

The Role of Senior Leader Team on The Formative Assessment Practices among Primary School Teachers in Petaling

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Abstract

Formative assessment has become a most discussed topic when many countries recognized the importance of assessment for learning in enhancing students' holistic development. Most of the times, teachers are not quite clear with the differences between assessment of learning and assessment for learning. In Malaysia, teachers still feel uncomfortable with the implementation of formative assessment compared to summative assessment due to the heavy workload to prepare the tests by themselves. Hence, this study was conducted to examine the role of leaders and how the leader's role was associated with teachers' formative assessment practices in schools. An online questionnaire was administered to a total of 198 randomly selected teachers from 25 public primary schools in Petaling. A descriptive correlational research design was employed to identify the relationship between these two variables. The findings indicated that there was a moderately strong linear relationship between the role of the leaders and teachers' formative assessment practices in schools. The study also revealed that the role of leaders has significantly predicted the teachers' formative assessment practices with 20.4% of contribution. The findings showed that teachers' practices in formative assessment process still far from much desired, and leaders still need to further enhance their implementation of formative assessment in school. Overall, this study has its contribution for the enrichment of the body of knowledge of formative assessment and provided insights for the improvement of the implementation of formative assessment in schools.

Keywords: *Role of Leaders, Formative Assessment Practices, Teachers, Assessment for Learning*

INTRODUCTION

Formative assessment has become a hot topic in schools when Finland recognised the effectiveness of assessment for learning for students' holistic development. However, in Malaysia, teachers still feel uncomfortable with the implementation of formative assessment compared to summative assessment due to the heavy workload and heavy time consumption to prepare the tests. The process of providing feedback and guidance in formative assessment requires a lot of time and effort (Abiog, 2022). Although formative assessment is a significantly effective instructional practice to enhance the intended learning outcomes for students learning (Hattie, 2012), however, most of the teachers are still not so competent in conducting formative assessment (Duckor et al., 2017).

In fact, the teacher's determination to make a change will be the key factor to ensure the success of the school's formative assessment. Kenyon (2019) found out that teachers' utilisation of formative assessments at this stage is still not satisfactory (Wylie & Lyon, 2016) to achieve the learning goals in the classroom (Earl, 2013). Similarly, some previous studies have also showed that formative assessment was not used or was only casually used in most classrooms (Popham, 2014). Although the Ministry of Education, Malaysia has improvised the implementation of the school-based assessment (SBA) in public schools, the process still needs more consideration and improvement, especially on

the teacher's knowledge and practices. Furthermore, formative assessment process is often misunderstood and inconsistently defined among the educators, thus, this has contributed to some confusion on formative assessment practices in the classroom (Kenyon, 2019; Havnes et al., 2012). These kinds of misinterpretations and misunderstanding of teachers on the implementation of formative assessment will definitely have impact on the achievement of the learning objectives in the classroom (Bonner, 2012).

Undeniably, the role of leaders in schools will determine the teacher's job performance to enhance students' achievement. For schools to succeed academically, leaders need to act as instructional leaders and guide teachers through the teaching and learning process, especially in the formative assessment practices in the classroom. Senior Leaders such as the headmaster or principal, senior assistants and panel heads should establish a clear understanding of teachers' formative assessment practices and provide the needed support to teachers (Kenyon, 2019). To date, formative assessment practices are still considered as a new approach for many teachers even though its implementation has started in the late 1990's. Hence, in order to be benefited from these processes, leaders and teachers need to have good understanding of assessment types, steps to evaluate assessment results, and the use of the assessment strategies as an integral part of the classroom instruction (Privette, 2015).

Several issues have arisen based on the role of the Senior Leader Team (SLT) to act as the coach for teachers in the aspects of teaching and learning in school. The role of leaders in schools will determine the teacher's job performance to enhance students' achievement. Formerly, a school leader is defined as a manager or director in giving instructions and orders to teachers instead of guiding them. For schools to succeed academically, leaders need to transform as instructional leaders and guide teachers through the teaching and learning and formative assessment practices in the classroom (Wei et al., 2022). Leaders should establish a clear understanding of teachers' formative assessment practices to provide the needed support to teachers (Kenyon, 2019). In school, the efficacy of formative assessment implementation depends on the teachers' understanding and practices in conjunction with leaders that support and motivate them. The role of the Senior Leader Team (SLT) in school has increased significantly under the teachers' professional development, which is parallel with the evolution of our education system.

Kenyon (2019) explained the importance of a leader's role to support teachers in implementing formative assessment in the classroom to fully develop a strong understanding of the embedded assessment. Most teachers misunderstand and are unaware of the embedded process of formative assessment implementation in the classroom and the significant role of the leader to ensure successful implementation of the process. Obviously, both teachers and leaders have to embrace a collaborative culture that includes a mutual vision and goals, values, and practise collective inquiry, and action orientation for continuous improvement of students' achievement in school (Erkens & Jakicic, 2006). Hence, the Senior Leader Team should act as the role model for teachers to practise formative assessment in the classroom. On that note, Waters, Marzano, & McNulty (2003) stressed that principals and headmasters must adopt essential practices of assessment to ensure effective instructional leadership among teachers to achieve higher quality classroom assessment practices. In addition, Waters et al. (2003) have also pointed out that both the leader's role and teachers' assessment practices are associated with student achievement but not many studies have been conducted. Based on the issues raised above, this study is intended to achieve the following research objectives:

1. What is the level of the formative assessment practices as perceived by primary school teachers?
2. What are the roles of the senior leader team in the implementation of formative assessment as perceived by primary schools' teachers?
3. Is there any significant difference in formative assessment practices between male and female teachers in primary schools?
4. Is there a significant relationship between the role of the senior school leader team and implementation of formative assessment practices as perceived by primary school teachers?
5. What are the various factors that influence the formative assessment practices among primary school teachers?

LITERATURE REVIEW

1. Formative Assessment Practices

Theories concerning formative assessment concepts and practices which began at the end of the 1990s have put emphasis on the basic foundation of learning through the use of feedback and learning adjustment. Black and William (1998b) argued that knowledge on students' learning will increase with the continuous classroom assessments processes of providing feedback, and making teaching adjustments. Formative assessment provides information on students' progress in the teaching and learning process towards achieving the intended learning outcomes (Kenyon, 2019; Black & William, 2009). Kenyon (2019) described the interaction between teachers and students in classroom, specifically in the formative assessment practices, as being similar to the check-and-balance of the quality of instructions and set of activities in the classroom. In other words, formative assessment is recognized as a sequence of activities that promotes positive and constant interactions between teachers and students. Thus, formative assessment practices have significantly led instructors in the decision-making process of students' learning (Oneal-self, 2015; Cornelius, 2013) and developed the necessary skills in making adjustments to learn through focusing on students' progress in the classroom (Oneal-self, 2015; Sadler, 1989). Thus, in formative assessment, teachers supposed to help students to make progress by determining the learning parts that require more attention (Oneal-self, 2015; Gronlund & Waugh, 2009). Therefore, effective implementation of formative assessment will significantly improve teachers' instructions to help students achieve the intended learning goals.

2. Dimension of Formative Assessment Practices

According to Kenyon (2019), the complexity of the formative assessment process has guided researchers to redefine and clarify the main characteristics that are well suited to the process of implementing formative assessment that is helpful in the development of critical aspects in the practices. Kenyon (2019), based on a previous study, listed four main characteristics of formative assessments namely the regular assessing of and checking for students' understanding in the learning process (Stiggins & Dufour, 2009), monitoring of students' learning during instructional process (Chappuis & Stiggins, 2002), managing effective feedback, and modifying instructions in the next lesson for students' improvement. In summary, the process of formative assessment involves a set of classroom tasks, planned or unplanned, during the learning process to frequently provide feedback and to identify gaps in students' learning in order to decide on instructional adjustments required for the improvement of students' achievements (Chappuis, 2022; Kenyon, 2019; Clark et al., 2012; Stiggins & Dufour, 2009; Black & Wiliam, 1998b). Based on several definitions of strategies and processes by previous scholars, Kenyon (2019) categorized formative assessment practices into four categories that starts from setting the learning targets for students' learning, implementing formative assessment during instructions, managing students' feedback, and adjusting instructions for improvement. In addition, this embedded assessment process throughout the students' learning consists of set of activities as shown in Table 1.

Table 1 Specification of formative assessment processes

Formative Assessment Process	Examples of Activities
Setting a Clear Learning Target	Planning a lesson activity based on learning target.
Implementing Formative Assessment (Embedded)	1. Assisting students learning and collecting evidence based on students work/learning product. 2. Checking for students understanding (Task/Questions) in concepts and learning throughout the lesson.
Managing Students' Feedback	1. Collecting feedback on students work / answer for corrections throughout the lesson. 2. Encourage student's self-assessment and peer-assessment evaluation.
Adjusting Instruction for Improvement	1. Rechecking for students understanding to justify for retaught or reteach the concept. 2. Evaluate and decide for future planning in next lesson based on data of assessment

3. Role of Leaders in Formative Assessment

There are numerous studies related to the responsibility of leaders in instructions but very few studies were found to identify the practices of leaders to demonstrate leadership in the assessments (Privette, 2015; Popham, 2008; Stiggins & Duke, 2008; Stiggins et al., 2004). A study by Popham (2008) which cited in Privette (2015) detailed seven understandings of practices of leaders that will contribute to successful formative assessment. They are defining formative assessment, understanding the purpose, levelling the implementation by stages, evaluating tasks that contribute to mastery in students' learning, and making decisions based on results for instructional changes as well as supporting the implementation process to allow teachers to comfortably begin the formative assessment process. In these processes, leaders' role as decision makers is important especially in analyzing and evaluating the assessment information for students' improvement as well as helping teachers to enhance their instructions. Thus, school leaders may use formative assessment information to develop appropriate professional development and support systems for teachers as mentioned by Kenyon (2019). It will also encourage teachers to consistency and reliability use this instructional strategy. Privette (2015) indicated that it is very important to have effective leadership in assessments in order to effectively implement them in schools.

According to Huff et al. (2018), effective leadership in assessment will promote a comprehensible system of standards, a mutual curriculum and formative assessments, established instructional practices, and appropriate interventions. Moreover, according to Stanley and Alig (2014) in Kenyon (2019), the implementation of formative assessments in schools as well as having supportive and informative leaders will contribute to the enhancement of students' achievements. Thus, Privette (2015) emphasized on the importance of including leaders' responsibilities as part of the support system for the enhancement of formative assessment practices among teachers. As instructional leaders, the headmaster and senior leadership team should emphasize on instructional responsibilities to support and lead teachers in their assessment practice. Guidance and support from leaders are crucial for all teachers in developing a positive school climate that will commit to formative classroom strategies to improve students' learning and promote the school growth, as mentioned by Privette (2015).

4. Four Major Categories of Instructional Leaders' Responsibilities

There are numerous responsibilities required from the leaders to contribute to the support mechanism for the teachers. A substantial number of researches support the theory that the effectiveness of schools is dependent upon the instructional leadership of principals (Privette, 2015; Engelking, 2007; O'Donnell & White, 2005; Cotton, 2003; MacNeill, Cavanagh, & Silcox, 2003; Waters et al., 2003; Stiggins, 2001). Privette (2015) explained that these responsibilities include being involved with the teachers in the design of curricular and instructional activities, being involved in addressing assessment issues, focusing on goals that promote students' successes, and evaluating curriculum, instructions, and assessment as stated in the previous study by Engelking (2007). According to Privette (2015), instructional leaders' roles and responsibilities are divided into four major categories, namely curriculum, instructions, supervision and evaluation. Instructional leaders who successfully lead and manage instructional programs perform these four roles effectively. At the same time, they ensure the curriculum and assessments are aligned with the students' achievements.

Engelking (2007) defined curriculum as the standard of framework for instructions in school. Formerly, curriculum was defined as a course of study programs in an educational setting and the term also inclusively refers to formal or informal content and processes in which learners gain knowledge, skills, attitude and values towards the achievement of educational goals (Bunyi, 2013). Bunyi (2013) explained the importance of curriculum as the core to education that was recognized through the curriculum content and processes to meet national outcomes in education for schools to accomplish students' achievements. After all, the purpose of curriculum is to focus on students' learning process and improve teachers' instructions (Privette, 2015). Engelking (2007) identified instructions as the main responsibility of leaders in schools and should be used by teachers in the classroom. In fact, the aim of instructions is defined as the process of conveying knowledge to others where teachers are encouraged to use instructions to conduct learning (Privette, 2015). Hitt and Tucker (2016) also suggested a model of five domains that are essential for effective leadership practices to improve instructions where one

domain focuses on leaders' roles to facilitate high quality learning experiences that emphasize on developing and monitoring curricular, instructional and assessment programs (Lochmiller & Cunningham, 2018).

Obviously, supervision is the most crucial component in the role of the instructional leader. Supervision is defined as a structured system that identifies, guides, and monitors the school environment for the purpose of productivity (Engelking, 2007). In addition, supervision is considered as a complex process that emphasizes on instructions to provide teachers with information to improve their teaching performance (Farley, 2010; Beach & Reinhartz, 1989). Leaders supervise teachers in order to promote and support instruction decisions and enhance rapport with teachers in school (Privette, 2015; Jorissen, 2006, p. 30). Supervisory leaders contribute to school improvement by guiding and supporting teachers in relevant changes that emphasize on students' achievements (Privette, 2015; Cotton, 2003). Finally, evaluation occurs after the completion of instructional supervision of school leaders. Engelking (2007) had identified the various aspects of responsibilities in evaluation required of instructional leaders. In addition, evaluation determines teachers' effectiveness in the delivery of materials and information for student learning (Engelking, 2007) and encouraging a culture of continuous improvement among teachers and leaders (Privette, 2015). The process of evaluation through observation in instructions has indicated a predominant goal in evaluating teachers and guiding them to improve in instructions (DeWitt, 2017).

5. The Conceptual Framework

The conceptual framework of this study was adapted from the study of Privette (2015) which identified the roles and responsibilities of instructional leader on teacher's formative assessment practices in school. Based on his model, the roles of instructional leader were classified into four categories of instructional responsibilities namely curriculum, instructions, supervision, and evaluation (Privette, 2015; Engelking, 2007). The dependent variable was identified as the teachers' formative assessment practices (Kenyon, (2019). The dimension of teachers' formative assessment practices was adopted from Kenyon (2019) which consists of four important steps for the implementation of formative assessment namely, setting learning targets, implementing formative assessment practices, managing students' feedback and adjusting instructions for improvement. Basically, this study was designed to identify the relationship between the leaders' role and the teachers' formative assessment practices in school based on the studies by Privette (2015) and Kenyon (2019) respectively.

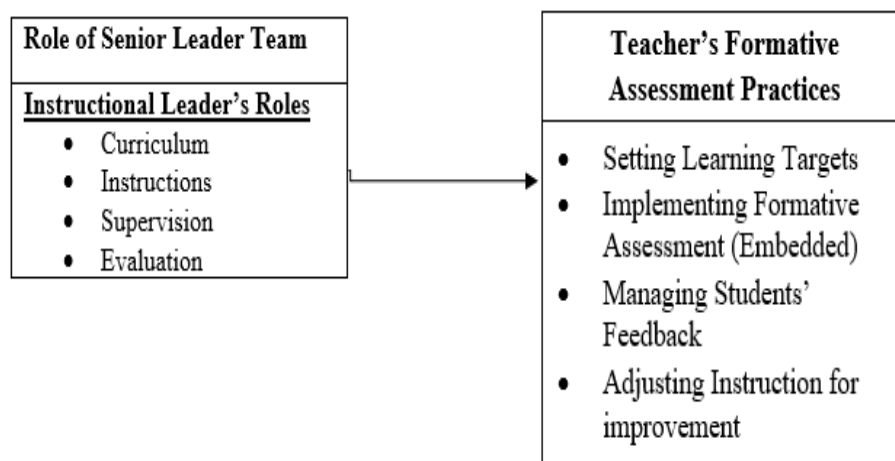


Figure 1 Conceptual framework of the study

RESEARCH METHOD

A quantitative approach of descriptive correlational research design was chosen as the research method for this study. The quantitative approach is suitable in the context of this study in order to describe the

characteristics of the roles of instructional leadership and formative assessment practices (Gall, 2010). Furthermore, the correlational research design was used to examine the relationship between these two research variables in this study. This descriptive correlational research design was deemed appropriate to identify the relationship between the roles of the instructional leadership of Senior Leader Team (SLT) and teachers' practices in the formative assessment.

1. Population and Sampling

In this study, the population is restricted to primary school teachers from the area of Petaling, Selangor. The schools in Petaling area are under the management of Petaling Utama Education District Office, Selangor. The school population in this study was identified from the Damansara zone which includes Sri Damansara, Kota Damansara and Damansara area. All the teachers in these 25 schools within Damansara zone area were totaled up to 1311 teachers and has been identified as the population of this study (N=1311). A simple random sampling method was applied to randomly select the respondents from these 25 primary schools in the Damansara zone under the Petaling Utama Education District Office. Based on the total number of populations in this study, the sampling table from Krejcie and Morgan (1970) was referred to get the required sample size for the population of 1311 (N=1311) which was 297. In this study, the function in Excel Microsoft Spreadsheet was used by inserting the function RAND(). The researcher decided to choose six schools out of the 25 schools and then to select 50 teachers from each of these six schools selected. Hence, All 25 schools were labeled with a record number ranged from 001 until 025 in the spreadsheet before the function RAND() was used to generate the numbers for simple random sampling to select 50 teachers from each of the six schools that have been identified. Finally, a total of 360 respondents have been randomly selected the six schools in this district.

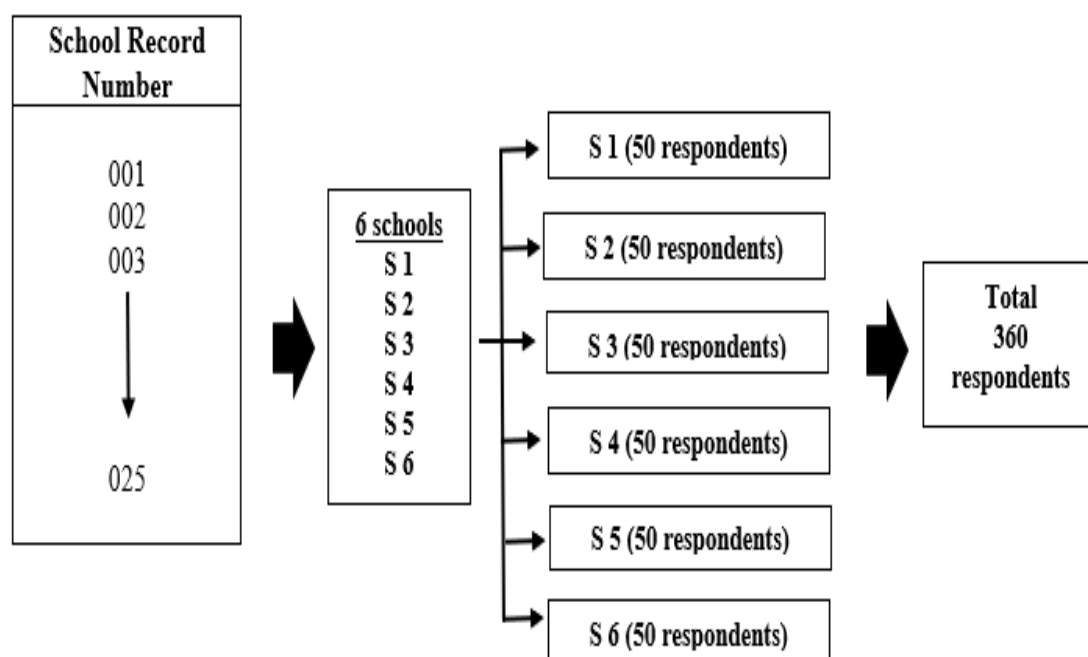


Figure 2 Simple random sampling procedures for questionnaire distribution

2. Data Collection and Analysis

The researchers combined the instrument of *Teacher Formative Assessment Practices Survey* developed by Kenyon (2019) with the instrument of *Formative Assessment Survey for the Leaders in Formative Assessment* developed by Privette (2015) to form the research instrument. The questionnaire consisted of three sections which are Section A: Respondent Demographic Profile, Section B: Teacher Formative Assessment Practices, and Section C: Role of Leaders in Formative Assessment Implementation. The data analysis was carried out based on the research questions to determine the use of descriptive and

inferential statistical analysis. In this study, descriptive statistical analysis was used to determine the respondents' profile, however, independent sample t-test was used to identify any significant difference in the mean scores between gender, and correlational analysis was used to measure the degree of association relationship between the two variables and finally the multiple regression analysis was used to determine the contribution of the predicting variables towards the dependent variables of formative assessment.

RESULTS AND DISCUSSION

1. Demographic Profile of Respondents

This study was conducted in 25 public primary schools in Petaling. There are an estimated of 360 respondents in the targeted schools and in return, a total of 198 respondents have completed the online survey which contributed to a 66% response rate. The first section of the questionnaire comprised of five questions that explained the demographic profile of the respondents. The five demographic factors were (1) Gender, (2) Age, (3) Academic Qualification, (4) Years of Teaching Experience and (5) Subject of Teaching. Table 2 lists the frequencies and percentage of gender, age and level of qualification of the respondents of the study. Table 2 also shows the level of qualifications among respondents which indicates that a majority of them were degree holders (93.4%, n=185) while 6 teachers had higher qualifications in the form of a master's degree (3.0%) and 7 teachers were qualified with a diploma (3.5%). Meanwhile, Table 3 describes the teaching experience in years and subject of teaching among all the respondents.

Table 2 Gender, age and qualification of the respondents

Demographic	Variable	Frequency	Percentage
Gender	Male	52	26.3
	Female	146	73.7
	Total	198	100.0
Age	Below 30 years old	43	21.7
	31 to 40 years old	83	41.9
	41 to 50 years old	57	28.8
	50 years old and above	15	7.6
	Total	198	100.0
Qualification	Diploma	7	3.5
	Degree	185	93.4
	Masters	6	3.0
	Total	198	100.0

a. Research Question 1: What is the level of the formative assessment practices as perceived by primary school teachers?

Table 4 summarizes the teachers' perception on their formative assessment practices in four different dimensions. Based on the findings in Table 1, 'Setting Learning Target' dimension had achieved the highest mean score ($M = 4.29$, $SD = .535$), while 'Implementing Formative Assessment' dimension had the lowest mean score ($M = 3.65$, $SD = .536$). The findings showed the teachers were more focused on set learning target and managing their feedback to students, however they were a bit less focused on adjusting instruction for improvement and implementing the formative assessment in the true sense. However, overall, the teachers' formative assessment practices were rated as very often implemented with a high mean score ($M = 3.99$, $SD = .493$).

Table 3 Teaching experience and subject of teaching of the respondents

Demographic	Variable	Frequency	Percentage
Teaching Experience	Below 10 years	91	46.0
	11 - 15 years	58	29.3
	16 - 20 years	24	12.1
	21 years and above	25	12.6
	Total	198	100.0
Subject of Teaching	Bahasa Melayu	33	16.7
	English	47	23.7
	Mathematics	30	15.2
	Science	16	8.1
	Islamic studies	57	28.8
	Music	2	1.0
	Physical education	4	2.0
	History	1	.5
	Preschool	2	1.0
	Others	6	3.0
	Total	198	100.0

Table 4 Teachers' formative assessment practices

Teachers' Formative Assessment Practices	N	Mean	Standard Deviation
Setting Learning Target	198	4.29	.535
Implementing Formative Assessment	198	3.65	.536
Managing Feedback	198	4.06	.592
Adjusting Instruction for Improvement	198	3.98	.603

Overall Mean = 3.99 SD = .493

Scale: Never = 1, Rarely = 2, Sometimes = 3, Very Often = 4, Always = 5

The findings revealed that most of the teachers were often planned their lessons by setting the learning target in alignment with the learning activities and assessment. It shows that teachers do practice the first stage of formative assessment process pertaining to the needs of aligning the learning goals with suitable in-class activities and assessment. Planning and setting learning target based on students' prior knowledge is crucial to ensure that students meet the learning goal throughout the instruction and assessment process. This is corresponding to the suggestions by Brookhart et al. (2009) that the critical part of formative assessment relies on the process of establishing learning targets by measuring students' recent understanding before narrowing the learning gaps.

In addition Bonner (2012) also posit that setting the learning goals is the first step of formative assessment practice. The mean score of 'Implementing formative assessment practices' perceived by teachers was comparative lower among other dimensions in teachers' formative assessment practices implies that even though teachers are trying to improve students' learning through assessment, the implementation assessment practices still has the room for improvement. In fact, teachers need to identify their level of understanding in practicing formative assessment before any adjustments or improvement can produce the desired impact. According to Bonner (2012), teachers' misconception on the formative assessment process will influence its implementation in the classroom. Therefore, their understanding on the processes involved in formative assessment is essential to ensure that the practice will significantly impact students' achievement.

Nevertheless, they are still lacking in implementing formative assessment and adjusting the instruction for improvement as mentioned by Ismail & Tini (2020) and Chin et al. (2019) that teachers are still struggling in planning, developing assessments instruments and analyzing assessment data in school-based assessment. This indicates that the complete cycle of formative assessment practices still needs further consideration to improve students' learning in the classroom to meet the standard of

curriculum and assessment in our education system. This finding will serve as a benchmark to upgrade the policy on assessment in order to improve teachers' practices in formative assessment and also school-based assessment as a whole.

b. Research Question 2: What are the roles of the senior leader team in the implementation of formative assessment as perceived by primary schools' teachers?

Table 5 shows the mean scores of teachers' perceptions on their senior leader's role on formative assessment implementation in four dimensions namely, curriculum, instruction, supervision and evaluation. Almost all the teachers perceived that their leaders have played their roles to a quite a big extent ($M = 4.18$, $SD = .753$). From the results, it showed that the dimension of "Curriculum" had been rated with the highest mean score ($M = 4.26$, $SD = .797$) while the role of their senior leaders in the "Evaluation" dimension has been rated with the lowest mean score ($M = 4.11$, $SD = .801$).

Table 5 Role of leaders on formative assessment implementation

Role of Leaders on Formative Implementation	N	Mean	Standard Deviation
Curriculum	198	4.26	.797
Instruction	198	4.20	.759
Supervision	198	4.16	.820
Evaluation	198	4.11	.801

Overall Mean = 4.18 SD = .753

Scale: 1 = Not at All, 2 = A Little, 3 = Somewhat, 4 = Quite A Bit, 5 = A Great Deal

To summarize, the findings in Table 5 show that their leaders have demonstrated quite a bit of their leadership in the four dimensions in the implementation of formative assessment. It reveals the importance for leaders to implement the four aspects efficiently to ensure the effectiveness of instructional coaching in formative assessment. This process has formed a cycle of improvement in guiding and coaching teachers on the instructions and formative assessment practices. According to Huff (2009) in Privette (2015), the effective leadership in assessment will promote a comprehensible system of standards, a mutual understanding of curriculum and formative assessments to establish the high quality of instructional practices, and to design appropriate interventions.

c. Research Question 3: Is there any significant difference in formative assessment practices between male and female teachers in primary schools?

H_0 = *There is no significant difference in teachers' formative assessment practices between male and female teachers*

H_1 = *There is a significant difference in teachers' formative assessment practices between male and female teachers*

Table 6 indicates that there was a significant difference in the mean scores between male teachers ($M = 4.23$, $SD = .655$) and female teachers ($M = 4.31$, $SD = .487$, $t(196) = -.738$, $p < .01$) in the aspect of "Setting Learning Target". However, in the aspect of "Implementing Formative Assessment", the result did not indicate any significant difference between male teachers ($M = 3.60$, $SD = .584$) and female teachers ($M = 3.67$, $SD = .518$, $t(196) = -.856$, $p > .05$). Besides, for the aspect of "Managing Feedback" also indicated no significant difference in the mean scores between males ($M = 3.96$, $SD = .689$) and females ($M = 4.09$, $SD = .551$, $t(196) = -1.41$, $p > .05$). it was the same for the final dimension of "Adjusting Instruction for Improvement", which did not show any significant difference in the mean scores between male teachers ($M = 3.90$, $SD = .652$) and female teachers ($M = 4.00$, $SD = .584$, $t(196) = -1.11$, $p > .05$). Thus, based on the findings, the researchers failed to reject the null hypothesis in three aspects namely in "Implementing Formative Assessment", "Managing Feedback" and "Adjusting Instruction for Improvement" but was only able to reject the null hypothesis in the aspect of "Setting Learning Target".

Table 6 Independent samples t-test for teachers' formative assessment practices dimensions based on gender

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	Df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Setting Learning Target	Equal variances assumed	6.51	.011	-.847	196	.398	-.073	.087	-.244	.097
	Equal variances not assumed			-.738	72.13	.463	-.073	.099	-.271	.125
Implementing Formative Assessment	Equal variances assumed	.58	.446	-.856	196	.39	-.074	.087	-.245	.097
	Equal variances not assumed			-.809	81.3	.42	-.074	.092	-.257	.108
Managing Feedback	Equal variances assumed	1.03	.31	-1.41	196	.16	-.134	.095	-.322	.054
	Equal variances not assumed			-1.27	75.5	.21	-.134	.106	-.345	.077
Adjusting Instruction	Equal variances assumed	1.43	.23	-1.11	196	.27	-.108	.097	-.300	.084
	Equal variances not assumed			-1.05	81.9	.30	-.108	.103	-.312	.096

The significant difference identified in the dimension of “Setting Learning Target” indicates that male teachers were less emphasized on planning their instruction and assessment in alignment with the curriculum standard nor withstanding the importance of setting the learning goals of a lesson. On the other hand, female teachers understand more of the importance of setting and planning instructions and assessment based on the learning goals to ensure that the process of learning specifically meets the intended target. Such attitude may vary across gender in terms of planning the lessons and this justifies that teachers' perception may differ according to gender. Previous scholars stated that the issues of ethnicity, qualifications, and gender will influence the perception of the teachers (Shauki et al., 2009). Perception is defined as a certain level of understanding about something based on the information obtained from various accurate or inaccurate sources that may impact the decision-making process by the individuals such as teachers (Shauki et al., 2009). In contrast, gender-based perception among teachers was not significant in the three dimensions of implementing formative assessment during instruction namely, managing feedback, adjusting instruction and implementing formative assessment.

d. Research Question 4: Is there a significant relationship between the role of the senior school leader team and implementation of formative assessment practices as perceived by primary school teachers?

H_0 = There is no significant relationship between role of senior leaders in formative assessment implementation and teachers' formative assessment practices in the study

H_1 = There is a significant relationship between role of senior leaders in formative assessment implementation and teaches' formative assessment practices in the study

Table 7 Relationship between teachers' formative assessment practices and the role of leaders in formative assessment implementation

		Teachers FA Practices	Role of Leaders
<i>Teacher Formative Assessment (FA) Practices (Overall)</i>	Pearson Correlation	1	.436**
	Sig. (2-tailed)		.000
	N	198	198
<i>Role of Leaders (Overall)</i>	Pearson Correlation	.436**	1
	Sig. (2-tailed)	.000	
	N	198	198

** Correlation is significant at the 0.01 level (2- tailed)

Based on results in Table 7, it shows that the total scores of Teacher Formative Assessment Practices (overall) was positively, moderately and very significantly associated with the Role of Leaders in Formative Assessment Implementation ($r = .436$, $p\text{-value} = .000$). The findings suggest that teachers tend to be more engaged with formative assessment practices when there is a stronger support received from instructional leaders during the implementation of formative assessment practices. Thus, the null hypothesis was rejected. In this study, the finding indicated that leaders' responsibilities in formative assessment is crucial to support teachers in the implementation of formative assessment practices in schools. This finding was supported by Privette (2015) who found that effective leadership was crucial to ensure effective implementation of assessments in schools. Undeniably, teachers need guidance from a group of senior leaders in schools to assist them in the four main aspects of formative assessment namely, setting learning target, implementing formative assessment embedded in instruction, managing feedback, and adjusting instruction for improvement. Leaders should provide a support system for teachers in formative assessment in order to effectively intervene the assessment for improvement of learning in the classroom.

In fact, Privette (2015) emphasized on the roles of senior leaders in the support system of formative assessment practices among teachers for better student learning outcomes. This statement is supported by Knight (2007) who explained that instructional leaders, including senior leaders in schools, need to perform the role of instructional coaching in order to improve the quality of teachers' instructions in the classroom. Thus, the role of leaders as the instructional leaders in formative assessment is significantly related to the teachers' formative assessment practices in schools that subsequently contributes to better students' achievement.

e. Research Question 5: What are the various factors that influence the formative assessment practices among primary school teachers?

H_0 = There is no relative contribution towards teachers' formative assessment practices in the study.

H_1 = There is a relative contribution towards teachers' formative assessment practices in the study.

Multiple regression analysis was conducted to examine the contribution of predicting variables (Role of Leaders, Teacher's gender, Teacher's age, Teaching experience and Teacher's qualifications) towards formative assessment practices as perceived by teachers as respondents in this study. Five independent variables namely role of leaders, gender, age, teaching experience and qualifications were statistically analyzed in this multiple regression analysis model in order to observe the contribution of these predictors on teachers' formative assessment practices in school. For the purpose of this study, a multiple regression model was proposed as below:

$$Y = \alpha + \beta_1\chi_1 + \beta_2\chi_2 + \beta_3\chi_3 + \beta_4\chi_4 + \beta_5\chi_5 + e \quad (1)$$

Where:

- Y** = the effects on teachers' formative assessment practices (dependent variable)
 α = regression constant
 β_1 = standardized beta coefficient for the leader's role in formative assessment implementation
 χ_1 = leader's role in formative assessment implementation
 β_2 = standardized beta coefficient for teacher's gender
 χ_2 = teacher's gender
 β_3 = standardized beta coefficient for teacher's age
 χ_3 = teacher's age
 β_4 = standardized beta coefficient for teacher's level of experience
 χ_4 = teacher's level of experience
 β_5 = standardized beta coefficient for teacher's qualification
 χ_5 = teacher's qualification
e = random error

Table 8 Multiple regression of possible predictors for teachers' formative assessment practices in primary schools in Petaling

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.382	.339		7.031	.000
	Role of Leaders	.288	.042	.439	6.812	.000
	Gender	.100	.074	.090	1.353	.178
	Age	.010	.060	.017	.163	.871
	Teaching Experience	.020	.050	.043	.405	.686
	Qualifications	.088	.127	.046	.691	.490

F = 9.865, P < .01, R Square = .204, Adjusted R Square = .184

a. Dependent Variable: Overall Teachers' Formative Assessment Practices

b. Predictors: (Constant), Role of Leaders, Gender, Age, Teaching Experience, Qualifications

Table 8 indicates that the Role of Leaders ($t = 6.812$, $p < .000$) was a significant predictor towards Teachers' Formative Assessment Practices in school. Out of five independent variables, only Role of Leaders variable was able to predict the dependent variable of Teachers' Formative Assessment Practices. Further analysis was conducted on standardized coefficient values of the five independent variables to identify the contribution strength of each the variable involved namely: Role of Leaders, Gender, Age, Teaching Experience and Qualifications. Based on the results of beta coefficient, the contribution values indicated that the Role of Leaders had a strong contribution to Teachers' Formative Assessment Practices compared to other four independent predictor variables. Role of Leaders was having the highest standardized beta coefficient value (.439) compared with Gender (.090), Qualifications (.046), Teaching Experience (.043) and finally Age (.017). Overall, the multiple regression model to estimate the effect of Teacher's Formative Assessment Practices in the primary schools in Petaling was presented as below:

$$Y = 2.382 + .439 \chi_1 + e \quad (2)$$

Where:

Y = the effect on teachers' formative assessment practices

α = regression constant

β_1 = standardized beta coefficient for Role of Leaders

χ_1 = Role of Leaders in formative assessment implementation

e = random error

Additionally, Table 8 also shows the value of coefficient of determination was significant ($r^2 = .204$, $p < .01$). The R Square value explained that 20.4% of formative assessment practices among primary school teachers in Petaling was predicted by the Role of Leaders in formative assessment implementation. Therefore, in this study, the role of leaders in formative assessment implementation can be significantly used to predict the teacher's formative assessment practices in school. Thus, there was a significant contribution of the roles of the leaders towards teacher's formative assessment practices. Hence, the null hypothesis was rejected.

Such result reveals that leaders' role contributed a significant impact on teachers' formative assessment practices in schools. The role of leaders in school will ensure the successful implementation of formative assessment with prominent impact on students' learning. This finding is supported by Privette (2015) who advocated the importance to have effective leadership in assessments in order to effectively implement them in schools. Additionally, school leaders must have the information about teachers' formative assessment practices in order to support the process of helping students to understand concepts and successfully meet the learning outcomes (Kenyon, 2019; Sanzo, Myran & Caggiano, 2015). In this study, the teachers' perception on formative assessment practices are not contributed by the factors of age, gender, experience, and qualification of the teachers. In fact, teachers' formative assessment practices need to be improved through instructional guided support from leaders. As the formative assessment still has not been well understood by all teachers, thus, teachers' practices need to be refined continuously by having a good supporting system implemented by the leaders in schools. As suggested by Kenyon (2019), school leaders should use formative assessment information to develop appropriate professional development and support systems for teachers.

CONCLUSION

This study is an attempt to extend the current knowledge on formative assessment which has been investigated since late 1990s. This study has suggested four main stages of formative assessment practices namely setting the learning target, implement formative assessment (embedded), managing feedback, and adjusting instruction for improvement as suggested by Kenyon (2019). These stages are critical in the formative assessment process and will indicate the level of knowledge among teachers. Therefore, the findings on teachers' formative assessment practices are expected to clarify the level of knowledge and understanding of teachers in the process of formative assessment and contributes towards further action to improve teachers' practices in instruction. Teachers need to identify their level of understanding in practicing formative assessment before any adjustments or improvement can produce the desired impact. According to Bonner (2012), teachers' misconception on the formative assessment process will influence its implementation in the classroom. Therefore, their understanding on the processes involved in formative assessment is essential to ensure that the practice significantly impacts students' achievement.

The findings of this study further confirmed the importance to implement the four main stages of formative assessment practices in school namely, setting the learning target, implement formative assessment (embedded), managing feedback, and adjusting instruction for improvement. These four stages are critical in the implementation of formative assessment processes and will indicate the level of knowledge among teachers in the process of formative assessment and contribute toward the improvement of teachers' practices in instruction and assessment. Besides, the study also suggested that the role and responsibility of senior leaders in formative assessment should be further enhanced

and must develop a good supporting system to help teachers to implement formative assessment in school.

Undeniably, school leaders should provide training and coaching services for teachers in formative assessment. In fact, relevant trainings and Professional Learning Community (PLC) should be introduced to teachers for professional development in schools. This is based on the role of leaders in the implementation of formative assessment comprises of four dimensions pertaining to their responsibility to support teachers on formative assessment practices. In the context of this study, teachers perceived their leaders in four aspects of curriculum, instruction, supervision, and evaluation. It reveals the necessity for leaders to implement the four aspects accordingly to ensure the effectiveness of instructional coaching in formative assessment. The process started from supporting teachers in curriculum and guiding them through instructional coaching in the classroom. This is followed by continuous supervision on the teachers' instruction through classroom observation. Finally, leaders have to evaluate the teachers' practices to guide their instructional process and related assessment for further improvement. This process has constructed a cycle of improvement in guiding and coaching teachers on the instructions and formative assessment practices.

According to Huff (2009) in Privette (2015), the effective leadership in assessment will promote a comprehensible system of standards, a mutual curriculum, mutual formative assessments, established instructional practices, and appropriate interventions. Therefore, proper support mechanisms must be put in place by leaders to manage and guide teachers in formative assessment practices through guided classroom instructions (Privette, 2015; Pinchok & Brandt, 2009). Obviously, leaders in schools need to develop a support mechanism for teachers to improve their formative assessment practices through series of trainings and the formation of Professional Learning Community for teachers' continuous professional development.

In fact, a module focusing on curriculum and assessment for learning should be included as part of the course framework to expose these pre-service teachers at Teacher Training Institutes to the basis of formative assessment in instructional process. This module is suggested to include all the four stages of formative assessment practices, namely setting learning target, implementing embedded formative assessment through instructional process, managing feedback, and adjusting instruction for improvement. Not only that, a module comprising the leaders' role in formative assessment is also suggested to be included in the program of National Professional Qualification for Educational Leaders (NPQEL). This can be part of the leadership training modules of instructional leadership for new headmasters and principals as suggested in the Malaysia Education Blueprint 2013-2025 (MOE, 2018; 2017; 2016; 2013) in Shift 5 to ensure the high-performing school leaders in every school through NPQEL. This is echoed to the suggestion of Privette (2015) who emphasized on the importance of including leaders' responsibilities as part of the support system for formative assessment practices among teachers for them to understand the relationships between learning, assessment for understanding, and student outcomes.

There are several conclusions can be derived from the results in relation to the research objectives of this study. Firstly, teachers are more engaged in planning their lessons through setting the learning target and aligning it with the instruction and assessment. It shows that teachers do practice the first stage of formative assessment process pertaining to the needs of aligning the learning goals with suitable in-class activities and assessment. Planning and setting learning target based on students' prior knowledge is crucial to ensure that they meet the learning goal throughout the instruction and assessment process. This is corresponding to Bonner (2012) that the critical part of formative assessment relies on the process of establishing learning targets by measuring students' recent understanding before narrowing the learning gaps.

In addition, Bonner (2012) also posit that setting the learning goals is the first step in formative assessment practice. Secondly, teachers perceived that their senior leader team in schools are delivering more support in the aspect of curriculum in order to specify the content of learning in every subject. Leaders demonstrated their responsibility on formative assessment by encouraging teachers and providing support to the curriculum and assessment practices that have contributed to students' achievement. Ediger (2002) believes that leaders' responsibilities are extended to guide teachers in determining the learning objectives to achieve, help teachers to decide the most suitable learning experiences for students, and assist teachers in using the best assessment method to measure students' progress towards meeting curriculum goals. Thirdly, according to gender, there was a significant

difference between male and female teachers in setting the learning target which indicated that female teachers were better in planning the instruction with learning goals specifically in alignment with the learning activities and assessment. Such attitude may vary across gender in terms of planning the lessons and this justifies that teachers' perception may differ according to gender. Previous scholars stated that the issues of ethnicity, qualifications, and gender are determined by perception (Shauki et al., 2009).

Perception is defined as a certain level of understanding about something based on the information obtained from various accurate or inaccurate sources that may impact the decision-making process by individuals (Shauki et al., 2009). However, gender-based perception among teachers is not significant in the three dimensions namely, implementing embedded formative assessment in instruction, managing feedback, and adjusting instruction for improvement. Fourthly, teachers perceived that the leaders' role is significantly correlated to the formative assessment practices in schools. The finding proves that leaders' responsibilities in formative assessment is crucial to support teachers' formative assessment practices in schools. Privette (2015) indicated that it is important to have effective leadership in assessments in order to effectively implement them in schools. Privette (2015) emphasized on the importance of including leaders' responsibilities as part of the support system for formative assessment practices among teachers for them to understand the relationships between learning, assessment, and student outcomes. Thus, instructional leaders involving headmaster or principal together with senior assistants as the coaches have to construct a support system on formative assessment implementation in schools. This statement is supported by Knight (2009) who explained that instructional leaders, including senior leaders in schools, need to perform the role of instructional coaches to complete the cycle of instructional coaching in order to improve the quality of teachers' instructions in the classroom.

Finally, the regression findings indicated that the role of leaders in formative assessment is a significant predictor towards teachers' formative assessment practices. Such result reveals that leaders' role contributes a significant impact on teachers' formative assessment practices in schools. The role of leaders in school as formative assessors will ensure the successful implementation of formative assessment with prominent impact on students' learning. This finding is supported by Privette (2015) who explained the importance to have effective leadership in assessments in order to effectively implement them in schools. Additionally, school leaders must have the information about teachers' formative assessment practices to support the process of helping students in understanding concepts and successfully meet learning outcomes (Kenyon, 2019; Sanzo, Myran & Caggiano, 2015).

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DATA AVAILABILITY

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CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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