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The Use of Formative Assessment Techniques in the Geography Subject: A Case Study

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Abstract

A proper and effective implementation of formative assessment techniques in the classroom will help to improve students' learning. Oral questioning, exercises, seatwork, quizzes, discussions, projects, assignments and homework are among the common formative assessment techniques applied by teachers during the T&L process. This paper reports the findings of a qualitative study undertaken to identify the formative assessment techniques used by geography teachers during the teaching and learning process. A case study design was used, and the study was conducted in one secondary school in Perak, Malaysia. Two Geography teachers participated in the study. Data were obtained through observations, interviews and document analysis. Discussion on the finding was based on the use of formative assessment techniques in the teaching and learning process. The study showed both teachers adopted a variety of assessment techniques to improve the students' learning and help them achieve the learning objectives. The study also noted that the dominant technique was oral questioning, a technique which is functionally complimentary to other techniques and suitable for different purposes. Using various formative assessment techniques is important to enable teachers to make correct decisions based on the students' skills and levels of ability. Using various assessment techniques also helps to ensure high validity of the constructs measured. As a whole, the finding of the study significantly demonstrates how formative assessment can be effectively implemented as part of the teaching and learning process in a Geography lesson. It also demonstrates clearly how the oral questioning technique can be used as a major technique in formative assessment.

Keywords *Formative assessment, formative assessment techniques, teaching and learning Geography.*

INTRODUCTION

Formative assessment techniques are referred to as the activities used in the process of assessing the students during the teaching and learning process (Pinchock & Brandt, 2009). Formative assessment techniques are combined with, moving in tandem and embedded in the teaching and learning (T&L) process (Brookhart, 2007; Mohd Azhar & Shahrir, 2007; Stiggins & Chappuis, 2006). Because of its simultaneous and embedded

nature, it is sometimes referred to as design, technique, equipment or activities and there is no clear line differentiating the functions of activities as formative assessment techniques or as T&L techniques. Black and Wiliam (1998) consider all techniques can be used as tools for formative assessment purposes as long as the methods and techniques can provide information for teachers to modify their teaching process to improve their students' learning.

Assessment experts have suggested hundreds of formative assessment techniques which could be applied by teachers in their classroom (Black & Wiliam, 1998; Cizek, 2010, Harlen, 2007; Scherer, 2005). Formative assessment techniques are conducted informally and may include such techniques as discussion, observation, oral questions and answers, seatwork, writing exercises, homework, projects, portfolios, group work, quizzes, assignments, self assessment, assessment development and dialogue (Black & Wiliam, 1998; Brookhart, 2007; Cizek, 2007; Chappuis & Chappuis, 2008; Harlen, 2007; Scherer, 2007). All these techniques are means to help students develop their thinking and reflective skills, enhance their understanding and provide them with the opportunity to think in-depth and show their ideas. (Black & Wiliam, 1998; Brookhart, 2007; Cizek, 2007; Chappuis & Chappuis, 2008; Harlen, 2007; Scherer, 2007). Using these techniques can also attract active students' involvement in the T&L process (Black & Wiliam, 1998; Crooks, 1998; Hamm & Adams, 2009; Scherer, 2005; Stiggins & Chappuis, 2006). Apart from that, using various techniques in formative assessment can improve the validity of the constructs measured (Brookhart 2009). This means decisions made in relation to the learning of students have high validity because the information which forms the basis of these decisions is obtained from various sources through various techniques (Brookhart, 2009). For example, students' behaviour shown during the formative assessment activities in the T&L sessions provide information needed by teachers to make decisions on what to do next. This information is important for teachers to better understand their students' learning so that modification can be performed on their teaching to meet the needs of the students (Brookhart, 2010).

To ensure formative assessment plays effective roles in improving student learning, teachers should regard the achievement of learning objectives or learning standards as the primary focus of the exercise (Brookhart, 2010). Techniques used to assess students' learning should be relevant and consistent with the objectives or standards. Strategies, techniques and activities planned should match the student's academic ability, easy to implement, and student friendly to facilitate the achievement of the learning objectives. The selection of the techniques should also be done accurately to encourage students to participate in, and lead the process of formative assessment as well as helping them to share information and demonstrate their understanding (Brookhart, 2010; Black & William, 1998).

Formative assessment may not sound like a complicated procedure, especially as it can easily be integrated as part of the teaching and learning process. However, studies have shown that teachers need adequate training to enable them to combine the formative assessment techniques with the T&L process effectively (Black & Wiliam, 1998; Stiggins & Chappuis, 2006). In order to enhance the validity of the measurement, it is essential that teachers master the skills of using the formative assessment techniques to measure students' performance with regards to the specified

learning standards (Cizek 2010). Just as importantly, teachers also need to be properly trained on how to use the results of formative assessment to improve their students' learning (Fisher & Frey, 2009).

Another important consideration is the suitability of formative assessment techniques to students of different backgrounds. A study conducted by Xu (2010) found that secondary school students in urban and rural areas do their homework for different reasons. Urban students believed homework can help them with time management and understand their study better, build discipline, develop responsible attitudes and self-learning, as well as providing them with the opportunity to learn and practice skills. They also believed homework can help them with their preparation for the next topic. Scherer (2005) found that seatwork and observation are assessment techniques that can help train students to understand better. Both these techniques can also help measure students' level of understanding of the subject matter. Checklist observation techniques may be used to check students' work while they are still undergoing the task. Pre-assessment instruction can be used to diagnose and detect student's mastery of knowledge and skills, and any misunderstanding of the concept. For pre-assessment techniques, suitable activities include oral questioning, short quizzes and true-false questions.

The oral questioning technique is the most popular technique among teachers (Black & William, 1998; Stiggins, 2001). This, however, will not be of much benefit to any party unless the questions being used in the technique are properly designed to enhance students' learning and understanding. Black and Wiliam (1998, p 144) stated that the questions used in this technique "should be thoughtful, reflective, focused to evoke and explore understanding, and conducted so that all students have an opportunity to think and to express their ideas". This is important so as to help students develop their ability to think critically and creatively. Apart from that, this technique could guide the T&L process and stimulate the students' thinking process (Stiggins, 2001). It can also be used for checking students' understanding (Fisher and Frey 2010).

STATEMENTS OF THE PROBLEM

Part of the problem of implementing formative assessment in school is the confusion about the concept itself among the teachers. It appears that teachers are not only unfamiliar with the concept, most regard it as an extra burden; another programme that has to be carried out in the classroom in addition to their already heavy schedule. Despite the many efforts of the Ministry of Education to clarify and explain the concept, many teachers still view it apprehensively, thinking it has to be administered separately from their teaching and learning process. This study was intended to take a different approach in addressing this confusion and apprehension, by exposing the practices of two Geography teachers who have been integrating formative assessment into their teaching and learning process successfully and effectively. This would help to demonstrate to teachers that formative assessment is not a difficult concept to apply; it can easily be integrated into their teaching and learning process, adding fun into the lesson and helping students perform better. This study also intended to be a source of reference providing information to teachers on the concept of formative assessment

and how it can be successfully embedded in the teaching and learning process in the classroom.

OBJECTIVES OF THE STUDY

The objective of this study was to explore and understand the use of formative assessment techniques in geography. This study aimed to gain an in-depth understanding of the formative assessment phenomenon from the teacher's perspective. The research question was "How can formative assessment techniques be integrated into the teaching and learning process by Geography teachers?" Articles related to the concept of formative assessment may have been widely written and published, but there is a need for classroom implementation of the technique to be described in detail to further enhance understanding of the concept. Conducting a case study to expose the formative assessment practices of classroom practitioners would serve this purpose. This in turn would help to allay apprehension and confusion regarding the concept of formative assessment among teachers especially in Malaysia.

RESEARCH METHODOLOGY

This study utilized a qualitative case study approach to address the research question. A qualitative case study was considered suitable to be used in order to present a clear picture of the formative assessment phenomenon in the classroom (Marohaini, 2004). Two participants were selected for study based on strict criteria: At least 15 years of teaching experience; acknowledged as an expert in the field of formative assessment by the authority, and must possess current and up to date information on the use of formative assessment techniques. The participants were selected through purposive sampling. This was done in order to address the need of the researcher to explore, learn and understand the phenomenon effectively. According to Merriam (2009), for this to occur, the participants selected must possess good knowledge and information regarding the phenomenon being studied. The selection of participants with these characteristics could also help to improve the credibility of the findings (Patton, 2002).

Observations, interviews and document analysis were used to collect data. Non-participant observation was conducted in order to get the natural setting (Marohaini, 2004). Data obtained during the observations was reinforced with data obtained through interviews to elicit further clarification about the behaviour shown (Johnson & Christensen, 2000; Patton, 1987). Document analysis allows researchers to add, compare, and strengthen the data obtained from observations and interviews (Marohaini, 2004). Data analysis was conducted in two stages, first during the field work and the second through content analysis after the completion of the field work. Manual frequency calculation technique was used to investigate the patterns of formative assessment techniques frequently practiced by the participants of the study (Abd. Murad, 2003). Data analysis was conducted separately for each participant with the conclusions displayed in a matrix. The findings of the study are descriptive (Othman, 2009) but do not lend themselves to generalization outside their context, participants and location.

FINDINGS

The findings were presented according to individual data for each participant. No comparison was made between Teacher P and Teacher Q. Instead the discussion revolved around the formative assessment techniques used by both participants in order to gain richer and greater depth of understanding of the phenomenon being studied. Even though there were only two participants, both were highly regarded as experts in the field of Geography and both have been actively practicing formative assessment in their classrooms. Both had conducted numerous courses on formative assessment for Geography teachers.

Oral questioning

Oral questioning appeared in all three levels of the T&L process. In the early stages of T&L, Teacher P used a few questions related to the previous lesson to help introduce students to the new topic to be learned. Teacher Q on the other hand used oral questioning techniques as induction set to introduce the topic to be learned. She explained:

> "I will ask questions related to what I've taught and what I want to teach. Because I want to see whether the students have understood what I have taught, I ask questions. How can I know what they understand ... aaa ... I ask about their background knowledge as well. I relate to what I want to teach. For example when I teach about bearing, I ask them questions to find out how far they know about directions and bearings".

Question and answer activities become more important towards the middle stage. At times questions were so frequently asked that the T&L process resembled a conversation between the teacher and the students, especially Teacher P. Oral questioning also became a medium to deliver the content and concept of the topic, with lower order questions preferred by both participants, although both also used medium and higher order questions alternately from time to time. Most interestingly, both participants used oral questioning to support other assessment activities such as seatwork and exercise. For example, additional questions were asked during activities to measure the total width of space in Teacher P's class and to calculate the bearing of quadrant in Teachers Q's class.

> "First, count the full squares. How many of them? Count the ¾ squares. How many of them? Change them to full squares. How many of them now? Count the ½ squares. How many of them? Count the ¼ squares. How many of them? Count the number of squares, how many? What is the scale? Now convert the number of squares using the scale. What is the total area?"

> "Look at the direction from point B to point T. Where do we put the protractor? Ok, what is the angle? Ok, for quadrant S65B, where do we draw point B for the direction from B to A? Is that right or wrong?"

At the closing stage, Teacher P did not ask questions as actively as Teacher Q. She asked lower order yes- and no-questions just to make sure the students had understood the topic. Teacher Q on the other hand was still actively asking questions up to the point where the students were able to summarize the content and concepts that they had learned. Both teachers felt they had used oral questions both as assessment and T&L simultaneously. The assessment was embedded as part of the T&L process. Teacher Q explained:

> "With oral questions for my first priority is to see whether my students are paying attention to my teaching or not. If I asked them a question and they hesitated to answer, they look surprised then I know they did not pay attention. I ask questions to make them pay attention. Secondly I want to see whether they have understood the topic or not. If they have understood, they would be able to answer the questions. It's ok even if they don't understand and give the wrong answer, so long as they pay attention. But if they understand, so much the better ".

Seatwork

During the middle stage of the lesson, both participants actively applied seatwork after explaining the content and the concepts of the topic. According to Teacher P, the technique was a good way to train students to master the geography skills efficiently. It also allowed her to correct the students' weaknesses immediately. She stressed that seatwork plays an important role in the process of learning and teaching geography skills. She explained:

> "After teaching the concepts and contents of the lesson, I give student seatwork. During seatwork time, I can get information on whether they have understood or understand or not. During seatwork I look at how the students do the task. I ask simple leading questions to help them with the task. Sometimes if they couldn't do the task, I make a decision to re-teach".

Seatwork was used to train students to master geography skills. These include drawing contour lines and cross section of a land area, identifying position accurately, calculating and stating bearing and directions accurately, calculating distance and size of a place, drawing and interpreting charts and diagrams and interpreting topographic maps. Teacher P explained;

> "Seatwork means students are given task to complete during the lesson. It is two in one. They attempt the task while I teach them. It's a bit of self learning since they have to learn and apply the skills at the same time."

> "Seatwork provides me with the necessary information on whether my students understand the topic or not, whether they can apply the concept or not. Sometimes the students understand the concept but they couldn't apply it. When this happened, I re- teach the concept or skills."

> "By doing seatwork students are trained to apply geography concepts more effectively".

Teacher Q explained,

> "Doing seatwork is like doing an informal task. It helps them to understand better. For example drawing contour lines and cross-section of an area is best learned through hands-on practice. Otherwise the students would not master the skills. The space between the lines may not represent the slopes accurately. By doing it themselves they would learn to get it right."

While Teacher Q stated,

> "Students can master two skills, drawing the cross section and the contour lines of an area, at one go. To be able to draw well, the students have to understand the concept and types of slopes. They also have to understand that different types of slopes can be identified by looking at the way the contour lines are positioned. For example, a convex slope is represented by contour lines drawn close to each other at the starting point widely spaced on the other side. Concave slope is exactly the opposite. When I asked my students to draw, I make sure they do it carefully so that the right landscape is drawn. Then I ask them to identify and differentiate the shapes. This means they have to learn to draw properly, and identify and differentiate different types of landscapes. They also must learn to associate space between the contour lines with different types of landscapes."

Exercises

During the middle of the T&L process, both participants applied the exercise technique quite frequently. Both participants used the technique after presenting the content and concept of the topic, mostly in activities that followed seatwork activities. Both Teacher P and Teacher Q explained:

> "After my students have done seatwork I give them exercise. This is the best way for me to check whether they have really understood. The exercise would provide proof of that. This is why I give them the exercise".

> "I give exercise which is appropriate to the amount of time available. An exercise with ten objective questions is appropriate for a one period lesson. If it was a two period lesson, I may give exercise with more questions, with one period spent on doing the exercise. I think that is ok."

Both participants preferred the exercise technique because it helped to develop students at a higher cognitive level. Questions must be properly designed to guide students to achieve the learning objectives at all levels. Teacher Q explained:

> "The level of the questions must be appropriate to the level of the learning outcomes. If the learning outcome requires the students to draw a proper cross section or measure the distance between two points, I have to prepare application type questions. If the learning outcome requires them to interpret a map, I have to prepare analysis type questions. Sometimes I prepare evaluation type questions, for example, if I want the

> students to link the culture and physical features of the land. However, not everyone can answer higher order questions. Therefore, lower order questions must be available as well. I sequence the questions according to their level of difficulties. I start at the knowledge level questions and move up the level of difficulties up the evaluation level questions. However, I never give synthesis level questions."

Teacher P explained that she gave exercises to test her students' understanding,

> "When I give my students an exercise and they look worried, I know they have not understood the topic. I have to explain it again. I make sure this time they pay attention so that they understand. We can check their understanding using the exercise. I use it to identify which students have understood the topic and which students have not."

Teacher Q concurred:

> "Through classroom exercise, I can identify my students who have not understood the topic and this allows me to correct their mistakes immediately. The other benefit is for the students. They can identify their weaknesses and make immediate correction. However, if too many of the students do not understand the topic, I explain the topic all over again."

Observations

Both participants used the observation technique while the students were doing seatwork and exercises to obtain information on students' skills and understanding. They moved around the classroom, from one desk to another to check the students' progress with the task given. During the observation process, they alerted the students of their mistakes and when necessary provided explanations to enable the students to make immediate corrections. If many of the students made mistakes, they explained or demonstrated to the whole class. This is important, as Teacher P and Teacher Q explained:

> "Doing exercise and seatwork in the classroom is supposed to be more effective. Students get more benefits. They do the task by themselves. If they need to ask me questions, they can do so directly. I can provide them feedback on the spot. When I re-teach the concepts and content, they can identify their weaknesses".

> "When students are doing their task, I walk around the classroom to check if they have understood what I have taught them. If they managed to do the task, that means they have understood. In order to master the skills they have to follow the steps that I have taught them one by one. If any student still didn't understand, I briefly explain again."

Homework

Homework was given to students for additional training. Students were given sufficient time to complete their homework. To avoid students from copying, both participants

reviewed the homework in class the next session. Both participants frequently checked their students' workbooks and exercise books to make sure the students completed the homework properly. Both participants make it a habit to ask their students to explain how they got the answers to the questions given, either orally or using diagrams. The following are the explanations of Teacher Q and Teacher P related to their practice:

> "Just now we discussed the homework that I gave them last week. If I don't do that, the students wouldn't know whether they have done it correctly or not. Some of the students gave wrong answers, so they have to make corrections."

> "I check the students' homework one by one. I know some of them copied their friends' work. This is copied from a friend (she showed examples). When I discuss the homework, I ask those who copied to explain their work. They would not be able to provide smooth explanation as they do not know the answer. That is a lesson for them."

Giving homework is not a main technique used routinely. It is used when there is a need to enhance students' understanding and performance with regards to the learning standards set. It is also appropriate as a technique when there is a time constraint or when students need to do self access learning. Also, when little training is done in the classroom, homework is given as additional exercise. When students are judged to have not mastered the content or the concept well, they need homework. As Teacher P explained:

> "Doing exercise in the classroom is not enough. Sometimes there is not enough time to do the exercise. When this happens, I ask the students to do it as homework."

> "Sometimes I give the students objective questions from the textbook as homework without having to do revision in the class the following next week. Students just need to do the work at home. They don't even have to write the answers in their exercise books. It is just for independent learning exercise."

Teacher Q added,

> "When there is not enough time to do exercise, I give them questions for homework. Sometimes they copy from their friends, so I discuss the homework in the next session. Students have to explain their answers, so they have to make sure they understand the topic."

> "Homework is important and must give to students. If there is not enough time to do exercise in the class, the students can do it at home. In the next lesson, we can discuss the exercise."

Both participants set higher level questions for homework. This is to challenge students to perform at a higher level. Teacher P reported:

> "Just now I explained how to draw the pie chart, calculate the angle and calculate the percentage of sectors in a pie chart. However, there was not enough time to do the exercise, so they have to do it as homework. I gave them application type questions, because they have to calculate and draw. They have to use the knowledge that I taught them earlier. To answer question 1, they have to understand what I taught them earlier. The second question is analysis question. The question is related to question 1. They have to calculate the difference in values, so it's a bit difficult. Tomorrow we will discuss this homework in class".

DISCUSSION

Both Teacher P and Teacher Q are examples of teachers who use formative assessment techniques to help their students achieve the learning goals set (Brookhart, 2007; Stiggins & Chappuis, 2006). They are aware that using correct and accurate techniques are advantageous and beneficial to both themselves and their students. Also, their active use of formative assessment techniques during the T&L process created a learning environment where there was high student participation in the learning process. This shows that the use of formative assessment is capable of establishing a more interactive environment during the teaching and learning process (Bell & Cowie, 2000). Formative assessment techniques, especially the oral questioning technique, when properly implemented become part of the teaching and learning process, functioning as both formative assessment techniques as well as teaching techniques (Brookhart, 2007; Mohd Azhar & Shahrir, 2007; Stiggins & Chappuis, 2006). The difference between these two functions is in the nature of its utilization. Oral questioning becomes a formative assessment technique when it is used to test the students' understanding of concepts and the lesson in general after explanation is given. During the study, both teachers used this technique frequently, asking general and specific questions to test the students' level of understanding after giving an explanation of the concept. Information gathered from the activities was then used to make decisions whether to repeat the explanation of the concept or move on to the next stage of the lesson.

In this study, both participants showed a pattern in their use of the formative assessment techniques. The oral questioning technique was used actively throughout the three phases of the T&L process. The exercise technique, seatwork technique, and observation technique were used in the middle stage of the T&L process especially after explanation of the content and concept of the topic had been given (Fisher & Frey, 2009). Homework was given at the end of the T&L process, especially when there was not enough time to conduct exercises or when there were students who had yet to sufficiently master the topic as required by the learning standards (Black & Wiliam, 1998; Stiggins, 2001).

The use of these different formative assessment techniques by both participants reflected how common techniques can be used properly. As a whole, both participants' use of the formative assessment techniques is aligned to suggestions and recommendations by experts in the field of assessment. These include:

1. Formative assessment techniques should be integrated as part of the process in T&L to actively create interactive situations in the classroom (Bell & Cowie,

2000). The findings of this study clearly show that formative assessment can be ongoing, dynamic and progressive in nature. These characteristics of formative assessment allow teachers to get accurate real time information on student's level of understanding. Informed decisions can then be taken to modify the T&L process to better address the need of the students to learn more effectively. During the study, both participants readjusted the amount of time allocated for different stages of their lessons based on information derived from the formative assessment activities. This was to help students understand the lesson better.

2. Oral questioning is suitable to be used to help convey the concept and subject matter more effectively, attract the attention of students, check students' understanding, check students' background and general knowledge, and help students to link prior knowledge to the new knowledge being presented (Cizek, 2010; Harlen, 2007). Oral questioning techniques can also be used to facilitate successful implementation of other techniques. In this study, the use of oral questioning, apart from a formative assessment technique in its own right, also helped support other activities to help students think more thoroughly in completing the tasks given through other assessment techniques such as exercise, seatwork and homework.

   One of the many advantages of the oral questioning technique is its ability to provide information on students' level of understanding quickly and efficiently. The questions used can be prepared earlier or created on the spot to suit the need of the teacher, the level or ability of the students, or the type of information desired to be obtained. The technique is also easy and suitable to be implemented at all stages of the lesson.

3. Seatwork techniques can be used to train students to satisfactorily master geography skills as set in the learning objectives (Scherrer, 2007).

4. The exercise technique provides information on students' understanding and train students to be more focused, reflective and deeper in their thinking to improve their learning (Black & Wiliam, 1998). It is also helpful as a means of enrichment to enhance their learning. Questions can be set to challenge students cognitively to help improve their performance, as well as to gauge their understanding of the subject more accurately.

5. The observation technique is an additional technique used by teachers to get information on students' understanding which can be used to modify the teaching and learning process where necessary (Black & William, 1998; Harlen, 2007; Scherer, 2005). Similar to the oral questioning technique, observation is capable of providing accurate real time information on the student's level of knowledge and understanding of the subject being presented. As was demonstrated in the study, observation is most flexible and can be conducted at all times for any intended purpose. For example, observation to gain information on students' behaviour can be conducted while the students are involved in other activities such as seatwork and exercise while students' interpersonal skills and ability can be observed during group discussion activities.

6. Homework is given as an additional exercise for students to enhance their learning in the classroom (Xu, 2010). By giving homework, teachers can get information on the student's level of understanding of the subject, besides ensuring that the students would at least do revision of the content and concept they had learnt in the classroom.

IMPLICATIONS

This study shows the possibilities of applying formative assessment techniques soundly and appropriately. Application of formative assessment techniques must match the ability of the students and learning objectives to be achieved (Brookhart, 2010; Black & Wiliam, 1998). Many teachers are "scared off" by the mere mention of formative assessment, associating it with something complex and difficult to implement. The findings of this study clearly shows this not to be the case. The study has demonstrated how the two participants have appropriately used the information to make decisions on the T&L process. They re-taught, demonstrated, discussed, and gave extra exercises to enhance the students' learning and skills. Teachers must act wisely to modify the T&L process based on information derived from the use of formative assessment techniques to help improve students' learning and understanding (Brookhart, 2010). Formative assessment techniques provide information on students' current needs and performance compared to the specified learning standards (Brookhart, 2010). This information allows teachers to make informed decisions and take actions to further enhance student learning (Brookhart, 2010).

Clearly, formative assessment is not only easy to implement, it also helps to provide valuable information on students' needs and performance which allows teachers to make the necessary adjustment to the T&L process in order to help students learn more effectively. Efforts should therefore be intensified to explain to teachers the concept and advantages of formative assessment. Teachers should be encouraged to attend courses and seminars designed to expose them to the concept and implementation of the formative assessment techniques in the classroom. Hands-on experience should be emphasized to make sure teachers are able to integrate formative assessment activities into the T&L process in the classroom.

Another important issue that must be given due consideration is how and to what extent teachers make use of the information derived from the use of different formative assessment techniques to help them with the teaching process. It is no use implementing all the different techniques in the classroom unless the information derived from the exercise is optimally utilized to facilitate the enhancement of students' learning and understanding. This is a challenge to teachers' ability to take reflective measures; to perform reflection in action to accommodate new information deemed necessary to help students learn better. They must be able to use the information effectively to change or modify their teaching and learning process on the spot if they consider such action is necessary to help students learn more effectively. Where possible, teachers should be exposed to more professional development courses tailored to address this need.

This study addresses the implementation of formative assessment in the subject of Geography. Further studies should be conducted on the very same topic in the context of other subjects especially in the field of social sciences to get a wider understanding of the use of formative assessment techniques in the classroom. It is also proposed that the data collection method is extended to the use of a questionnaire to get more

information on formative assessment techniques used by teachers. This should contribute to more variety and innovative use of formative assessment techniques to help enhance students' performance. This is important as studies conducted in other countries have proven that formative assessment has a positive impact on students' learning (Black & Wiliam, 1998).

REFERENCES

Abd. Murad Salleh. (2003). Proses Penganalisisan Data Kajian Kes Secara Kualitatif. Paper presented in *Seminar Penyelidikan Kualitatif: Teori dan Praktis*. Kuala Lumpur, 10 October 2003.

Black, P. & Wiliam, D. (1998). *Inside the Black Box: Raising Standards Through classroom Assessment.* London: School of Education, King College.

Bell, B & Cowie, B. (2000). The Characteristics of Formative Assessment in Science Education. *Science Education,* 85, 536–533.

Brookhart, S. M. (2010). *How to Assess Higher-order Thinking Skills in Your Classroom*. Alexandria, Virginia: ASCD.

Brookhart, S. M. (2007). Expending Views About Formative Classroom Assessment: A Review of the Literature, in McMillan J. H (eds.). *Formative Classroom Assessment: Theory into Practice.* (pp 43–62). New York: Teachers College Press.

Cizek, G. J. (2010). An Introduction to Formative Assessment: History, Characteristics, and Challenges. In Andrade, H. L & Cizek, G. J. (eds.). *Handbook of Formative Assessment*. (pp 3–17). New York:Routledge.

Chappuis, S & Chappuis J. (2008). The Best Value in Formative Assessment. *Educational Leadership,* 65(4), 14–19.

Fisher, D. & Frey, N. (2010). *Checking For Understanding: Formative Assessment Techniques for Your Classroom*. New York: Association for Supervision and Curriculum Development.

Harlen, W. (2007). Formative Classroom Assessment in Science and Mathematics. In McMillan (eds.) *Formative Classroom Assessment:Theory Into Practice*. (pp 116–135). New York: Teachers College Press.

Marohaini Yusoff. (eds.). (2004). *Penyelidikan qualitative: Pengalaman Kerja kajian Lapangan.* Kuala Lumpur: Penerbit Universiti Malaya.

Pinchock, N. & Brandt,.W. C. 2009. Connecting Formative Assessment Research to Practice: An Introductory Guide for Educators. Learning Point Associates. Retrieved from http://www.learningpt.org/pdfs/FormativeAssessment.pdf on 11 October 2010.

Scherer, M. (2005). Reclaiming Testing. *Educational Leadership,* 63(3), 9.

Stiggins, R. J. (2001). *Student-Involved Classroom Assessment*. Third Edition. Upper Sadler River: Merrill-Prentice Hall.

Stiggins, R. & Chappuis, J. (2006). What a difference a word makes. *Journal of Staff Development*, 27(1), 10–14.

Othman Lebar. (2009). *Penyelidikan Kualitatif: Pengenalan kepada Teori dan Metod*. Tanj0ng Malim: Penerbitan Universiti Pendidikan Sultan Idris.

Xu, Jianzhong. (2010). Homework Purpose Scale for High School Students: A Validation Study. *Educational and Psychological Measurement*, 70(3), 459–479.