this SLR only selects publications in the form of journal articles, and to avoid confusion in reading and comprehension, only articles published in English are selected. Next, only articles with relevant empirical data can be included in the SLR. This means articles in the form of reviews cannot be included because the main objective of this SLR is to know and identify the findings of past studies, not reviews of past studies.

Another inclusion criterion used is the focus of findings. Selected articles should have findings that focus on assessment practices in teaching and learning in secondary schools. If any article states that the study examines teacher assessment practices or strategies in specific subject syllabuses, such as assessment according to the chemistry education framework, then the article will be removed. This is important to enable all selected articles to offer findings relevant to the SLR to be designed (refer to Table 2). After conducting the screening process, a total of 252 articles were removed for not meeting the set criteria, and this made the remaining 95 articles available for the next process.

Table 2. Inclusion criteria used

	Inclusion criteria
Year of publication	Five years (2017 to 2021)
Publication type	Journal articles
Language type	English
Types of findings	Empirically shaped
Findings focus	Data related to classroom assessment practices or formative assessment or AfL in secondary schools.

2.3. Eligibility

All selected articles will go through a second screening process known as eligibility. Eligibility is done to ensure that all selected articles are truly relevant and can be used in this SLR. This process is done by referring to the title of the article and the selected abstract. If a decision on whether the selected article is relevant or not still cannot be reached after reading the title and abstract of the study, then the methodology, results, and discussion sections of the article will be referred to. In this process, a total of 76 articles were removed due to a non-directed focus on classroom or formative assessment practices or AfL, giving special focus to the folio assessment framework of specific subjects, duplicated records, articles that did not have full access (were not fully accessible), as well as articles in the form of scoping reviews. Based on this process, 19 articles were selected to go through the next process, which is quality assessment. The systematic search process using PRISMA can be found in Figure 1.

2.4. Articles included

The articles selected for this systematic highlight revolve around the practice of formative assessment, or AfL, in teaching in secondary schools. The accompanying studies are shown in Table 3. Based on Table 3, 19 articles were selected from the Scopus and Web of Science databases. These databases were selected with reference to the quality of articles, particularly in the field of education. The purpose of the study is all related to the practice of formative assessment, AfL, classroom assessment, and the context of teaching and learning in secondary schools.
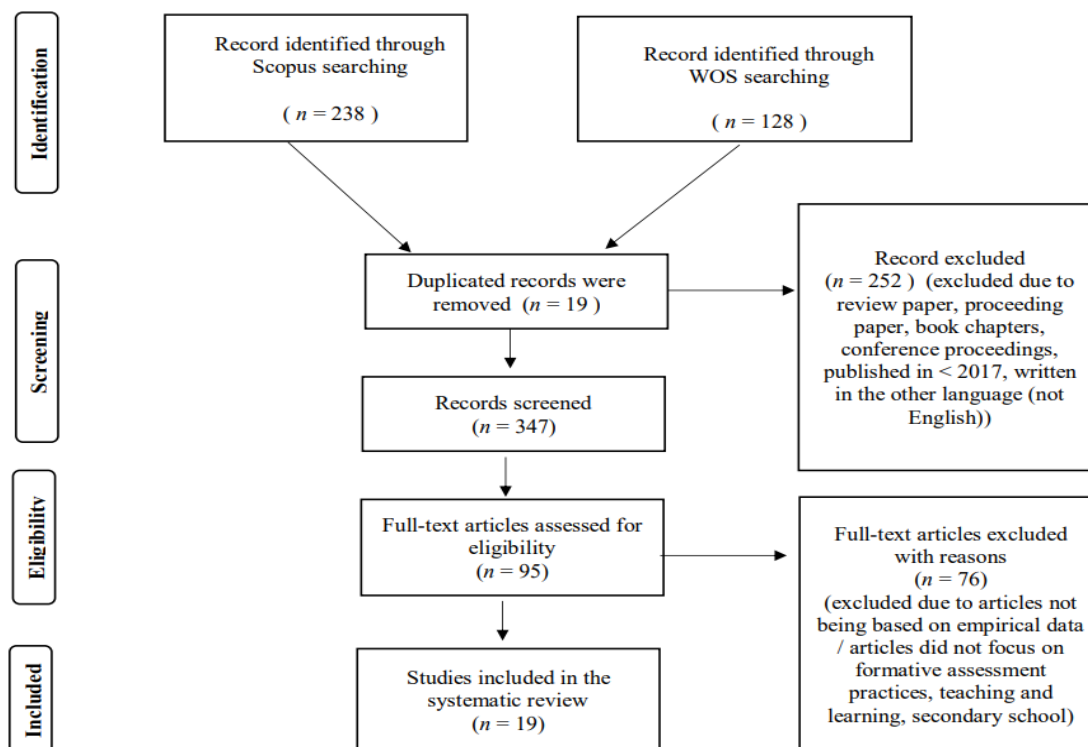
Figure 1. Flow diagram of systematic review process

2.5. Data extraction and analysis

Next, the process of extracting data from articles that had been determined to be of high quality was implemented. This process was performed by two researchers. The focus of this SLR is to review findings from previous research on formative assessment practices in teaching and learning in schools. The data extraction process is focused on three main sections of each article: the abstract, results, and discussion. If necessary, other sections of the article, which offer relevant data, will be read. The extracted data are then placed in tables to facilitate the analysis process.

In this study, to develop an appropriate theme, the extracted findings were examined. Data with similarities or correlations is combined into one data set. The set has been given an appropriate theme. Three themes emerge from this process, namely: i) assessment diversity; ii) assessment strategies; and iii) student learning development. Then, the findings from each of these themes were re-examined to form subthemes. Through this process, subthemes have been identified under the theme of assessment diversity, namely: i) teacher assessment; ii) peer-assessment; and iii) self-assessment. For the second theme, which is assessment strategy, there are three subthemes, namely: i) assessment activities; ii) grading/assessment instruments; and iii) teacher planning. Meanwhile, the subthemes identified for the theme of student learning development, namely: i) student learning achievement and ii) social development. All themes and subthemes were reviewed and retained as they are related to the research question. Of these 19 articles, it was also found that previous studies used various methods in conducting research on formative assessment practices in the classroom in secondary schools. A total of 8 articles use fully qualitative methods [26]–[33], 7 articles use a mixed method [34]–[40] and a total of 4 articles use quantitative methods [41]–[44].

Table 3. Summary of findings for the 19 selected SLR articles

Study	Method/sample	Findings
[26]	Semi-structured interviews/grade 8 English teachers and head teachers.	The study found that each teacher had a different strategy for assigning student achievement levels while implementing school-based assessments due to differences in their understanding of SBA in the classroom.
[27]	Semi-structured interviews, unstructured observations, and document analysis /2 Spanish teachers in primary schools, 2 secondary school teachers, and 3 university teachers.	The study found that formative assessment during teacher education can improve teaching competencies if it is implemented with clear criteria known to students, information collected throughout the training period, correct feedback on student performance, and encouragement of student participation.
[28]	Semi-structured interviews/ 6 participants consisted of EFL teachers.	The study indicated that instructors' classroom assessment understanding falls into three categories: student conduct, teacher-centered assessment, and student responsibility. The data also reveal that teachers monitor and influence students' classroom attitudes with assessment activities.
[29]	Assessment tasks, teacher interviews, reflections, and student responses/5 high school chemistry teachers.	Findings indicate that teacher assessment is in line with five informative research principles for effective assessment and helping teachers achieve student aspirations.
[30]	Questionnaire instruments, interviews, teaching observations, and document analysis/ interviews-secondary school principals and teacher coordinators.	The study found that secondary school teachers presented learning objectives to students. Teachers sometimes integrate the formative assessment strategies, provided formative feedback, with a wide variety of practice.
[31]	Collective case study/Observations on 6 teachers, 3 mathematics teachers, and 3 English literature teachers.	The findings show how complex interactions between formative assessment practices can help or hinder an integrated approach and suggest classroom observation as a way to identify challenges and inform professional development quickly.
[32]	Case study/2 physics teachers: one novice and one experienced.	These findings suggest that teachers can use learning progress to analyze student replies, infer student understanding, and alter teaching. Adjusting learning objectives and activities are interdependent, as shown in this study.
[33]	The design of pre-test-post of one group/7 teachers in two high schools on the border of a large city in the Western United States.	The findings indicate that teachers are able to support students' learning about the learning content as represented in most learning progressions. Results are interpreted based on the development of learning used as a pathway for designing and practicing formative assessment.
[34]	Quantitative study/56 teachers and 234 students from 3 upper secondary schools in Iceland.	The findings of the study in general show differences in the perceptions of teachers and students on aspects of students' participation, use of feedback, quality of feedback, self-assessment, and self-efficacy.
[35]	Achievement test and attitude inventory, interview instrument, observation inventory/45 fifth grade secondary school students/teachers.	The findings of the study found that the practice of formative assessment of students' academic performance, learning attitudes are positive.
[36]	Questionnaires and interviews/teachers.	The study identified moderate correlations between teacher teaching standards, classroom assessment priorities, and test-driven system beliefs. Interview data shows why instructors' coherent assessment system ideas are right or wrong.
[37]	Explanatory sequential mixed-method design/questionnaire-737 Japanese junior and senior high (JSH) schools, interviews and observation -4 teachers.	The results showed varying levels of FA used among teachers, indicating that the four FA variables (intention, method, purpose, and feedback) obtained from William's model were successfully identified by different degrees of FA use.
[38]	Mixed method/Observations and interviews-teachers. Questionnaire-12 students.	The findings indicate that teachers' formative assessment practices focus on gathering information about students' knowledge and skills, and later use this information to make decisions about further instructions.
[39]	Mixed method/2,767 level 3 students/review. Six focused discussion groups (FGD)–six students.	The survey found that students' perceptions of teachers' feedback delivery and scaffolding predicted positive feedback usage, but perception monitoring predicted negative feedback use. The focus group content analysis showed that most students liked their math professors' assessments and comments.
[40]	Pre- and post-test.	The results of the study found that a teacher-centered teaching style and traditional assessment did not have a significant effect on the development of inquiry skills.
[41]	Case study/5 Dutch teachers/a technology support officer information (IT), and 47 Grade 7 students from a secondary school.	The study indicated that teachers choose data with student, task, and response details. Teachers provide low-performing students with comments from themselves or high-performing peers in the classroom.
[42]	Qualitative study/15 middle and high-level Science teachers in secondary schools	The results indicate different levels of implementation across assessment practices. The findings reveal 2 types of prototype lessons that do not fully reflect a more responsive approach to teaching EL.
[43]	Explanatory sequential mixed methods design/ 66 senior EFL teachers-six schools in East China.	Quantitative data show that teachers strongly agree that assessment has five mutually connected factors. Qualitative data also showed that some study participants saw the exam as a way to evaluate students and help them grow.
[44]	Survey study/229 teachers from 9 secondary schools in Singapore.	The study found that teachers agreed that assessment plays a role in improving student accountability and school accountability.

3.   RESULTS AND DISCUSSION

The selected articles were searched through the Scopus and Web of Sciences databases. There were 19 articles found in this study. These articles were selected between 2017 to 2021. Of the 19 articles selected, 5 were published in 2021, 3 were published in 2020, 2 were published in 2019, 5 were published in 2018, and 4 more articles were published in 2017. In addition, a total of 15 countries were involved in the study, namely Bangladesh, Spain, Indonesia, Turkey, Ethiopia, the United States, China, Greensboro, Iceland, Japan, Sweden, Tanzania, Slovakia, the Netherlands, and Singapore. The United States conducted the most studies with 3 studies, China and Turkey with 2 studies, and other countries with 1 study. Past studies on assessment practices among teachers have also been conducted on teachers who teach the subjects of English, Physical Education, English as a foreign language (EFL), Chemistry, Physics, Biology, Sociology, Science and Mathematics. To identify themes and subthemes, thematic analysis was used in this study. The themes and subthemes in this study were formed by examining the findings of each of the 19 carefully selected articles. Any major categories or ideas that have similarities will be grouped under one subtheme. The subthemes that have been developed will be combined under one appropriate theme. Thus, through this process, three themes were identified, namely: i) assessment diversity; ii) assessment strategies; and iii) student learning development. Of these three themes, there are specific subthemes that will be explained in detail in this study.

3.1.   Assessment diversity

The first theme is the diversity of assessments. The three subthemes under this first theme, namely: i) teacher assessment; ii) peer-assessment; and iii) self-assessment. The diversity of assessment in the classroom suggests that AfL involves three agent roles: teacher, student, and peer. In general, teachers play a role as educators and assessors in teaching to encourage the development of student learning with the support of student and peer involvement in the classroom [27], [29], [32], [35]. Table 4 describes the practice of formative assessment by teachers, peers, and students.

Table 4. First theme: assessment diversity

Subtheme	Description
Teacher assessment	Convey and explain learning objectives: − Teacher records the objectives and lists the activities that support the achievement of those objectives [27], [30], [32], [42]. − Teachers explain the criteria of learning in the context from the beginning to the teaching part [27].
Peer-assessment	Feedback: − Correct and accurate feedback [27], [43] formative feedback [30], [35] positive feedback [40], [43] and verbal feedback [43]. − Feedback methods consist of tailoring feedback as well as providing feedback [38] and delivery of feedback [39]. − Teachers conduct assessments by providing feedback to low-achieving students [41]. − Teachers questioning practices were also practiced as a measure to assess their students. Follow-up action on teacher feedback was also implemented by teachers [27]. Group work activities: − The peers play a role by helping each other to complete the group assignments given by the teacher [27], [29], [35], [41]. − Peers help each other understand the task [29]. − High-achieving students help each other with their low-performing peers with activities planned with the teacher [41].
Self-assessment	A test question instrument, where the students can self-assess each concept, they learned [34], [35], [38].

3.2.   Assessment strategy

The second theme is assessment strategy. The subthemes for the assessment strategy theme are teacher planning, assessment methods, and instruments and grading. The details of past studies on the theme of assessment strategies can be summarized based on the Table 5.

Various assessment methods should be carried out by teachers to achieve learning objectives that can celebrate the potential of each individual student. According to a study [26], the relaxed approach is one of the assessment approaches carried out by teachers when conducting assessments without being fully guided by their teaching guidance. This leads to a variety of methods used by teachers to assign assessment marks to each individual non-standard student. Quizzes, for example, are designed to elicit students' understanding of a single topic studied [29]. In addition, teachers also encourage the active participation of students in the classroom [27], [42]. When teachers give assignments, the role of teachers can be seen by providing appropriate help, encouragement, and instruction as one of the assessment strategies practiced [29], [38], [40]. There are teachers who reward students for their success in completing assigned tasks [35]. Even

with the practice of assessment, teachers will strive to make teaching adjustments in the next teaching session. This aspect is said to be a holistic assessment process [31].

Table 5. Second theme: assessment strategy

Subtheme	Description
Teacher planning	– Teachers will collect student information first before planning their lessons [27], [38].
	– Teachers will gather information and interpret the information [38].
	– Teachers make a decision on the planning of teaching activities [38].
	– Teachers will select data with detailed information about each student covering their assignments and responses [41].
	– Teachers will strive to understand four aspects, namely introduction, implementation, global understanding, and the overall form of teaching that needs to be implemented [42].
Assessment methods	– Conducting tests, assignments, group work, homework, oral presentation, quizzes [26], [29], [35].
	– Form of questions constructed by the teacher are through scenarios that students have experienced in their daily lives [29].
	– Teachers also apply high-level thinking questions in conducting classroom assessments [35].
	– Teachers always dig out and integrate students' ideas obtained through assessment activities [32].
	– The idea of the students, teachers will repeatedly conduct research, design learning development practices, and integrate those with formative assessment activities [30].
	– Teachers will strive to make teaching adjustments in the next teaching session [32].
	– Assessing students through observation, monitoring, and control of students' attitudes in teaching and learning sessions [28].
	– The aspect of language consideration is also given attention by teachers as a mechanism for launching assessment activities [42].
	– At the end of the learning session, teachers were found to share learning outcomes, hold teacher-student discussions, and report the success criteria obtained in the teaching and learning sessions [35]
Instruments and grading	– Teachers conduct examinations through an instrument that is a test question [26]–[28], which are then recorded into a mark sheet provided [28].
	– Using various instruments such as portfolios, rubrics, notebooks, and worksheets [26]–[28].
	– Observation sheets are also used as instruments in assessing students to smooth the assessment practices through recorded observation methods [27], [28], [37].

3.3. Student learning development

The third theme in this study is student learning development. Subthemes consist of student learning achievement and social development. Formative assessment is also known as continuous assessment. Therefore, this feature of formative assessment is seen as being able to develop and improve student achievement in terms of knowledge and even skills and attitudes. This can be proven by several previous studies, as shown in Table 6.

Table 6. Third theme: student learning development

Subtheme	Description
Student learning achievement	An understanding of concepts can be achieved and leads to an increase in the level of student learning [35], [38]
	Through the assessment conducted, it can further improve students' inquiry skills and later lead to a correct understanding of concepts [40].
	Low-achieving students appreciate the opportunities provided by teachers to practice with instruction received in the classroom [41].
	Being able to stimulate their motivation to continue learning [43].
	Students are seen to be more responsible for their learning, increase confidence, be independent [40], be responsible, and be disciplined [28].
Social development	Active in learning and willing to provide cooperation while having positive communication [35], [40].

3.4. Discussion

A systematic literature review of the findings of previous studies on the practice of formative assessment in secondary schools shows that the goals and activities of teaching and assessment are being implemented holistically. This encompasses the three roles of agents optimally: teachers, students, and peers in teaching and learning sessions. The three roles of these agents are detailed as teacher assessment, student assessment, and peer assessment. In fact, this diversity of assessments helps produce successful students not only from the aspect of academic achievement but also from the aspect of student self-development. Students' self-learning can be developed with teachers planning a variety of activities that can meet the learning needs of students as a result of the information that has been collected [19], [45]. From the studies on this formative practice in teaching and learning in secondary school, there are four types of assessment

practices that can be discussed: i) remedial activities (interventions); ii) meaningful learning; iii) exit (exit ticket); and iv) student learning development.

The first element is the existence of remedial activities (interventions). For example, students with low performance will be assisted by teachers and peers [32]. In conducting assessments, teachers will help low-achieving students by providing appropriate feedback, while the role of high-achieving peers is to help their peers with activities planned with the teacher. Therefore, this activity is a remedial activity (interventions) that can improve students' learning [46]. Therefore, teachers will plan a variety of activities that can meet the learning needs of students with improvements in teaching as a result of the information that has been collected.

The second element, meaningful learning, can be realized when strategies, methods, and activities in the implementation of assessment are developed with the integration of roles between teachers, students, and peers. Meaningful learning occurs when students actively participate in their learning while the teacher serves as a mentor. This is in line with several studies [29], [38], [40] who found that teachers act as helpers, promoters, and producers of appropriate instruction. This can be reinforced through a study by Lyon *et al.* [31], who found that teachers play a role in extracting and integrating students' opinions through assessment activities such as assignments in the form of application questions [29] or high-level questions [35]. Apart from that, providing reminders and immediate feedback for students to correct mistakes is part of a meaningful learning process. Meaningful learning can also be derived from peer assessment by providing an understanding of assignments to fellow students in group work [29]. Accordingly, active knowledge can be built into teaching as meaningful learning based on the constructivist approach [47], [48]. This is also similar to Wiliam and Thompson [6], who presented that formative assessment can be conceptualized in terms of the main strategies, such as activating students as a source of teaching to each other and making students more autonomous in their learning.

The third element is the existence of an exit ticket in the practice of formative assessment. This can be highlighted in this study because teachers were found at the initial stage of lesson planning and will collect students' information in making a decision to plan teaching activities [38]. Thus, these findings are in line with previous study [49], who explained that with formative assessment, it is a way for teachers to try to understand students' existing knowledge of a topic. In addition, teacher's students collaborate in a variety of activities carried out in formative assessment so as to stimulate student interaction. In this way, students in need of support can be better identified, enabling teachers to make improvements to students' understanding of concepts as well as provide support, with explanations, to peers in the group.

Meanwhile, the fourth element is through formative assessment, which will develop students' self-achievement through the practice of assessment that is comprehensively implemented. Students have been found to be more positive in assessing, to be able to stimulate their motivation to learn, to make students more responsible for learning, to increase self-confidence, to be independent, disciplined, active in learning, and to be willing to provide positive cooperation and communication [28], [32], [35], [40], [43], [44]. In this regard, formative assessment affects the self-development of students by not only measuring the academic achievement of students alone but also nurturing their skills and social aspects.

Therefore, as a whole, this study is able to highlight the fundamental aspects that occur in the current assessment that are in line with the learning of the 21st century. This is because the basic aspects of learning goals, teaching activities, and assessment activities should be understood correctly. This is seen in line with the guidelines established by Brookhart [50], which elaborate on these three stated elements in one form of the basic model of teaching and assessment with relevance to each other as a whole. In addition, the findings of this study indicate that the principles of AfL are implemented in classroom teaching. In other words, the principles of this assessment, which serve as a foundation for formative practice in the classroom, are the sharing of learning objectives or goals, the practice of teacher and student feedback, questioning activities, self-assessment, and peer assessment. Indirectly, this discussion can guide teachers to implement formative assessment in a more planned and comprehensive manner aimed at achieving ideal teaching and learning goals based on the individual potential of students.

The results of the discussion in this article are also expected to be utilized by future researchers, teachers, school leaders, and policy makers in deepening the practice and role of formative assessment when conducted in a planned manner through the efforts of teachers, students, and peers in the classroom. These benefits can be disseminated through integrated programs or specialized professional development training in prescribed educational assessments. When various parties in educational institutions consider this issue, there will be a better understanding of formative assessment as a whole, indirectly raising the quality of teacher teaching practice and student learning development. In this regard, this article is expected to continue to provide empirical knowledge and understanding [51] of practicing assessment, which can be integrated with teaching through the review of this systematic literature.

4. CONCLUSION

In conclusion, this systematic literature review highlights the practice and role of formative assessment resulting from the implementation of teaching and assessment conducted by teachers, students, and peers in the classroom. This can be seen through the themes obtained, namely the diversity of assessment, assessment strategies, and student learning development. The discussion of the findings in this study also highlights aspects such as the existence of remedial activities in the assessment conducted, meaningful learning, the existence of an exit ticket in formative assessment, and developing students' self-achievement. With the use of this systematic literature, it can produce a comprehensive view of the practice and the role of formative assessment implementation agents in the classroom.

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