



Features of Classroom Formative Assessment

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Abstract

The present report addresses the need to describe and explain the important features of formative assessment when used with instruction. There are nine principles that explain both theory and practice in the conduct of formative assessment inside the classroom. These nine principles serve as a set of expectations to help teachers ascertain better practice of formative assessment when teaching. These nine principles include: (1) Formative assessment works along with the perspectives of assessment “for” and “as” learning; (2) Formative assessment is embedded with instruction; (3) Helping the students focus on the learning goal; (4) Diagnostic assessment on the target competency serves the function of formative assessment; (5) Formative assessment moves from determining discrete skills to integrated skills; (6) Using continuous and multiple forms of assessment; (7) Feedback practices using assessment results; (8) Working out with students to reach the learning goal; and (9) Deciding to move instruction to the next competency.

Keywords: Formative assessment, K to 12 assessment, classroom assessment, feedback practices

Introduction

One of the powerful ways of improving students learning that gained attention in educational reviews is formative assessment. Since Black (1993) and Black and William (1998) established the construct of formative assessment in scholarly reports, there has been several best practices that were documented. These reports explain how theory on formative assessment is translated into actual classroom practice. In 2001, Torrance and Pryor has started the argument in refining theory on formative assessment by looking at teachers’ action research documenting how assessment criteria and processes are communicated to students. Tarras (2005) has called for a guiding definition of formative assessment alongside with summative assessment. Some of these important reports that addressed issues on formative assessment at the start of the 21st century include Clark (2012a) who showed that formative assessment is an instructional process that builds lifelong learning competencies. In the same way, Heritage (2010) explained formative assessment as part of facilitating the learning process stemming from Vygotsky’s (1978) Zone of Proximal Development. Yorke (2003) has also emphasized formative assessment as a way of improving the instructional process in higher education. Clark (2012b) has also drawn a theory of formative assessment detailing how it builds students ability to self-regulate. In a similar fashion, Hudesman et al. (2013) has

investigated how classroom formative assessment together with metacognition improved students' achievement. The concept of formative assessment has been clarified from the 1990's until the early part of the 21st century. Empirical evidences need to be proposed to test how effective is formative assessment in the educational process. One of the recent developments in the practice of formative assessment is the emphasis on feedback and its power in improving students achievement. Tunstall and Gipps (1996) have made a typology on different kinds of teacher feedback as part of the formative assessment practice. Hattie and Timperley (2007) provided a conceptual analysis of feedback and reviewed several studies on its impact on students' performance. These studies at the onset of the 21st century have advanced the theory on formative assessment.

Another line of discussion on formative assessment is the translation of the theory and practice into national and educational policies (i. e. Ecclestone & Pryor, 2003; DepEd order no. 8, s. 2015). A clear set of expectation needs to be outlined on formative assessment in order for educators to implement well the policies on formative assessment. This report addresses the need of educational practitioners especially those that are teaching within the K to 12 levels. A set of expectations that characterizes the practice of formative assessment is provided in this report. This set of practices follows the assumption that formative assessment is anchored on a theoretical framework within a socio-cultural theory emphasizing on the role of the teacher to facilitate students' learning. A second assumption is that there are various evidences specifying the power of formative assessment on reaching students' gains on achievement.

There are nine principles explained in this report describing the critical features of formative assessment. These nine critical features define how formative assessment was derived from various reviews and the present report presents these features to depict an overall practice of formative assessment.

1. Formative assessment works along with the perspectives of assessment “for” and “as” learning. Assessment begins with a change in perspective. Assessment is beyond the idea of recording, checking, marking, and grading students. Assessment should be seen beyond test papers and recognized as a set of practices that is more vital and functional in helping students learn better. Assessment “for” learning raises the idea that assessment is used to motivate students to learn further (Stiggins, 2002). Results of assessment, such as test scores and feedback using rubrics and checklists, should be used by teachers to help them direct their instruction on the learning needs of their students. Related to the previous point, assessment served two purposes. One is that it helps the teacher decide on the appropriate kind of instruction for the students. Second is that the students will benefit much from the instruction because it matches their specific needs. In the idea of assessment for learning, the teacher uses assessment in order to determine what the students know and do not know, what they can do and cannot do, and their misconceptions, and their confusions. The teacher then addresses these needs by providing information on what students do not know, more opportunities to practice what students cannot do, correct misconceptions, and clarify confusions.

On the other hand, assessment “as” learning ensures that students decide on ways to improve themselves by looking at their assessment results. When students start to take action on what they donot know and start to become strategic to attain their goals they become conscious and aware of their own learning and develop self-regulation (Clark, 2012b; Magno, 2009) and metacognition (Hudesman et al., 2013; Magno, 2010). Students become aware of their assessment results when they make a checklist of what they know and what they need to know, when they graph their progress, and when they maximize the use of portfolios to see their progress over time. The outcome of assessment “as” learning is twofold. First, it helps students to become strategic by thinking of a variety of learning strategies to attain their goal (self-regulation). Second, it assists students to become conscious on the conditions in which these strategies work best (metacognition) and ultimately students achieve improved performance.

2. Formative assessment is embedded with instruction. The idea of an effective assessment system that translates to students' achievement and other outcomes is when assessment is integrated with instruction. Assessment when it becomes part of instruction is positioned in every key part of the teaching and learning process such as before instruction, during instruction, and after instruction (McMillan, 2011). Assessment takes an active and important role before instruction. Assessment before instruction serves as a diagnostic assessment. There are two domains that can be determined in the diagnostic process. One is the prior knowledge of the learner which is also a summative assessment of the past lesson. This phase helps the teacher determine how strong is the connection between the past and prerequisite skills to the new lesson. In cases where students have not acquired the prerequisite skills yet, the teacher can decide to review the past lesson first before moving to the new lesson. Another is that diagnostic assessment determines if the students are already knowledgeable of the lesson or competencies that are about to be taught. In other words, diagnostic assessment can determine the existing schema of the learner for the new lesson that will be taught. When the learner could not demonstrate the schema required, the teacher can approach the lesson as introductory. If the schema is already advanced for the new lesson, the teacher can introduce advanced levels or move to the next lesson.

Assessment is also integrated during instruction. This is the kind of assessment that is done while teaching is ongoing. Conducting assessment while instruction is ongoing is described as a double helix model. Assessment and instruction become intertwined improving on each other. While presenting a lesson, the teacher stops at certain points in time to check for understanding and coping. The teacher stops after every small part of the presentation to ask questions, ask students to demonstrate the skills, conduct board work, monitoring during group work, and feedback during practices and performances. The formative assessment while instruction is ongoing allows the teacher to closely monitor the progress of the learner. The adjustment based on students needs include the pacing in the instruction whether it is appropriate for learners. The teacher continually improves the instruction based on the responses and answers of the students.

Formative assessment at the end of the lesson allows the teacher to see whether the objectives are already met by the students. If the students can demonstrate well the task, then the teacher uses the results to decide on the next step in the instructional process (Clark, 2012a).

3. Helping the students focus on the learning goal. Formative assessment starts when the goals that need to be learned is clear for both the students and the teacher. These goals may come in the form of learning competencies, skills, and standards that are prescribed in a national or international curriculum. These competencies are used as basis on the kind of assessment that needs to be conducted and the contents of the assessment. These goals may require competencies to be demonstrated using paper and pencil tasks or performance-based tasks. The goals also help the teacher create diagnostic assessment of students' schema. If the goal requires students to "classify matter that absorb water, sink, float, and decay" the diagnostic assessment should at least enable students to engage in a classification task in a paper -and -pencil task or written work.

The learning goals are important because it serves as the target for the teacher and the student on what need to be worked out. If the goal is to "solve word problems involving quadratic equation", and students during the diagnostic assessment showed difficulty on this task, the teacher starts to think of appropriate steps to help the students achieve this competency. On the other hand, the students become focused on what they need to do in attaining the competency.

Making students become aware of the competency can be done in a variety of ways. The teacher can directly tell the students before the start of the lesson on what they need to

learn, demonstrate, and be able to do. An advanced organizer is helpful to show the outline of what students need to learn for the lesson (Hudesman et al., 2013). The kind of questions and items asked in the diagnostic assessment can hint students on the lesson to be taken up. Asking the students create a concept map of what they know about the term is helpful in making student realize the big idea in the lesson (Hattie & Timperly, 2007). Students can also accomplish a checklist containing the subtopics and specific competencies to be learned. These strategies help students realize the goals of learning. The goals help them focus to think about ways on how to reach them (Yorke, 2003).

4. Diagnostic assessment on the target competency serves the function of formative assessment. Diagnostic assessment is generally provided before instruction is provided to determine if students already have an existing schema and prior knowledge on the target competency (Parhomenko, 2014). If the target competency is for learners to determine the place value of digits up to thousands place, a set of digits are provided where one digit is underlined and they will identify the place value. This task is given to the learners before instruction. The work is later checked if students can identify the place value. In the same way, if the teacher wanted to determine students existing understanding of photosynthesis, the teacher can ask students to list sentences about how photosynthesis works. If a physical education teacher aims to diagnose students' ability to serve a shuttlecock in badminton, learners are asked to demonstrate the serving before instruction. The responses in diagnostic assessment raises concerns that include misconceptions, misinterpretations, confusions, difficulties in demonstrating the skill or a schema that is not yet developed. In the perspective of Vygotsky's zone of proximal development, this is the learner's stage of actual development (van Geert, 1998).

Given the difficulties, the teacher is given information on how to approach instruction in order to clarify confusions, correct misconceptions, teach skills that are not yet known, and provide opportunities to practice tasks that need enhancement. The diagnostic assessment helps the teacher focus instruction where corrective feedback is necessary for students with misconceptions about photosynthesis. Clarification on place value is provided for students who still cannot identify. More time to practice serving the shuttlecock is provided by the physical education teacher for learners who still have difficulty. Instruction anchored on diagnostic assessment is tailored to the needs of the learners addressing their difficulties. In rare cases, students might have gained the necessary competencies as shown by the diagnostic assessment. In such cases, further and lengthy instruction may not be necessary anymore and the teacher can decide to just provide a review and then move on to the next lesson. Further assessment needs to be conducted later on to determine if students have progressed on the target competency.

5. Formative assessment moves from determining discrete skills to integrated skills. Formative assessment involves a gradual process from determining students' ability to demonstrate single skills to integrated skills. When students need further scaffolding on a skill, the teacher starts by assessing single discrete skills (Torrance & Pryor, 2001). For example, in the English language subject, students are assessed if they can determine whether the noun agrees with the verb. When students have attained mastery on this skill, the teacher can ask the students to write an essay where the sentences show proper subject and verb agreement. At this stage, the student is assessed on two things: one is their ability to write the paragraph and second is their ability to use verbs that agrees with the subject in the paragraph. A two stage assessment is conducted in order to help the student master each skill first before they are assessed on multiple skills. The two -stage process of assessment eases the cognitive load of the student when two skills are already required and assessed (Sweeler, 1994).

6. Using continuous and multiple forms of assessment. Formative assessment gives the teacher accurate information about students' level of competency if the process is done several times. When the teacher initially assesses the students' competency and found that there is still a certain number of students who could not do the task, it informs them that the lesson needs re-teaching and the strategy needs to be taught in a different way. After re-teaching, the teacher needs to conduct another round of assessment in order to determine if learning took place. The round of re-teaching and re-assessing continuous until majority or all of the students are able to meet the competency of the same task needed. In this process, learning is ensured to take place. Various definitions of formative assessment include a focus on moving forward and making improvement on instruction (i. e. Black, 1993; Frey & Fisher, 2011; Stigler, 2010). Instruction improves if the teacher is continuously informed whether the learners are attaining the skill or not. An important aspect of formative assessment is the improvement of instruction because it is informed by several assessment results. Multiple assessments are necessary for two reasons. One is ensuring that skills are practiced and enhanced and to establish a reliable assessment of students competency (Turnstall & Gipps, 1996). If students have indeed mastered a competency, the mastery should be evidenced by consistent results from multiple sources of assessment.

7. Feedback practices should be alongside with the assessment results. There are several reviews and empirical reports supporting the power of feedback on improving students' performance (Tarras, 2005). Feedback is given directly to a student and the specific aspect of learning that needs to be improved is pointed out and addressed through feedback. When a child makes a mistake in a spelling of a word while writing a paragraph in the process of formative assessment, the teacher immediately provides the correctives enabling the child to revise and improve their work. Feedback comes in two forms according to its time implementation. First, performance or students' work needs to be demonstrated first then feedback follows (Hudesman et al., 2013). This usually occurs when doing written seatwork and exercises with a large group of students. The work needs to be completed then checking and corrective feedback follows. When the teacher provides the correct answers during the checking, it serves as a corrective feedback for the student. For assessment tasks that are done as an assignment, the students bring the completed work in school. The completed work is brought to school and is then provided feedback. Feedback can come in the form of written comments, checking for mistakes, and verbal comments. For performance-based tasks, the learner completes the performance, then feedback is provided about the strong and weak points. The disadvantage of feedback after performance is losing the chance to immediately correct the work of the learner. If assessment will fulfill its role to help the learner improve their learning, then assessment should be functional to help the child attain the necessary criterion.

Another form of feedback is provided as a support to the learner while assessment task is ongoing (Clark, 2012b). This form of feedback happens while the students are accomplishing written seatwork like exercises and essays, the teacher can specifically point out what needs to be checked again, improved, revised, changed, or reworked. When a teacher notices incorrect solutions, procedures, and derived answers in solving mathematics word problems, the child is asked to check again his work. When there are deviations in the writing mechanics during essay writing in a language class, the inconsistency is pointed out and the learner is requested to revise. When there are misspelled words, these are pointed out to be immediately corrected. During performance-based tasks, the teacher can provide nonverbal cues as a form of feedback while the learner is delivering the performance. These nonverbal cues are meant to prevent the learner from getting low marks and to maintain the performance within the criteria. Nonverbal cues during performance-based tasks are used to feedback on loudness of voice, maintaining eye contact, movement in one's place, tone of voice, breathing, and others.

Feedback is provided during formative assessment to allow the child on focused revision (Hattie & Timperly, 2007). The result of formative assessment is not graded allowing the learner to make continuous improvement and revisions in one's work. After specific feedback is given in a written essay, the student rewrites the essay in another draft addressing the feedback provided. The rewritten work is an improved version of the essay which is closer to the target criteria and competency required. The cycle of feedback and revision in the formative assessment process continue until the learner moves closer to the standards. This aspect of formative assessment makes it powerful in explaining students' performance.

Feedback also makes it possible for assessment to be integrated with instruction. The process of feedback, revision, teaching, and reteaching are intertwined in order to scaffold the learner and to ensure that the competency is developed. Formative assessment will not serve its function to ensure learning if the feedback, revision, teaching, and re-teaching are absent in the process. The process also assumes that when feedback is provided, teaching is already ongoing.

Feedback is said to be powerful in ensuring the learning of students. The quality and type of feedback given by teachers to students is very important. For example, a positive feedback can increase the persistence of an individual with the at-hand that interests them (Deci, Koestner, & Ryan, 1999). Feedback is an important component which helps teachers make students' perform better. Feedback also helps students become self-regulated learners since it gives them an idea of what they could improve on. Asking for help is said to be one of many types of self-regulation which distinguishes that students who receive feedback perform better than those who didnot (Hattie & Timperley, 2007). Feedback also lessens the gap between the actual outcome by the student and the expected outcome by the teacher.

8. Working out with students to reach the learning goal. The ultimate goal of formative assessment is to bring the students towards learning by reaching the learning goal. Repetitive, continuous, and multiple assessments are provided in order to move the learner closer towards the goals. In between the assessment, further support is provided through teaching and re-teaching. The teacher needs to focus instruction on the target standard to help learners move toward the goal. This can be accomplished through intentional teaching (Clark, 2012a). In intentional teaching, time is devoted on teaching the necessary competencies found in a set of standards. In this approach, both instruction and assessment are focused on the goal that the learner needs to meet. In the same way, instruction and assessment are aligned with the necessary performance standards. The teacher continuously observes and monitors students' progress until they reach the goals.

The idea of teaching for learning and reaching the learning competency is explained in Vygotsky's zone of proximal development. In order to bridge the gap between what the child does not know to a child who knows, the child needs to socialize with a more expert learner, with learning resources, and with the physical environment (van Geert, 1998). The gap is eventually closed when the child starts to demonstrate skills and can accomplish the assessment tasks.

The learning goals are met as evidenced by acceptable level of standards in the summative assessment (Tarras, 2005). If the attainment of learning goals is shown in the summative assessment, formative assessment, therefore, needs to scaffold students in the summative assessment. If problem solving involving division of decimals are part of the summative assessment, the students need to be practiced in the same skill during the formative assessment. If the final performance is for students to demonstrate proper ways of disposing matter, examples and exercises needs to be provided on different ways of proper disposal. The processing of moving towards the learning goal is well-accomplished if the teacher and students are clear with the goal they need to meet and the tasks are directly aligned with the goals.

9. Deciding to move instruction to the next competency. The indicator that students are ready for the new lesson is when majority or all students can demonstrate the target competency (Yorke, 2003). If about three or two students are still having difficulty, the teacher can work out the task with them on a separate time. The final phases of reteaching and reassessing learners should indicate that progress is attained until such a time that the learners are ready to take the summative assessment. The continuous and multiple assessments should ensure that learners move closer towards the goal. The results of the final phase of the formative assessment or the summative assessment should help the teacher decide if students can move on to the next lesson.

The Value of Formative Assessment

The present report set out to explain two important points about formative assessment. First is how formative assessment can be used by educational practitioners in the K to 12 levels in facilitating better learning. The other is the power of formative assessment in the achievement of students in reaching their goals.

In describing formative assessment, it is also important to emphasize the value and application of instructional practices integrated with assessment in facilitating students' learning. The value of formative assessment can be seen for both teachers and learners. Since formative assessment is embedded with instruction, teachers can properly identify the areas of students' weakness (before instruction) and make the necessary intervention to improve their students learning. For the teachers, they can determine the necessary changes and improvement in the delivery of the lesson which can be later incorporated when re-teaching. Teachers can also make the necessary assessment on students learning to either advance in the levels of the lesson or move to the next competency. The teacher plays a central role in the practice of formative assessment (Black & William, 1998). The teacher serves as the mediator between the lesson and the learner. The teacher is there to reduce the error made by learners especially when the learners do not have a full grasp of the lesson. The feedback of the teacher is important in improving the performance of the students which in turn makes learning more effective.

Formative assessment not only helps the learner attain the target competency, learners also become aware of their own learning. Sadler (1989) concluded that formative assessment is important in developing students' capability to monitor the quality of their work. This means that the more students engage in formative assessment, the better they will get in being critical in judging their own work. Formative assessment is also important since students can do self-monitoring with competence (Magno & Lizada, 2014). The process of formative assessment facilitates self-regulated learning. Results of a study about self-regulation (Clark, 2012b) emphasized that students who are self-regulated have effective study habits, can manage time efficiently, and structure a productive working environment as part of their behavior. The feedback provided by the teacher allows students to process their work individually and evaluate their work on their own. When this happens they develop their capacity for metacognitive thinking (Clark, 2012b). In a study of self-regulated learners, Hudesman et al. (2013) found that students who are self-regulated learners showed significant academic progress as compared to those who were not. This finding leads us to the assertion that self-regulation and metacognition are important in developing effective learners. Both self-regulation and metacognition are products of effective formative assessment which adds to its value in the facilitating learning.

Formative assessment also opens the door in the interaction between the student and the teacher regarding the quality of work. This interaction is important because not only does the process improve communication, but more importantly, this creates a positive learning environment for the student in terms of learning. This interaction illustrates how the teacher and student can mutually benefit in formative assessment.

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