‘Theories-of-Action’ of Primary Science Teachers on Assessment Literacy

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Abstract
Teachers’ assessment literacy is important to guide teachers through the challenges of assessment in the classroom. Assessment literacy occurs when the theoretical assessment knowledge of a teacher is well developed and does not differ from what is actually taught in the classroom. A study was conducted to investigate primary science teachers’ assessment literacy. In this paper, the underpinning theoretical framework for the study is based upon the ‘Theories-of-Action’ which is actually an organizational learning approach. This theory states that when what someone says and what they actually do differs, there exists a gap and then they are faced with a problem. The study speculated that there is a gap between primary science teachers’ theoretical assessment knowledge and their actual assessment practices. The study utilised a qualitative data collection technique which included teacher’s personal journals, classroom observations and interview sessions with teachers and students. This study revealed that teachers indeed have a gap between their theoretical assessment knowledge and actual assessment practices. The study also brought to light how teachers use ‘short term success’ or ‘long term success’ strategies to narrow the gap. It is concluded that teachers who used the ‘long term success’ route when confronted with a problem seem to be more successful with their assessment tasks.

Key words: Assessment literacy, feedback, theories-of-actions, formative assessment, espoused theory, theory-in-use

INTRODUCTION
Assessment literacy covers all aspect of assessment and beyond. Assessment literacy means that teachers must possess knowledge of sound assessment practices (Paterno, 2001), know the theories and techniques of different assessment methods, understand that the assessment task they have chosen is one of the best ways to enhance learning of their students (Stiggins and Chappius, 2006) and last but not least, show that one of the aims of assessment is that someone cares about the students’ learning (Brown, 2003). A teacher who is assessment literate would have even before entering his/her classroom,
started thinking about the assessment tasks and how these tasks would affect his /her students’ learning processes and how to enhance students’ understanding by providing appropriate feedback (Black and William, 1998a; 1998b; Guskey, 2005; William, 2006).

Teachers, on one hand have all their knowledge, theories and beliefs about why and how they should conduct their assessment which is in their mind (Leat and Lin, 2003) and on the other hand they have skills and techniques to implement these assessment practices. There is a possibility that when these two subsets of assessment literacy (theoretical assessment knowledge and actual assessment practices) are well developed and congruent with each other, it may be said that the teacher is assessment literate. Figure 1 shows a representation of an assessment literate teacher.

![Figure 1. A graphic representation of an assessment literate teacher [Researcher’s Interpretation based on Black & William (1998a; 1998b); Stiggins (2001) etc.]](image)

The oval shape represents all possible ideas/ knowledge and actions of assessment literacy under different and various circumstances; it can be said that it is not possible for a teacher’s assessment literacy to cover all possibilities. For example, a teacher teaching primary science is considered assessment literate at the primary stage but if the same teacher was asked to teach a pre-university programme, it cannot be assumed that the teacher would still be successful at teaching the latter course and therefore might not be assessment literate. As the knowledge of assessment is ever evolving, it is safe to say that teachers cannot have all the assessment literate qualities at any one time. A teacher might not have all the assessment literacy characteristics but as long as the teacher is exhibiting most of the characteristics, it can be assumed that the teacher is assessment literate. The arrowed-line in Figure 1 represents that all the teacher’s theoretical assessment knowledge can be fully translated into practice by the teacher and vice versa. The two big circles show that the teacher has well developed assessment literacy knowledge.

However, from the researcher’s extensive reading, it was seen that there is a possibility that problems arise when these two subsets of assessment literacy (theoretical assessment knowledge and actual assessment practices) are not well developed and congruent with each other.
knowledge and actual assessment practices) are not parallel and therefore a gap is likely to exist. The gap between the two subsets of assessment literacy can happen under three circumstances: first, the teacher’s theoretical assessment knowledge is deep but he/she lacks the knowledge to implement these ideas into practice; second, the teacher’s theoretical assessment knowledge is shallow but the teacher is carrying out his/her assessment practices that are congruent with the current theories of instruction and learning; and third, which is the most critical situation is when the teacher’s theoretical assessment knowledge is shallow and therefore the teacher does not take interest in his/her actual assessment practices.

One of the reasons for the differences between the teachers’ theoretical assessment knowledge and their actual assessment practices is because teachers are almost never trained to develop and use assessment in ways that adhere to standards of excellence (Crooks, 1988). As a result, we cannot count on classroom assessment to accurately reflect students’ achievement. If the teachers are assessment illiterate, then teachers will not be competent to conduct assessment tasks that address the problems that their students are facing (Mertler, 2005); it is likely then that assessment is solely used to rank students or to punish students rather than to help them achieve their learning goals (Stiggins and Chappius, 2005a).

The underlying reason for students’ failure to learn effectively is because assessment is isolated from the learning process that can actually help students to learn (Black and William, 1998a; Shepard, 2000). The more traditional formal assessment setting requires some permanent form of writing or artefacts because assessments were meant to be uniform and have a high inter-rater consistency (Ediger, 2003). This has helped to shape the beliefs of teachers about the nature of evidence and fairness in assessment (Bliem and Davinroy, 1997). Moreover, a teacher has at some point to switch role from that of a supporter of learning in formative assessment to an assessor of achievement in summative assessment. This has tension among some teachers (Harlen, 2005; Yorke, 2003).

OBJECTIVES

It has always been projected that what people know and what they do are actually very different. William (as cited in Osln, 2005) stated that “every teacher I talk to knows everything, I tell them. The question is how to do it.” Thus, teachers tend to have ideas or knowledge about their how classroom assessment practices should be but their ideas are not translated into practice. When this happens, teachers tend to feel frustrated. The researcher in the present study aims to examine if there is any differences between teacher’s theoretical assessment knowledge and their actual assessment practices. If it is shown to teachers that there is indeed a gap between their theoretical assessment knowledge and their actual assessment practices, it is possible then to extend an invitation for them to close the gap (Marland, 1995; Thompson, 1992).

Generally the study aims to investigate the assessment literacy of teachers which consists of their theoretical assessment knowledge and actual assessment knowledge. This study
will examine if there are any differences between teacher’s theoretical assessment knowledge and their actual assessment practices and seek to answer the following research questions:

1. What is the extent of the theoretical assessment knowledge of Year 5 primary science teachers?
2. What are the actual assessment practices of Year 5 primary science teachers?
3. Does a gap exists between the Year 5 primary science teachers’ theoretical assessment knowledge and actual assessment practices?

The theoretical framework for this study was based on the model of ‘Theories-of-Action’ by Argyris and Schön (1974). This theory was originally used in organisational learning but was modified accordingly for this study. This theory mentions two theories: espoused theory and theory-in-use. The espoused theory is the theory that people use when they are asked to explain their actions, aims or intentions. ‘Theory-in-use’ is how they actually carry out that action. These two theories may or may not be congruent. Argyris (1982) states that when the espoused theory and theory-in-use are congruent, effectiveness is ensured.

To fully appreciate the theory-in-use, a Model of Processing which contains three elements as proposed by Argyris and Schön (1978) is put forward: governing variables, action strategy and consequences. Figure 2 shows the Model of Processing.

![Figure 2. Model of Processing developed by Arygris and Schön (1978)](image)

The governing variables are a set of variables that individuals try to keep within acceptable limits in an organization. The governing variables are co-dependent in that any one action is likely to have an impact upon a number of variables. Action strategies are therefore the moves and plans used by individuals to keep their governing values within the acceptable range. Lastly, consequences are outcomes as a result of an action (Argyris and Schön, 1974). When the consequences of a strategy constitute actually what the individual wanted/ intended, then the theory-in-use is confirmed because there is a match between intention and outcome. This means that no gap exists between the espoused theories and the theory-in-use (Argyris, 1982).

However, if there is a mismatch between the intention and outcome, error will be detected. This mismatch could have happened because a wrong strategy was used or there was error in the individual’s governing values. When there is a mismatch between intention and outcome, learning involves detection and correction of error. Normally when something goes wrong, individuals will look for another strategy that will address the error and work
within the governing variables (see A in Figure 3). This is identified as single-loop learning. The emphasis here is on “techniques and make techniques more efficient” (Usher and Bryant, 1989, p. 87).

An alternative and better response is to question the governing variables themselves and to subject them to critical scrutiny (see B in Figure 3). This is known as double-loop learning (Argyris and Schön, 1974). Here, the assumptions behind ideas and beliefs are confronted (Argyris, 1982). Because theories-of-action were put forward for organizational learning, double-loop learning appears more difficult to achieve; this is because individuals may have to confront relevant information that is inhibited in an organization (Smith, 2001). Figure 3 shows how single-loop and double-loop learning occurs in the theories-in-use.

For purposes of this study, the researcher modified the three components to ‘theoretical assessment knowledge’, ‘assessment and feedback’ and ‘students’ understanding’ respectively to better represent this study. This is because governing variables (see Figure 3) are a set of variables that individuals attempt to keep within acceptable limits in an organisation and are akin to the ideas, beliefs and knowledge that teachers have about assessment to be able to execute the actual assessment practices. In the model proposed by Argyris and Schön (1974), action strategies are therefore the moves and plans used by individuals to keep their governing values within the acceptable range. This may be modified to teachers’ taking action to preparing assessment tasks and giving feedback to their students. There are a variety of assessment tasks and different ways that a teacher can provide feedback to his/her students. These actions taken by the teacher are basically to enhance students’ understanding of the subject matter. Thus, the researcher feels that it is appropriate to change the consequences (Figure 3) of students’ understanding.

As a conclusion, teacher’s theoretical assessment knowledge would affect teacher’s practices (assessment task and feedback) and these assessment practices can be
considered as scaffolding (Vygotsky, 1978) to enhance students’ understanding (see d in Figure 4). The researcher opines that when the teacher’s theoretical assessment knowledge and actual assessment practices are not congruent, a gap may exist and students’ understanding is compromised. An ‘internal conflict’ mushrooms inside the teacher when any assessment practice the teacher conducts does not enhance his/ her students’ understanding (Leat, 1993; Willis, 1993). Generally, most teachers may just give more assessment tasks and continue giving narrowly-defined feedback (Black et al., 2003) in order to close the gap. This is identified as ‘single-loop’ learning, but for purposes of this study, the researcher replaced the ‘single loop’ learning with the term ‘short-term success’ (see e in Figure 4). This is because providing more assessment tasks that involves low-level thinking skills or giving evaluative feedback does not enhance student’s learning (Black et al., 2003).

Figure 4. Theoretical assessment knowledge and how it affects teachers’ practices and students’ understanding [Interpreted by researcher from Argyris and Schön (1974)]

However, when there is a mismatch between teacher’s theoretical assessment knowledge and actual assessment practices and when there is dissatisfaction within the teacher’s self as to why his /her actions does not give the desirable outcome of enhancing students’ understanding, the teacher may take the initiative to modify his/ her theoretical assessment knowledge and the actual assessment practices (see f in Figure 4) to be congruent with each other. When this happens, the researcher feels ‘long-term success’ ensures [Argyris and Schön, (1974) used the term ‘double-loop’ learning]. Teachers can do several things to be more successful at preparing more quality assessment tasks and providing the students with task orientated feedback that feed forward their students’ understanding. They can (i) confront and improve their theoretical assessment knowledge such as using their metacognitive skills (Israel et al., 2005; Leou et al., 2006; Thomas, 2006); (ii) increase their knowledge on the subject matter (Harlen, 1996; Torrance and Pryor, 2001); (iii) improve their pedagogical skills (Maclellan, 2004; Shulman, 1987); (iv) communicate their frustrations...
and fallouts with other teachers or experts (Bunting, 2006; Ross and Bruce, 2007); and (v) question one’s beliefs (Roth and Tobin, 2001; Schraw and Olafson, 2002). When teachers improve these factors mentioned above, then the teachers’ theoretical assessment knowledge becomes more developed and they become more confident in preparing quality assessment tasks and providing pathways to ensure that their students’ understanding is enhanced.

METHODOLOGY

Sample
The subjects in this study consisted of five Year 5 Science teachers. The academic qualifications, teaching experiences and training of the teachers varied. However, due to the limitations of this paper, the researcher only concentrated on two teachers exhibiting extreme behaviours; Hafiz (pseudo name) showing huge gaps between his theoretical and actual assessment practices and Alif (pseudo name) showing well-developed theoretical and actual assessment practices. The other teachers lay in a continuum between these two teachers. Hafiz is currently doing his Masters in Mathematics Education and has eight years of experience teaching Year 5 Science; Alif was teacher-college trained and has three years experience teaching Year 5 Science. Both teachers had not attended any course on assessment recently.

Data Collection
This study utilised a qualitative data collection technique. The instruments used in this study included a teacher’s journal, a classroom observation checklist to help the researcher with the classroom observations, and interview sessions with teachers and two students of each teacher in this study. Generally, the teacher’s journal was used to obtain data of the theoretical assessment knowledge of the teachers and the classroom observations to describe actual assessment practices of the teachers.

The teacher’s journal consists of two sections: Section A and Section B. Section A is mainly the teachers’ ideas on assessment and feedback. Questions such as ‘what do you understand by the term “assessment”? ’ or ‘how does assessment influence your teaching?’ are asked in Section A. Section B consists of questions that ask teachers how they feel, or what influences them as they prepare their written tests. As the teachers in Malaysia have to at least prepare four sets of written tests in a year for the classes they are teaching, the researcher felt that it is important to gauge the process the teachers go through during the preparation of a written test. The grades of these papers would be used to gauge the students’ understanding of the subject matter; these grades would also be used to communicate the learning achieved by the students to all parties concerned with assessment and those aspects which warrant their attention. The teachers were given the teacher’s personal journal at the beginning and were asked to fill in their ideas/thoughts about assessment. This data was analysed for the theoretical assessment of knowledge.

The researcher conducted five classroom observations for each teacher in this study. The teachers in this study were Year 5 primary science teachers. When the researcher was
doing the observation all of the teachers were teaching the theme on ‘Energy’. During classroom observations, the researcher was a non-participant observer. The researcher used a classroom observation checklist which had three columns; always, seldom and never. Items like wait-time, types pf feedback, types of exercises and questioning techniques were listed which were considered important components of assessment literacy (Dillon, 1990; McMillan et al., 2002; Sadler, 1989; Smith and Higgins, 2006). The researcher ticked the appropriate column that best reflected the teacher’s practices. Along with the classroom observation checklist, the researcher also audio taped sessions of the lesson where interaction between teacher and students was active. Document analysis was done on the students’ notebooks and work books to see the type of exercises and the written feedback the teacher had given his/her students (Creswell, 1998; Merriam, 1998). These data from the classroom observations and document analysis were considered as the actual assessment practices.

The interview sessions were done to triangulate the data obtained from the teacher’s journal classroom observation. The interviews were open-ended as the researcher probed to get insights of what was written in the journal as well as to ask for explanations as to why certain actions were undertaken in the classroom. The students were interviewed to clarify some of the teacher’s actions from the students’ point of view.

The audio tapings of the classroom observations as well as the transcribed verbatim interview sessions were shown to the teachers for member checking. Data analysis consisted of coding emerging themes of the theoretical assessment knowledge and actual assessment practices that were arranged into a matrix. A description of the data analysis of the data follows.

Analysis
The actual study elicited eight different ideas of theoretical assessment knowledge of the teachers. Due to the space constraints of this paper, only two ideas of assessment literacy will be discussed: (i) assessment as a product or process, and (ii) feedback strategies.

DISCUSSION
Discussion for this paper comprises a description of the teachers’ theoretical assessment knowledge, followed by their actual assessment practices. Next, the researcher will discuss the gaps (if any) that exists between the theoretical assessment knowledge and actual assessment practices individually and lastly the researcher will look into how the teachers tried to narrow these gaps either through short term or long term success.

Hafiz’s theoretical assessment knowledge showed that he knew of two types of assessments, formative and summative. He even knew that one of the assessments was used daily to help students with their learning and the other for grading purposes. However, Hafiz got the definitions mixed up. For example, he said that formative assessment was used for grading and summative assessment was used to help students’ with their learning.
He also mentioned that assessment data could be used to assess students’ level of understanding on a particular topic. He said that this can be done by looking at the students’ grades; if students get 80% and above, his teaching has been successful. According to Hafiz, theoretical assessment knowledge has two divisions: assessment ‘for grading’ and assessment ‘for learning’ and he used scores or grades to gauge his students’ understanding. However, his actual assessment practices deferred from his theoretical assessment knowledge. In classroom observations, Hafiz was seen asking his students questions and if they got it right, he did not trigger further discussions to elicit students’ understanding. Hafiz may not realize that students could mimic answers from the textbooks and have only a shallow understanding of the subject matter. His actual assessment practices rarely called for individual student explanations or clarifications or even up-take students’ answers. Hafiz practice of assessment ‘for grading’ totally ignores student differences (Birenbaum et al., 2006).

Obviously Hafiz’s theoretical assessment knowledge is more developed, having both the idea for assessment ‘for grading’ and assessment ‘for learning’ but his actual assessment practices showed Hafiz to be focusing more on the ‘for grading’ aspect. Therefore, there is indeed a gap that exists between Hafiz’s theoretical assessment knowledge and actual assessment practices. However, Hafiz did not seem to show any dissatisfaction because perhaps what he is doing is partially reflective of his theoretical assessment knowledge. If teachers do not see this as a problem, they would continue doing what they have been doing.

Alif’s theoretical assessment knowledge sees assessment as a tool to gauge the knowledge and skills that the students have acquired. He also said that he looks at assessment as a process that occurs throughout the learning process where teachers ask the students questions. Since Alif sees assessment as an activity that involves interaction between...
teachers and students, Alif’s actual assessment practices mirror these ideas. In class, Alif is seen constantly interacting with his students, asking them questions, holding discussions and up-taking students answers to name a few. As an example, when Alif taught the topic on “Expansion and Contraction”, he asked his students to stand up first and then to look at the floor. He asked them what they saw and they said ‘gaps’. Alif asked the students why there should be ‘gaps’, and the students answered ‘so that the tiles can expand.’ At this point, a student said something that was not loud enough to be heard by Alif. Alif made a point to go to the student’s place and ask him to repeat. Alif then said, “Ah…very good. When do the tiles expand; on hot or cold days?”

Observing Alif’s theoretical assessment knowledge, it mirrors his actual assessment practices; thus there exist no gaps between his theoretical assessment knowledge and actual assessment practices. His students, on being interviewed, said that they were happy with their teacher and because Alif does not detect any problem he continues to do what he is doing.

![Figure 6. Alif’s theoretical assessment knowledge and his actual assessment practices on assessment](image)

When it comes to the process of giving feedback, there are many ways that a teacher can correct a student’s mistake. When Hafiz was asked what he would do if his students did not understand or had misconceptions, Hafiz said that he would ‘provide them with the right answers, explain to them and/or may be do a demonstration or a simple experiment’ to show his students the correct answers. He also said that he uses the Teaching Courseware but he would stop the CD and explain to the students when they do not understand the subject matter. In reality, Hafiz had the Teaching Courseware on continuously for 20 minutes without any interaction amongst the teacher and students. The Teaching Courseware would ask a question and the students would answer the questions themselves as they watch the CD. The students get bored because of the monotony of the lesson. Moreover, the teacher’s command of the English Language was weak and he tended to stammer when speaking English. He also spoke very softly and
students at the back of the classroom could not hear him. The researcher observed that students were talking amongst themselves and even observed a boy doing his Mathematics work. These practices will not enhance students’ understanding on the subject matter. From classroom observation, the researcher could immediately notice that from the noise and the mannerism of the students in Hafiz’s class, the students were not paying attention.

Again, Hafiz theoretical assessment knowledge is more developed that his actual assessment practices. The gap exists because in theory he had mentioned that he would provide an explanation or do a simple experiment but in reality he does not seem to carry out these processes. His students’ complained that he does not explain very well and that they feel frustrated. Hafiz did not use his metacognitive skills or his pedagogical knowledge to make his lessons more interesting. In fact, Hafiz did not even communicate with his students to find out if they had any problems with his lessons. Hafiz did not seem to understand that students will not be able to learn on their own if there is no one to help them to overcome their ‘Zone of Proximity Development’ (ZPD) (Vygotsky, 1978). This may be because Hafiz finds it difficult to match his more advance theoretical assessment ideas with the skills needed to actually carry out the practices. As Kennedy (1991, cited in Marshall and Drummond, 2006) puts it, it is a ‘problem of enactment’.

*Figure 7. Hafiz’s theoretical assessment knowledge and his actual assessment practices on feedback strategies*

The explanation for the existence of the gap between his theoretical and actual assessment practices could be because Hafiz lacks a good command of the English Language which makes it rather difficult for his to explain the subject matter to his students. The researcher also postulates that Hafiz might have a rather shallow understanding of the subject matter in Science as his basic Bachelor’s degree was in Mathematics Education and he is currently
pursuing his Masters in Mathematics Education. Hafiz should realize that since he has been teaching science for 8 years now, he should try to develop his content knowledge or pedagogical skills in teaching of science if he wanted to help his students to enhance their understanding. Thus, when Hafiz was confronted with a problem, where language or subject matter could be the reason for his lack of assessment literacy; Hafiz chose the ‘short term success’ to solve that problem by enrolling in the Masters in Mathematics Education programme. Instead he should have enrolled in a language course or pursue his Masters in Science Education as these actions would have been considered as ‘long term success’ because these actions would help him to help his students understand their subject matter better. Hafiz did not try to improve or bring his classroom practices closer to his theoretical assessment practices. The gap in Hafiz’s case remains a gap.

Alif said that when his students do not understand what he had taught them, he would first approach his students and ask them to explain what they think the question is asking of them. He feels that many a times, the students do not read the questions carefully. Alif added that he would not embarrass the students if they do not know the answers. Thus, Alif creates a classroom environment where students are free to express their ideas and thoughts. When Alif made a mistake where he had spelt the word concrete wrongly (Alif spelt it as ‘konkrit’), a student put up his hands and told the teacher his mistake. Alif then thanked the boy and asked his students how the word should be spelled. Alif had showed his students that the learning process does not have to be ‘cut-and-dry’ but mistakes are part and parcel of the process. So, when the teacher did revision on the topic ‘Energy’ and the students were asked to give examples of renewable energy, a student answered “biomass”. When the teacher asked what biomass was, the student confidently answered “animal shit” and even though the whole class was laughing, all was taken as a learning episode and was not evaluative.

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**Figure 8.** Alif’s theoretical assessment knowledge and his actual assessment practices on feedback strategies

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Alif shows characteristic of an assessment literacy person. A criteria of an assessment literate person, is to show the students that someone cares for their learning process (Brown, 2003) and will not judge them. Alif puts in much effort in ensuring that his students feel safe when they are struggling to learn new concepts. Alif can provide reasons and explanation as to why he does not embarrass his students. He believes that by not embarrassing them he is showing them that he is here to help them in their educational journey. He uses the long term success route where he confronts his metacognitive skills, communication skills and pedagogical skills to make sure students are not afraid of him and make sure that his students understand him. He mentioned that if he were fierce and his students did not answer his questions, he will not know whether it is because they are afraid of him or because they really do not understand the science concepts that are being taught. Thus, research has shown that if learning is viewed more as a social event, then the link of assessment to learning could be strengthened and this process can enhance students’ understanding of the subject matter (Bell and Cowie, 1999 as cited in Cowie, 2005).

Another aspect of assessment is providing feedback for written work. Alif said that when he had collected his students’ work and had marked them, he found that his students had not done their corrections after he had returned the books to them. When students do not rectify their problem, the learning curve is stunted (Black and William, 1998a; Guskey, 2005; Sadler, 1989; Smith and Higgins, 2006). Alif was faced with a problem where his present action did not enhance his students’ understanding. When he was confronted with the problem, he chose the ‘long term success’ route to overcome the problem. He used his metacognitive skills, pedagogical skills and subject matter knowledge to hold discussions that provided pathways for his students to take an active role in their learning progress. In these discussions, he provided constructive feedback (Black and William, 1998a, 1998b; Hattie and Timperley, 2007) such as asking students to explain what they had said, took up his students’ answers and probed for clarifications, and finally asked his students to obtain information from their peers. These practices were observed during Alif’s lessons. As Stiggins (2004) puts it ‘maximum learning comes from productive learning between teachers and students’. Studies have shown that the way Alif teaches provides ample venue for students to learn. By holding these discussions, students not only correct their mistakes but also ‘when a student answers certain questions, other students who did not know the answer would learn from their friends’ (Alif, interview). Alif has provided his students with ‘guild knowledge’ where the questions he posts to the students sets the students’ thinking and understanding further by asking for clarification and showing students what constitutes a good answer and how it may be reported (Marshall and Drummond, 2006).

Obviously, Hafiz and Alif are two extremes; Alif exhibits minimal gap whereas Hafiz shows visible gaps between the two components of assessment literacy. Table 1 shows the differences between Alif’s actual assessment practices and those of Hafiz’ with what was in-between at giving feedback.
CONCLUSION
Hafiz looks at assessment as a product whilst Alif sees assessment as a process. Popham (2008) mentioned that assessment has undergone a paradigm shift with assessment now being seen as part of the teaching and learning discourse. This means that teachers must have the knowledge and skills to use assessment during the teaching and learning process and not wait at the end of the course to grade their students (Black and William, 1998a; Stiggins, 2001; Stiggins & Chapius, 2005a). Moreover, when teachers look at assessment as a process, the feedback that they provide seem to be more task-orientated (Sadler, 1989) which actually helps enhancing their students’ understanding. This study points out that if the teacher does not see any issue as a problem, most likely they would only use their short term success route which will not enhance their students’ understanding. This study is important because implicit ideas have to be brought out and shown to the teachers how they can match their ideas on assessment and how to actually provide feedback. Alif seems to have congruent theoretical assessment knowledge and actual assessment practices as he is seen to use more of ‘long term success’ routes when confronted with a problem.

REFERENCES
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