Assessment for Learning (AfL) Approaches – How we know that they know

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Abstract

After a review of some literature pertaining to Assessment for Learning (AfL), this paper examines the purpose and value of AfL unique to our school. This paper is also a critical inquiry into our own practices as Science and English teachers and it includes a description of a suite of strategies we used to assess our students' understanding at various points of a lesson.

We believe that AfL is a critical component in teacher instruction and it is a formative process where teachers can adapt their teaching to better cater to the needs of the students. But how can teachers ascertain students' understanding without implementing tests and quizzes? How can we ask questions without getting choral responses? How can we give opportunities for students to articulate their misunderstandings? This paper attempts to offer solutions to these questions.

Based on the collective results of our findings, we argue that AfL, when enacted in the right spirit, can lead to teachers making more informed and deliberate instructional decisions. AfL also has the potential to nurture learners who are less helpless and who take ownership for their own learning.

Keywords: formative assessment; forward-feeding feedback; student achievement

Introduction

Assessment for learning, or formative assessment, as some may know it, has been gaining momentum in recent years. In Singapore schools, traditional assessment methods are usually associated with standardised tests and major examinations. In view of the above, the main purpose of assessment seems to be preparing our students for examinations. In other words, we want to assess how much content and knowledge they have absorbed. If students are like sponges, then examinations are the weighing scales – to determine which sponge absorbed the most water. The sponge with the highest value on the scales would then be hailed the best sponge.

What, then, is "Assessment for Learning (AfL)" or formative assessment? Black and Wiliam (1998) position "formative assessment" as one which gathers evidence of students' learning. This evidence is then used to adjust teaching practices to better cater to the needs of the students. But what role does such an assessment play in traditional schools whose main purpose is to prepare their learners for the high-stakes examinations?

Perhaps AfL and learning for high-stakes examinations need not be mutually exclusive. If the imagery of the sponge could be expanded to include AfL, then perhaps the practices would include methods to ascertain how the properties of the sponge can be exploited to ensure it absorbs the most water possible. It would also probably look into alternative ways to assess the sponge. Instead of just weighing how much water it can absorb,

the evaluation can be expanded to discovering how much water it can retain even after it has been taken off the scales. Perhaps it could also be further expanded to honour the other strengths of the sponge – probably its oil-removing properties.

AfL is really about informing learning and teaching. It is about making learning meaningful to the ones learning. As such, the inclusion of AfL practices must be deliberate and purposeful. This paper serves as a critical inquiry into our AfL practices as English Language and Science teachers and it will also suggest how teachers can develop AfL practices.

Literature Review

What is AfL?

Assessment for learning is primarily concerned with the progress of the learner. The progress is intentionally monitored and improved through feedback. Feedback on assessment tasks should give learners assistance on how to improve, and each pupil must be given help and an opportunity to work on the improvement (Black & Wiliam, 1998). Teachers must thus promote an interactive culture in the classroom so that students are receptive to the feedback. The evidence gathered from the assessment tasks is also feedback for the teachers – who will then vary their instructional methods to plug the learning gaps unravelled through the assessment tasks. When framed and situated in view of targets and the learning goals, feedback can be made more meaningful when used to track progress so that learners can move on to the next higher level of understanding or task complexity.

What should be assessed and how?

Assessment tasks and feedback need to be situated within the learning aims because that will justify the design of the tasks and feedback. While grades and scores are important, it is equally important to ensure that our learners are given opportunities to articulate their evolving understanding of the learning aims. This understanding can be communicated through verbal or written means or through actions. But the crux to deciphering the understanding of the learners lies in the observation of the ways students communicate and display their state of understanding (Black & Wiliam, 1998). Thus, the importance of an interactive culture cannot be undermined. Teachers must actively seek to give students opportunities to express their learning through various means. It is also important to note that understanding need not be confined to the understanding of content knowledge. As such, it is useful if the learning aims are clearly delineated because then, the assessment tasks can be selectively decided and the feedback can be crafted to address the aims. This is in sync with the notion of "consequential validity" mooted by Stobart (2012).

How can AfL inform and improve teaching & learning?

Highly effective AfL practices can boost student achievement and as they develop into more competent and confident learners, their intrinsic motivation kick in and students become more enthusiastic about their learning (Moss & Brookhart, 2009). This puts them in good stead to eventually learn beyond what is required in the syllabus and with the acquisition of the skill of learning, students can move on to become critical and reflective thinkers, poised for life-long learning. In view of the more immediate learning aims, the timely and forward-feeding feedback proposed by Moss and Brookhart (2009) serves to give students clear directions on how to improve and move from their current state of understanding to the next higher level.

AfL cannot be regarded as an isolated event. Instead, it is a process where learners must have the opportunity to use the given feedback to improve their understanding. Understanding evolves as a result of continuous inquiry and re-thinking of knowledge and teachers must design their lessons to provide for that (Wiggins and McTighe, 2004). In order to design such feedback-based lessons, teachers must develop a repertoire of approaches so that they can tailor lessons to meet the needs of the learners. Evidence collected should fuel teachers' reflections to reform classroom practices (Torrance & Pryor, 2001). Thus, this fluid process of obtaining feedback and working on feedback (by both students and teachers) can result in improvement for both parties involved.

How can AfL empower learners through self-assessment?

The learning aims in a classroom should not be just the delivery of content and the ascertainment of students' understanding of the content. Rather, the learning aims should also be to prepare students for a "lifetime of assessing their own learning" (Boud, 2006). Students should learn to understand standards so that they can monitor their own learning and be capable of planning and carrying out the next action to further their own understanding and construct meaning independently. In other words, learners become less helpless and are poised to be able to learn for life. AfL practices incorporating self-assessment strategies can help students achieve this metacognitive thinking about their own learning and empowers them to be able to chart and carry out their own learning.

Our AfL Practices

Dip-sticking activities to determine students' level of understanding

To ascertain our students' level of understanding, we make use of quick dip-sticking activities to enable them to respond to us while avoiding choral answers where students answer in one voice and teachers may find it difficult to identify who is responding. These dip-sticking activities can be likened to the "thermometer-check" in the classroom and teacher take quick readings to find out students' level of understanding. Activities can include

- *"Traffic Light cards".* Red/Orange/Green cards are given to the students and students can raise these cards to show how confident they are about their understanding.
- **"ABCDTF cards"**. There are used to signal their chosen response to multiple choice questions.
- **"Mini whiteboards".** These are provided to students and students jot written responses on the whiteboards before raising their boards to show their answers
- **"1-5 Fingers".** Students raise their fingers to show level of understanding and confidence about the new knowledge.
- **"Socrative".** This is a web-based classroom response system which enables students to type in their responses. This web-based tool ("Socrative") is popular with teachers and students because it allows students to respond to multiple-choice and open-ended questions by choosing their desired option or typing their answers. Their responses will be promptly displayed on a screen and can be used as the basis for discussion. This helps in checking the pulse of the students' understanding. This tool was used to pose a variety of questions to students and address common misconceptions based on the responses received. Checking of understanding took place on the spot and the state of understanding the students possess was assessed. A report can be downloaded from the tool immediately after students have answered a quiz and the class can review their responses. Instruction can then be immediately tailored accordingly by

elaborating on the questions which most students answered wrongly. Explanations can also be pre-entered into the quiz and when the student answered a question incorrectly, he would be able to read the explanation and learn why he is wrong even before the questions are discussed with the class.

This tool, and the others described, enables the provision of forward-feeding feedback (Moss & Brookhart, 2009) almost immediately. Furthermore, as subsequent teaching was based on students' responses, the instruction is immediately customised to suit students' needs. The novelty of the web-based tool ("Socrative") and its interesting interface serve as a bonus to catch students' attention and stimulate their enthusiasm.

Short Exercises to provide more information for more forward-feeding feedback

If dip-sticking activities are like thermometers to give us just a quick pulse check on the level of students' understanding, then these short exercises which we do with the students would be a more detailed examination of their understanding. In this way, teachers can get a better idea of why students understand knowledge in a certain way or if students have made meaning out of the new knowledge acquired. These short exercises also provide opportunities for teachers to tease out misconceptions that students may have. These activities include

- **Quick Writes.** Students do short summaries of a piece of text which they have read or of a new concept which they have learnt. At times, a few helping words may be given and students are expected to link the words together meaningfully.
- **Quick Draws.** Instead of expressing their understanding in the written form, students can sometimes be asked to draw a picture or a diagram to demonstrate understanding. They can even draw a mind-map which they can keep as a summary.
- **Exit Cards.** Students can use this activity to do a quick reflection of their learning for the day. Teachers can pose a variety of questions to facilitate this. Questions can range from getting them to articulate what they can remember of the lesson to what they found interesting or challenging. The questions can also invite students to indicate to the teacher some questions they might have about the lesson or some suggestions that can give to the teacher so that subsequent lessons can be improved.
- **Quick Quizzes.** These are short five-minute quizzes aimed to assess how much students have understood the previous lessons. It also serves as a less intimidating test to subtly remind students of the need for consistent revision.

Strategic Questioning

Deliberate and purposeful questions need to be skilfully crafted in order to accurately identify students' misconceptions or to scaffold students' articulation of their understanding.

Assessment Probes. For the purpose of identifying misconceptions, we propose using "assessment probes". These are multiple choice questions with the options purposefully crafted to include "distractors" which are research-identified misconceptions held by the students. The choice students make would give teachers an indication of their pre-conceived ideas, giving useful forward-feeding feedback which teachers can use to customise subsequent instruction to better cater to students' needs.

Questions can also be designed to assist students in making meaning out of new knowledge. For this purpose, we propose using the following strategies.

- **Focus questions.** These are key questions that frame the entire lesson or unit. Posed at the beginning of the lesson, they give students an idea of what is to come. These questions should then be revisited at the end of the lesson or unit and students' ability to answer these questions will be an indication of their understanding.
- **Journaling.** These questions should enable students to connect new knowledge with their prior knowledge and permit them to offer their thoughts on the content, thus personalising the learning for them. This technique, though more common in English lessons, can also be employed in the teaching of Science to help students connect content knowledge with their affective domain. When students are able to translate and connect scientific concepts to their personal experiences and beliefs, they are able to articulate knowledge in a new form. Ability to do so appropriately would also indicate how well they understand the new knowledge.
- **Hot seating.** This technique is used in English lessons to enable students to articulate their understanding of the characters in a story. In this activity, students answer questions from a character's perspective.

Rubrics – A way of communicating standards

Assessment also involves recognising standards and criteria and the making of judgements about quality (Boud, 2000). Thus, it is important for the students to know what is "good" and what they need to do in order to be "good". For this purpose, rubrics are important for communicating standards. For instance, in the teaching of the English Oral Communication examinations, rubrics are used to convey the requirements.

Based on the provided rubrics, the assessment criteria can be explained to the students to give them an idea of what is expected of them. This also provided a common language with their performance can be discussed. Even though the descriptors in the rubrics may give students a rough idea of what differentiates one level of competency from the other, it may not be adequate in illustrating what exactly they need to do. Hence, as suggested by Stobart (2012), exemplars should be given to help them decode the rubrics and descriptors and thus the level of competency required.
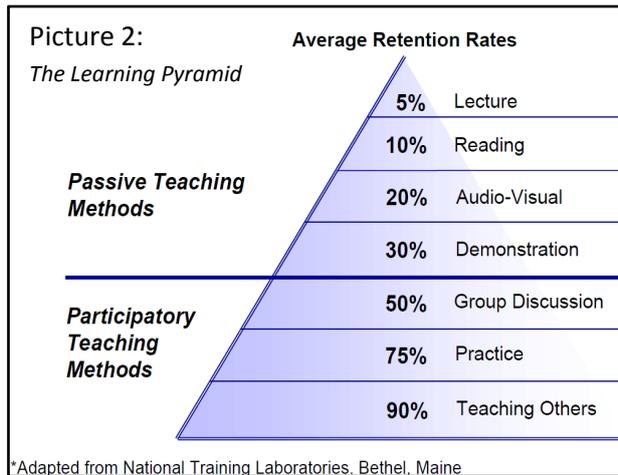
Similarly, students can create their own rubrics, in discussion with teachers, for informal assessments and classroom activities like a writing task or a project presentation.

Collaborative activities – Employing students as instructional resources for one another

When standards have been communicated, students can engage in an exercise where they can take turns being examiners and candidates to give their peers a score based on their performance. Again, based on the common language learnt from the rubrics, students posing as examiners would need to justify why they would give a particular score to their candidates. The exercise can end with the students doing a self-reflection of what they needed to improve on so as to meet their desired level of competency.

This use of a peer critique exercise can empower students to become coaches for one another (Leahy, et al., 2005). This way, students are compelled to thoroughly understand standards and they are also given the opportunity to articulate the standards in a language more intuitive to them, thus deepening meaningfulness.

Alternatively, in continuing to engage students as instructional resources for one another (Leahy, et al., 2005), the better students can be paired with the weaker ones in peer coaching to enable the students to learn from one another.

Picture 2:
The Learning Pyramid

Average Retention Rates

Passive Teaching Methods

5%	Lecture
10%	Reading
20%	Audio-Visual
30%	Demonstration

Participatory Teaching Methods

50%	Group Discussion
75%	Practice
90%	Teaching Others

*Adapted from National Training Laboratories. Bethel, Maine

In fact, the "Learning Pyramid" from the NTL Institute for Applied Behavioural Science (See picture on left) is in support of this. According to the pyramid, when learners teach others, the average retention rate increased to 90% as compared to 5% from listening to a lecture. Furthermore, if the learner is able to teach someone, he is internalising the concept and re-expressing it in his own language and that facilitates clarity of thinking as well. Students can also take turns to teach parts of the lesson or partake in small group discussions after a short lecture.

Another collaborative activity used to engage students in this form of collaborative learning is the "Quiz-Quiz-Trade". Students are given quiz cards with questions and answers printed. They then move around to quiz their classmates, giving feedback and explaining the correct answers to their classmates if they are unable to answer the question. After quizzing each other, students trade their cards so that they get a new question to quiz another classmate. The beauty of this activity lies in its ability to enable students to partake in assessment in a friendly and non-threatening environment. They also get to receive immediate feedback about their understanding and level of information retention.

Self-monitoring

One of our objectives in employing AfL strategies is to give students clear directions on how they can improve so that they can take greater ownership of their own learning and become less helpless. Thus, we propose the following strategies to enable students to track their own progress and understanding.

- **Revision guides.** These are examination syllabus re-written in a more student-friendly language so as to communicate the content knowledge students are required to acquire in order to be well-prepared for the examination. Students review the guides and place green or red stickers to indicate how well they understood the material. This process helps students to monitor their own learning and identify areas in which they need to work on.

- **Test post-mortem.** This approach should be used in the aftermath of a test for students to analyse their mistakes and identify areas of improvement. As suggested by Black and Wiliam (1998), teachers need to focus on exact problems with the work students have done and give clear directions regarding what was wrong so that they can take concrete steps to put things right. Many students are aware that they have made some careless mistakes in their work but what exactly is careless? Did the error lie in the expression of their final answer or was there a problem when they drew their diagram? When students can identify exactly what went wrong with their test, they would also realise that it was something that they could work on therefore they need to work on it. Instead of attributing their test scores to "luck" or "laziness", the analysis of their tests clearly identifies for them the gaps in their understanding. Furthermore, it highlights the penalty they have incurred as a result of unintentional errors and sharpens their resolve to be more thorough and meticulous in the future tests. Thus, this strategy is aligned to the intention of having students identify their

learning gaps in view of the syllabus requirement and also develop a conscientious attitude towards their work.

Feedback and Observations

What our teachers say

These AfL strategies were shared with teachers in our school on two different platforms and both sharings garnered very positive feedback from the teachers who felt that these strategies can lead to higher student engagement and understanding. More teachers are becoming aware of incorporating AfL into their classroom and are taking steps to do so. When the sharing of AfL strategies was first conducted during a professional development session within the Science department, there was great interest generated and teachers took some of these strategies into their classroom.

A subsequent follow-up session was arranged for teachers to share their experience on how AfL was enacted in their classrooms. They also showed samples of their students' work and further affirmed the value of AfL in the classroom.

This AfL sharing was thereafter shared at a school-wide Sharing of Best Practices where participants of the sharing also indicated interest and a willingness to bring AfL into their classrooms.

What our students say

Likewise, our students have given positive feedback about our AfL strategies saying that they are able to learn better and understand the lessons and concepts better. The strategies also enabled them to be less helpless in their learning.

Implications

AfL has taken root in our school and is poised to affect how teaching and learning is carried out in our school. Teachers firmly believe in the value of AfL in helping to improve learning. AfL can provide the necessary forward-feeding feedback to enable learners and teachers to make informed decisions. Learners become less helpless because they are able to use the feedback to plan their revision and chart their learning. Teachers are also better equipped to customise their subsequent instruction based on an accurate gauge of their students' understanding.

Conclusion

Just as students are expected to work consistently in class, teachers should also be expected to be consistent in their approaches and this consistency needs to be well-anchored in the rationale behind the approaches. Moreover, this rationale must be communicated to the students so that they can become active and well-informed participants in their own learning. When the opportunity arises, more feedback can be sought from the students to determine if they are comfortable with such practices and if they feel such practices are beneficial to them. Most of the approaches are sustainable in the long-term and but as a practitioner in the classroom who will continue to encounter students of varying profiles and needs, the expansion of the repertoire of approaches cannot be ignored. This expansion of repertoire can only be pursued through continual inquiry and reflection by the teacher and his willingness to engage in formal or informal intellectual discourse offered by Communities of Practices.

As avid users of AfL, we advocate the pervasive use of AfL so that teachers can identify their students' knowledge gap and plan instruction to plug those gaps. We also believe that AfL can lead to greater student ownership of their learning and help them to become more self-regulated learners.

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