
CHECK FOR UNDERSTANDING: THE CASE FOR FORMATIVE ASSESSMENT

Diane S. Maletta, E. Fleming, and O. Barry

So much testing time... so little teaching time. "Testing is not teaching. How can reading, learning, or any other aspect of curriculum be improved if there is such a significant loss of teaching time?" (Graves, 2002, pgs. 2-3). Teachers certainly can relate to this duress in recent years. But what can be done about it? How do we eliminate this classroom culture of testing and teaching to the test? Donald Graves (1983) argues that formative assessments clearly are more relevant to teachers' daily lives than are summative assessments. He notes the plethora of information that a portfolio can demonstrate about student progress and learning over a period of time, which allows teachers to more effectively teach each student. Assessing is intended to be a way to assist teachers as well as students, with immediate assistance being the most advantageous for both. In a word, effective teaching naturally flows from assessment results; on a daily basis, this is formative assessment (Landrigan & Mulligan, 2013). Formative assessment is a way to assure that immediate and effective assistance takes

place. What formative assessment is and how it can be accomplished most effectively is outlined in this article. Also included are research-based best practice assessments that are easy to use and effective means of checking for students' understanding. Increased time for these fruitful assessments is sure to yield greater learning than the inordinate amount of time spent on summative assessments in so many classrooms.

What is Formative Assessment?

["Checking In" as Formative Assessment](#) (E. Fleming, *Classroom Video*)

Formative assessment occurs constantly in our classrooms, from observing students as they are completing a task at their seats, to calling on a show of hands so we might assess whether to move forward in the lesson or reteach (Figure 1).



Figure 1. Raised hands formative assessment.

So, what really is formative assessment? Essentially, formative assessment is a process rather than a product; it focuses on uncovering what and how well the student is understanding throughout the course of instruction. Laura Greenstein (2010) states, in *What Teachers Really Need to Know About Formative Assessment*, that formative assessment is “a systematic way for teachers and students to gather evidence of learning, engage students in assessment, and use data to improve teaching and learning” (p. 2). Others have commented on formative assessment as well. Margaret Heritage (2007) describes it as “a systematic process to continuously gather evidence about learning” (p. 140). Carol Boston (2002) explains that it is “the diagnostic use of assessment to provide feedback to teachers and students over the course of instruction” (p. 1).

What makes any particular assessment formative is not the specific measuring tool employed but how and how often the information gathered from the tool is used. If a teacher uses information from a particular

assessment to track learning on a daily or near daily basis, give students feedback regularly, and adjust instructional strategies in a way intended to further progress toward learning goals, that teacher is engaging in formative assessment.

Why Use Formative Assessment?

Daily formative assessment can be summed up in Landrigan and Mulligan’s (2013) description of its inherent nature within a classroom: “Assessment cannot be separated from instruction. It is not an ‘add-on’; it is what we do every day as teachers. The cyclical process of triangulating – analyzing, questioning, and assessing – is embedded in instruction. It is simply ‘how we teach.’ Some call it the ‘teachable moment’ ...” (p.72). This form of assessment and data collection is more relevant to teachers’ daily work with their students than testing or any type of summative assessment.

Formative assessments do a number of things. They inform teacher instruction and provide students feedback. They provide checks for understanding in various forms. They can assist with differentiating in the classroom. They are assessments for students’ future and ongoing learning.

Qualities of effective formative assessment.

According to Greenstein (2010), there are three essential principles of formative assessment that must be kept in mind while creating and implementing formative assessments in lessons.

1.) Principle 1: Formative Assessments are Student Focused

2.) Principle 2: Formative Assessments are Instructionally Informative

3.) Principle 3: Formative Assessments are Outcomes-Based

Formative assessments should be presented in a way that is common to students' daily experiences with the lesson material and require information that has been explicitly taught and will display clearly what students know and understand once completed. These should not be complicated for students to complete and should address only what has been taught and practiced throughout the lesson.

There are many ways to formatively assess students. In all cases, teachers are informed of students' learning and of the need for the teacher to either move on or reteach and in some cases to do both through differentiating.

Where Does Formative Assessment Fit Into Teaching?

Greenstein (2010) has developed two cycles of formative assessment that may be useful in understanding the process of assessing formatively. The first cycle outlines the basic formative assessment process, beginning with the unit goal, standards, and lesson objective and continuing to the data collection and response of continued teaching and possibly re-teaching. The second cycle (Figure 2) is critical to understanding the importance of formative assessment in the process of teaching and learning.

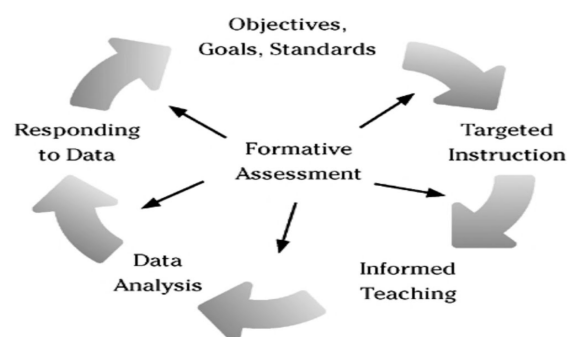


Figure 2. Cycle of Instruction for Formative

Assessment (Greenstein, 2010, p.24).

This cycle focuses on a teacher's own teaching and effective instruction which will assure that the formative assessment, at the center of the cycle, remains central to instruction. It is the formative assessment that continues to inform all next steps of instruction throughout a lesson.

This cycle begins with the objective, moves on to the targeted instruction intended to meet the objective, and the continual formative assessment is informing the ongoing teaching. Thus, teaching is continually analyzed and responded to, as seen from the cycle's arrows that are radiating from the central formative assessment. This cycle clearly allows for effective and efficient instruction to move forward when ready, and to reteach quickly when not.

To align well with these cycles of formative assessment, there are specific formative assessments that are most effective. According to Fisher and Frey (as cited in Dodge, 2009, p. 4), "Formative assessments are ongoing assessments, observations, summaries, and reviews that inform teacher

instruction and provide students feedback on a daily basis”.

Formative assessments often are placed into four basic categories:

1. **Summaries and Reflections:** Students stop and reflect, make sense of what they have heard or read, derive personal meaning from their learning experiences, and/or increase their metacognitive skills. These require that students use content-specific language.

2. **Lists, Charts, and Graphic Organizers:** Students organize information, make connections, and note relationships through the use of various graphic organizers.

3. **Visual Representations:** Students use both words and pictures to make connections and increase memory, later facilitating retrieval of information. This “dual coding” helps teachers address classroom diversity, preferences in learning style, and different ways of “knowing.”

4. **Collaborative Activities:** Students have the opportunity to move and/or communicate with others as they develop and demonstrate their understandings. (Dodge, 2009, p.5)

All four of these categories of formative assessment may be utilized at various stages of lessons – before lessons, during lessons, and after lessons. Some examples of common usage times for the four categories above are described in the following paragraphs.

Before-Lesson Formative Assessment

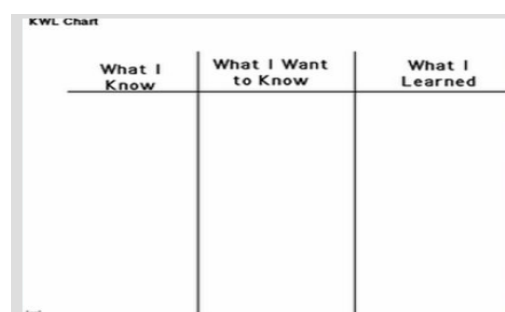
Examples

Before a new lesson begins, the teacher seeks students’ prior knowledge of the

objective to be taught and information that will positively impact the new lesson. Therefore, it is important to begin the lesson with a formative assessment in order to determine student knowledge and skill level, guide teacher planning, and prepare students for learning. (Greenstein, 2010):

Some common formative assessments to administer *before* a new lesson:

- **KWL Chart** –This chart organizes a discussion that culminates in lists of the following: what we know – what we want to know – what was learned (this section to be completed)



| What I Know | What I Want to Know | What I Learned |
|-------------|---------------------|----------------|
| | | |

Figure 3. KWL Chart.

- **Bell Work/Warm-up/Do Now** – This might ask students to state in a sentence or two what they already know about the topic of this new lesson about to be taught to them.

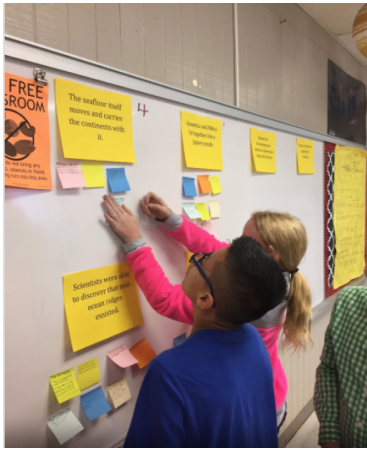


Figure 4. Post-It Note Formative Assessment.

- Post-It Notes – This can be approached much the same as the bell work, but the sticky note formative assessment often asks students to carry it to a chart or board (Figure 4) to place in the area where the teacher can announce these and thus begin the new lesson, now seeing much of what the students already know about this topic.
- PollEverywhere – This is an app used to electronically measure student knowledge prior to a lesson so the teacher is aware of student knowledge on the lesson objective. Students use their own device to complete the poll set up by the teacher. This usually takes only a minute or two so it is a quick way to determine prior knowledge (Figure 5).

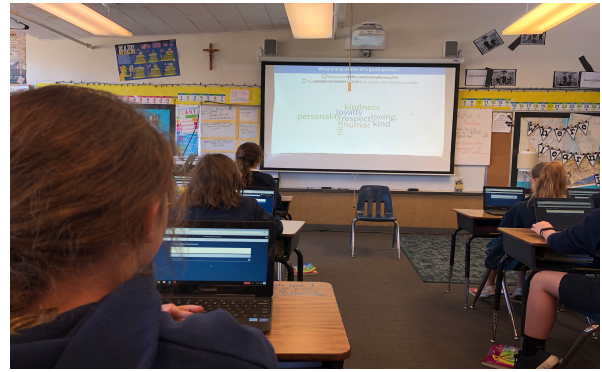


Figure 5. PollEverywhere.

During-Lesson Formative Assessment Examples

During the teaching of lessons, teachers often take time to check for students' understanding of what they are teaching. They want to be sure students are attentive and learning as they scaffold knowledge and understandings they are teaching them at each step. These checks for understanding are various types of formative assessments. These are critical components of lessons in that they guide teachers in the direction their teaching should go. Although they may have thought their class would comprehend a certain point easily, when they observe otherwise, by way of formative assessment, they are able to take a different direction to assure student understanding. This is then followed by another check for understanding. Thus, goes the cycle of formative assessment.

While teaching a lesson, teachers use formative assessments *during* instruction for a number of reasons such as to determine class progress and individual achievement, to benchmark student learning, to provide immediate feedback, and to support self-assessment (Greenstein, 2010).

Some common formative assessments administered *during* a lesson are:

1. Thumb checks to show understanding (thumb up), lack of (thumb down), or a questionable understanding (thumb horizontal). Clarification or re-teaching can then be done quickly if necessary (Figure 6).

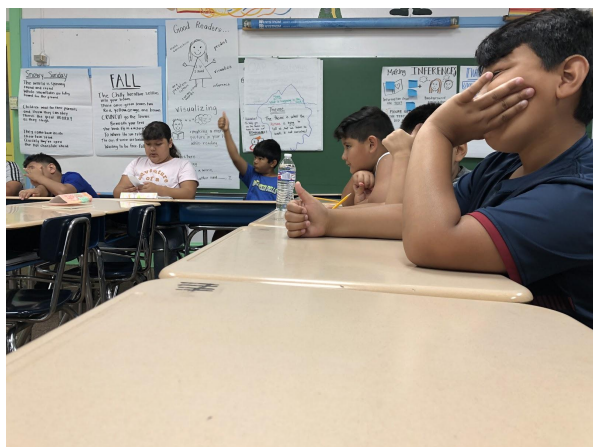


Figure 6. Thumb Check Formative Assessment.

2. White Board Check for students to reveal their answer to a problem or question. The teacher can determine from this quick check whether the majority of students are accurately understanding the knowledge or skill being taught.

- a. A twist on this common formative assessment has been utilized with success by teachers: *Green Means Go Boards*- utilize a page protector with one side having computer paper and the other side having a green piece of paper. Students write their answer on the white paper side and raise the opposite side (green) to indicate they're ready to share their answers. This allows for a more accurate

formative assessment when the teacher sees mostly green raised, as students are not looking at other whiteboards for answers (Figure 7).

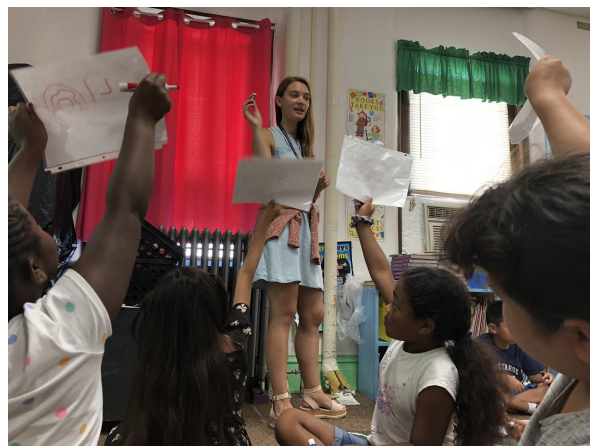


Figure 7. White Board Formative Assessment.

3. Red light, green light cards for students to show that they agree or not with a check for understanding the teacher is initiating (Figure 8).



Figure 8. Red–Yellow–Green Light Formative Assessment.

4. Electronic response system - clickers to check if most of the class is following and understanding the lesson instruction so teaching can continue, or there is a need to reteach some part of the lesson.

5. Additional formative assessments that may be utilized during a lesson are:
 - Google Form to gauge questions or clarifications.
 - Student desks for students to write answers to formative assessment questions with Expo/Dry Erase Marker; this is fun for students to do and erases/washes off easily!
 - Teacher Table 1:1 time allows for a closer look at the learning of all students, keeping the teacher accountable and providing students the opportunity to have enhanced attention.

Post-Lesson Formative Assessment

Examples

After a lesson is complete, a formative assessment is given to check that the lesson objective has been met and it is appropriate to move on to the next lesson. This check is often a more formal check for understanding that may be graded, as it assesses the entire lesson.

Post-lesson formative assessments are utilized for many reasons such as identifying any gaps left in the lesson objective and thus selecting individual interventions, determining learning that did occur, and providing time for students to thoughtfully reflect on the knowledge or skills gained.

Some common formative assessments administered after lessons are:

1. Exit tickets to check that students have learned the lesson objective (Figure 9).

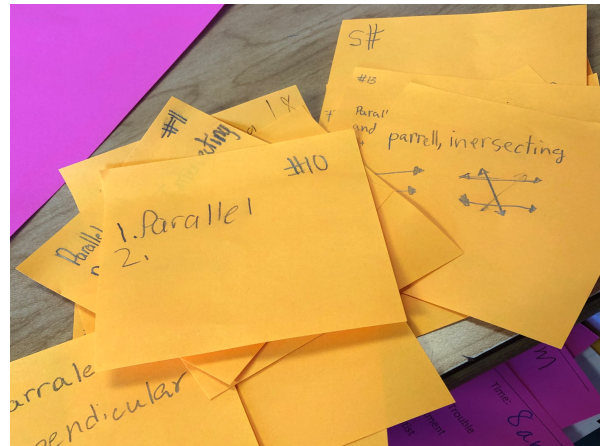


Figure 9. Exit Ticket - Post-It.

2. Quiz to determine knowledge gained during a lesson to determine if students met the lesson objective (Figure 10).

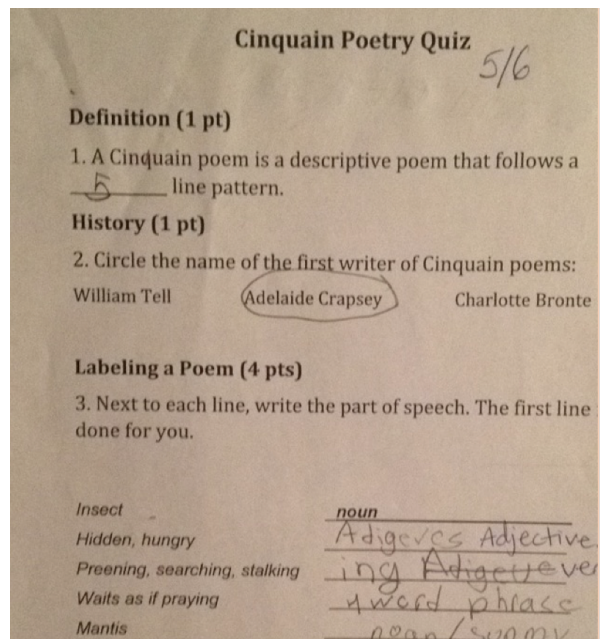


Figure 10. Post-Lesson Formative Assessment – Quiz.

3. Illustrator for students to provide a picture illustrating the topic being studied (i.e. post-it, half sheet, comic strip).
4. Web/graphic organizer that will assess the

lesson objective in a more visual manner (Figure 11).

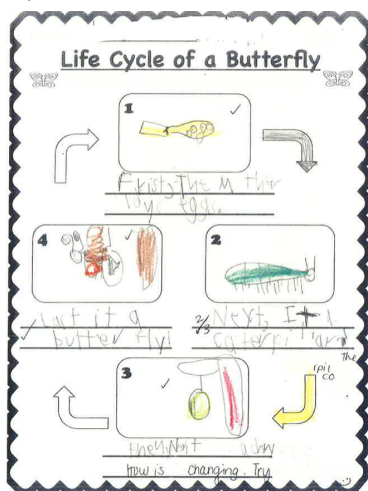


Figure 11. Post-Lesson Formative

Assessment – Graphic Organizer.

Real Teachers' Favorite Formative Assessments

A teacher often has a go-to formative assessment that is a favorite to use before, during, or after a lesson. A few teachers were asked to share their favorites in a Course Blog Discussion (9/18/18) directed by this author. The following examples are intended to assist other teachers in their implementation of formative assessments. For a “during-lesson formative assessment,” S. Doyle (personal communication, September 18, 2018) shares her favorite *I am a big fan of having students use their fingers to indicate their level of understanding throughout a lesson or even when directions are given. This is a really quick way for me to gather a lot of information. One thing I am hoping to refine this year is my use of progress monitoring. More specifically, I am looking to be much*

more consistent in tracking reading and math fluency. This is the most influential form of assessment I use to inform my instruction and lesson planning.

M. Welsh (personal communication, September 18, 2018) describes a similar “during-lesson formative assessment:”

I've been trying to use self-assessment strategies, too! My kids like the 'show me five' (how well do you know what we're doing, one being "I am so confused" and five being "I could teach it").

When asked about her overall preferred formative assessment, O. Barry (personal communication, September 18, 2018) shared one that may be used before, during, and after a lesson. Figure 12 displays a photograph of one of her students utilizing the small whiteboard along with a description of its use. Teachers who have these to use in their classrooms will often use them as their “go-to” method to assess formatively. The students enjoy them a lot too!

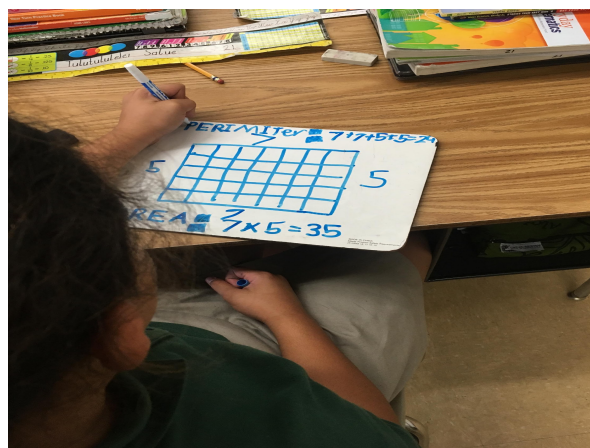


Figure 12. A Teacher's Favorite Formative Assessment – Small White Board Check.

Barry (personal communication, September 18, 2018), explains her use of these

One type of formative assessment which I find extremely useful within lessons is the use of whiteboards. I find this method of assessment especially beneficial in Math. Each student has access to their own whiteboard and marker and the teacher can write a question on the board. The students can then complete their answers on their individual whiteboards. The teacher can quickly go around and check the method students use to complete the question and the student's answer. This gives the teacher an opportunity to monitor student progress and see which students may need some extra support to master the concept by guiding them step by step or re-teaching. The use of whiteboards can also be used to check prior-knowledge on a particular topic and therefore allow the teacher to better prepare and plan for the next lesson.

Finally, another type of formative assessment may be viewed in Figure 13 a writing assessment within Google Classroom on a Google Doc. E. Fleming (personal communication, December 29, 2018) explains her implementation of this valuable assessment as one that is ongoing, from start to finish, in a writing lesson. Teachers will find that assessing writing formatively in this more natural manner will prove most effective and efficient as compared to the paper/pencil method. Nevertheless, the traditional method of writing assessment will

likely need to be utilized at times.

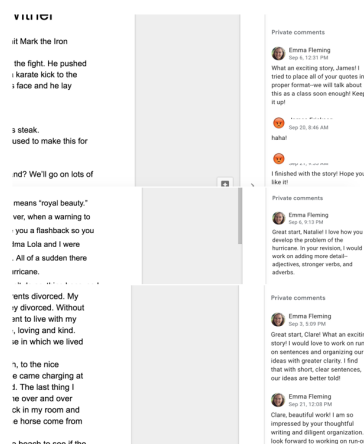


Figure 13. Formative Writing Assessment in Google Classroom.

As an English major, I value the writing process. Students in my fourth-grade classroom receive regular feedback on writing assignments through the use of Google Classroom and Google Docs. When students have developed their first draft, they reproduce it in Google Docs within our Google Classroom portal. Once submitted, I am able to review their work. This particular platform of Google Docs has made it possible for me to give formative feedback and regularly assess their writing. I am able to add suggestions, edit where needed, and provide comments throughout the assignment's progress.

Formative assessments through Google Docs honors the writing process for my students, and allows them to reimagine assessment. As seen in the screenshots above, I am able to affirm the ways in which my students have addressed their writing goals, and push them

along the path of growth. Instead of receiving a paper turned back and filled with marks, my students recognize their Google Doc as a “working” document. Furthermore, this means of formative assessment gives way to intentional conversations on the process of learning and the means of assessment. Students understand that feedback is constructive and necessary to their learning and my teaching. (E. Fleming, personal communication December 29, 2018)

The Value of Formative Assessment

These teachers who shared their favorite and often “go-to” formative assessments place great value on using them in their own classrooms. Dodge (2009) describes the value of formative assessment in this way: “Using at least one formative assessment daily enables you to evaluate and assess the quality of the learning that is taking place in your classroom and answer these driving questions: How is this student evolving as a learner? What can I do to assist this learner on his path to mastery?” (p. 5).

The answers to these questions drives the teaching and learning in the classroom, enabling only the necessary and the most efficient and streamlined teaching to take up the valuable time used for a classroom lesson. Undoubtedly, formative assessment is more useful than summative assessment in teachers’ day-to-day data-driven decision-making. While formatively assessing on a daily basis, the easiest way for teachers to collect data is to walk around the classroom with a clipboard and sticky notes or class

roster. As teachers notice acquisition or confusion with a skill, they record the student’s name and jot down a brief comment. Teachers also might consider keeping a folder for each child where these and other notes are organized. This valuable data allows for appropriate teacher planning and productive conference time with individual students.

The value of formative assessment cannot be overstated. For teachers to be able to teach effectively, they need knowledge of student understanding at all phases of lessons they are teaching - before, during, and after. This is the way teachers will be able to effectively teach what is necessary and pertinent to students’ learning needs. As one teacher noted, “I thought the kids would know a lot about a story, but I realized from activating their prior knowledge that they did not. So, I was able to completely change my lesson plan” (L. Driscoll, personal communication, September 18, 2019). In this case, the teacher’s before-teaching formative assessment allowed for the students to learn most effectively during the revised lesson that followed.

Conclusion

As stated at the outset of this article and discussed throughout - testing is not teaching. The considerable time spent on both preparing for and taking tests often displaces precious time for effective student thinking and learning to occur in our schools. Good teaching involves replacing this inordinate amount of testing time with frequent formative assessments, thus preparing and

teaching our students well. Indeed, formative assessment is the appropriate response to an inappropriate over-emphasis on standardized, high-stakes testing. Formative assessment is critical for good teaching and learning to occur and to produce the fruits of the knowledge, skills and understandings taught by good teachers. Everyone wins when our students are learning more and testing less frequently, thus providing greater success for our students! Isn't that what we all want, anyway?

Author's Note:

Diane S. Maletta, [Institute for Educational Initiatives, University of Notre Dame](#).

Correspondence concerning this article should be addressed to Diane S. Maletta, Institute for Educational Initiatives, University of Notre Dame, Notre Dame, IN 46556 Contact: dmaletta@nd.edu

References

Boston, C. 2002-10-00. ED470206, ERIC Clearinghouse on Assessment and Evaluation, College Park, MD.

Dodge, J. (2009). *25 Quick formative assessments for a differentiated classroom*. New York, NY: Scholastic, Inc.

Fisher, D. & Frey, N. (2007). *Checking for understanding: Formative assessment techniques for your classroom*. Alexandria, VA: Association for Supervision and Curriculum Development.

Graves, D. H. (1983). *Writing: Teachers & children at work*. Portsmouth, NH: Heinemann.

Graves, D. H. (2002). *Testing is not teaching: What should count in education*. Portsmouth, NH: Heinemann.

Greenstein, L. (2010). *What teachers really need to know about formative assessment*. Alexandria, VA: Association for Supervision and Curriculum Development.

Heritage, M. (2010). *Formative assessment: Making it happen in the classroom*. Thousand Oaks, CA: Corwin.

Landrigan, C. and Mulligan, T. (2013). *Assessment in perspective – Focusing on the reader behind the numbers*. Portland, ME: Stenhouse Publishers.