Formative Assessment: Understanding Learning in the Middle School Classroom

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Abstract
This study examined the way teachers use formative assessment in the middle school classroom. Data was collected through field observations, teacher interviews, and reviewing written responses on student work. The findings showed that implementing formative assessment creates structure and engages students. The findings also show that the lack of formative assessment can cause resistance to what the teacher is trying to accomplish. Based on the literature reviewed and the research data, students engage and respond better to the use of formative assessments.

Document Type
Thesis

Degree Name
MS in Literacy Education

Department
Education

First Supervisor
Gloria Jacobs

Subject Categories
Education
Formative Assessment:
Understanding Learning in the Middle School Classroom

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Submitted in partial fulfillment of the requirements for the degree
M.S. Literacy Education

Supervised by
Dr. Gloria Jacobs

School of Arts and Sciences
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April 2011
Abstract

This study examined the way teachers use formative assessment in the middle school classroom. Data was collected through field observations, teacher interviews, and reviewing written responses on student work. The findings showed that implementing formative assessment creates structure and engages students. The findings also show that the lack of formative assessment can cause resistance to what the teacher is trying to accomplish. Based on the literature reviewed and the research data, students engage and respond better to the use of formative assessments.
The use of formative assessments has recently been implemented in many local schools at both the elementary and secondary levels. Teachers are using formative assessments in their classrooms as a way of understanding student learning and what can be done to further teacher knowledge and improve instruction. Formative assessment aims to provide students and teachers with feedback necessary for determining instruction. Throughout my research, I focus on the use of formative assessments at the middle school level, specifically seventh and eighth grades. The content areas observed were based on the recommendations of the special education teacher I met with during the early stages of my research. They were English Language Arts and Math.

Formative assessments are an important aspect to the success of students at all levels. Multiple forms of formative assessments can create structure for students, allowing for them to know what is expected of them and how to accomplish the goals set by the teacher. This research will help teachers become aware of how they can acknowledge what students already know and what can be done to help them increase success. The research will explore a variety of common formative assessments being used and how teachers are using them. The questions that will be explored through the research are: What are formative assessments? How are teachers using formative assessments with their students? And, are formative assessments providing teachers with the information needed to enhance students’ knowledge and improve instruction? Examples of the formative assessments observed will also be shared at the conclusion of the research.
Theoretical Framework

In this section, I will first discuss the sociocultural definition of literacy as well as constructivist learning environments. Although the constructivist theory and the sociocultural theory are similar in context, there is a difference. The constructivist theory suggests that one should focus on the learning and intellectual representations of the person while the sociocultural theory is concerned with how learning is an act of how one acquires acceptable values and behaviors in society.

Sociocultural

Literacy is “social and linguistic practices [that] are mutually constituted with past and present power relations among people who write and read to accomplish social goals” (Larson and Marsh, 2006, p. 21). Literacy can be viewed as a sociocultural practice, defined as “changing participation in culturally valued activity with more expert others” (Larson and Marsh, 2006, p. 4). The sociocultural theory focuses on how teachers and peers influence a student’s learning and how the community and culture around them influences instruction and the acquisition of knowledge. This theory applies to formative assessments because these assessments inform both the teacher and student about student understanding and what can be done to increase knowledge.

Barton and Hamilton (1998) suggest that “like all human activity, literacy is essentially social, and it’s located in the interaction between people” (Larson and Marsh, 2006, p. 10). Literacy is more than just reading, writing, and speaking. The importance of literacy is not just in the how to read, write, and speak but rather in a person’s ability to use these skills in acquiring
knowledge and in shaping the direction of their future. Instructional models based on the social constructivist point of view stress the need for collaboration among learners and with teachers and other adults in society (Lave & Wenger, 1991; McMahon, 1997). Vygotsky observed that when children were tested on tasks on their own, they rarely did as well as when they were working in collaboration.

**Constructivist**

Jonassen (1994) states that Constructivist learning environments support "collaborative construction of knowledge through social negotiation, not competition among learners for recognition."

“From a social constructionist perspective as students share background knowledge and participate in the give and take of collaborative and cooperative activities they are actually negotiating meaning. They are building knowledge, not as individuals, but as a group” (Maddux, Johnson, and Willis, 1997).

According to the National Middle School Association, “another distinction that underpins formative assessment is student involvement. If students are not involved in the assessment process, formative assessment is not practiced or implemented to its full effectiveness. Students need to be involved both as assessors of their own learning and as resources to other students” (Garrison and Ehringhaus, 2007, p.2). Learning is a collaborative process in which the learner is not alone in their development. Larson and Marsh (2006) believe that “learning occurs through participation in social practices, such as schooling for example, that are motivated by the desire to become full participants in communities of practices” (p. 106).

**Zone of Proximal Development**
To better understand the use of formative assessments and the constructivist and sociocultural theories, one should examine the zone of proximal development. The zone of proximal development is the difference between what a child can do on his or her own and what the child can do with help. Larson and Marsh (2006) defined the zone of proximal development, often referred to as ZPD, as “the range of a child’s ability characterized by the discrepancy between a child’s current level and the level of ability she reaches in solving problems with assistance” (p. 105). According to Larson and Marsh (2006), teachers can create activities in the classroom to promote learning that is outside the developmental level of his or her students and then provide any necessary scaffolding, to broaden the development. “The zone shifts forward and new challenging activities can be presented that draw on the child’s previous experience” (Bruner, 1975; Saracho and Spodek, 1993). For this shift to happen, students must take an active role in their learning.

**Research Question**

With increasing standards and accountability, new ways of assessing students’ knowledge are being implemented in schools. Considering this, how are teachers using formative assessment to improve their instruction and student learning in middle school classrooms?

**Literature Review**

A review of literature indicates that formative assessment, which aims to provide students and teachers with feedback necessary for determining instruction, is made up of several approaches. The teacher plays an important role in using formative assessment but faces many challenges in doing so. There are positives and negatives to any approach but in the following
sections, purposes, roles and challenges, and the benefits of formative assessment will be discussed in greater detail.

**Different Purposes of Formative Assessments**

The term ‘formative assessment’ is referred to by different names throughout the various articles in this review. One such name is ‘assessment for learning’ (Olga Gioka, 2008; Blanchard, 2008; Priestley and Sime, 2005). Formative assessments are considered to be “for learning and not assessment of learning” and often occur while instruction is in progress (Ruiz-Primo and Furtak, 2007, p. 57). There are multiple types of formative assessments including convergent and divergent, formal and informal, as well as computer-based and computer-adaptive (Miller and Lavin, 2007; Ruiz-Primo and Furtak, 2007; Sharkey and Murnane, 2006). Each of these will be explained in more detail in the following paragraphs.

Miller and Lavin (2007), suggest that in convergent formative assessments, the teacher sets goals for students and assess whether students achieve them. This means that the role of the students’ is inactive (Miller & Lavin, 2007). On the other hand, a divergent formative assessment requires teachers to understand how students think and incorporate students’ input in setting and achieving these goals (Miller & Lavin, 2007). It seems as though for students to partake in their own learning, their motivation to succeed increases, as they have a say in what and how they learn.

In one of two articles, Ruiz-Primo and Furtak (2007) discuss two types of formative assessments they have observed in their research. A formal formative assessment is a planned assessment, focusing on collecting information on student learning in a whole group setting. Informal formative assessment is more interactive, placing focus on collecting information on student learning in any given situation, whenever there is communication between student and
teacher (Ruiz-Primo & Furtak, 2007). They continue with their definitions of each assessment in
a second article (2006) giving more in depth examples. Formal formative assessments begin with
the students working on an activity previously created by the instructor, enabling the teaching to
gather more precise information. This assessment usually concentrates on a specific facet of
learning. Teachers can observe parts of the lesson and look for comprehension and then prepare
for what needs to follow to move students forward. Informal formative assessments can be
nonverbal and often go unrecorded. Understanding these outcomes is usually more immediate
and must take varying forms. Ruiz-Primo and Furtak (2007) go deeper with their definitions and
examples when they argue that informal formative assessment that aids listening to investigation
should do three things. The first should elicit, involving discussions between students who share
their thinking and ideas and what is produced from that. Second, it should allow teachers to
recognize student involvement. Finally, informal assessment can permit teachers to utilize
students’ contribution as a catalyst to develop questions and activities that will encourage and
support learning.

It is essential to consider the ZPD, or Zone of Proximal Development, of the students in
the classroom. This is the window in which students learn. It is the area where students are able
to work independently and what they can do with guidance or in collaborative groups (Leat and
Nichols, 2000). Scaffolding is seen as the assistance given to a student by the teacher, or adult.
One characteristic of scaffolding, as it applies to formative assessment, is demonstrating how to
achieve goals, or modeling (Leat & Nichols, 2000).

Sharkey and Murnane (2006) acknowledge two types of formative assessments,
computer-based and paper-based, although paper-based is rarely mentioned throughout the study.
As well as the computer-based assessments are computer-adaptive assessments. Both have
advantages and disadvantages that need to be considered before implementing into the classroom. Some advantages of computer-based formative assessments are the speed and simplicity of scoring and the accessibility of student results (Sharkey & Murnane, 2006). Another advantage to computer-based assessments is the ability to easily access student development longitudinally (Sharkey & Murnane, 2006). Disadvantages might be with the increased use of technology, students often become less interested in paper-based assessments; further computer based multiple choice questions are more generic rather than focusing on the individual (Sharkey & Murnane, 2006). These assessments do not provide teachers with information in regards to student proficiency in “answering open-ended response questions – often a downfall of struggling students” (Sharkey & Murnane, 2006, p. 582). There are other disadvantages that go beyond the classroom, such as placing a strain on the school district’s infrastructure, an insufficient supply of computers available, and the occasional loss of internet access (Sharkey & Murnane, 2006).

The difference between computer-adaptive and computer-based assessments is that computer-adaptive assessments ask questions depending on the skill level of each student, revealed by answers to prior questions; whereas computer-based assessments ask the same questions to each student, aligned with state learning standards. These are calculated to foresee student performance and the results from this test are restricted to whether the student has accomplished mastery on the tested skills (Sharkey & Murnane, 2006).

Frey and Schmitt (2010) argue that assessments should be performance-based and often created by the teacher (108). Teachers are familiar with the curriculum; they recognize what has been taught and how it was taught and therefore, know what and how to assess students’ progress (Frey & Schmitt, 2010). In the study, no correlations were discovered between teacher
experience and the use of formative assessments in the classroom (Frey & Schmitt, 2010). Results of this study show that formative assessments are not common and often times do not affect students’ grades.

Pedagogical documentation is used as a formative assessment in a study conducted by Buldu (2010). The teaching participants in the study claim that the information gathered from the pedagogical documents provided them with information on whether alterations were required in teaching or in the students’ learning (Buldu, 2010). The teachers argued that it assisted them in choosing where the learning should go next, what additional learning was required by students and what resources would be crucial for this learning to take place (Buldu, 2010). It also made the teachers conscious of their own teaching. In terms of how pedagogical documentation contributed to student learning, participants stated four themes: 1) scaffolding students’ learning; 2) a community of learners is created; 3) an increase in participation, motivation, and interest; and 4) an increase in students’ self-awareness (Buldu, 2010).

Yin et al. (2008) reported that, based on their research, planned, or embedded, formative assessment offered support for the complexity and significance of successfully implementing formative assessment. Merely placing assessments in to the curriculum will not influence students’ learning and motivation, unless teachers use the information from embedded assessment to adjust their teaching (Yin et al., 2008). The authors conclude by stating teachers need to acclimatize formative assessment to the needs of their students and to the needs of themselves. Teachers cannot rely solely on formative assessments as it does not promise enhanced learning and teaching (Yin et al., 2008).
Some approaches for successful formative assessment include, but are not limited to, preparing for learning rather than doing, making learning objectives and criteria perceptible, mind-mapping, modeling how to execute an assignment, discussion partners, think-time, self-assessment and peer assessment, targets, highlighting and traffic-lighting achievement against criteria, and placing students in the teaching role (Blanchard, 2008). In order for these to work, it is important for teachers to remember that they, too, are learners. There needs to be flexibility in planning and the teacher needs to be able to adapt lessons and activities to the needs of the students. Teachers also need to keep students involved in their own learning. Students need to know why they are participating in the activities and have a reason for doing so. Sharing ideas and trying new things are also important. Another characteristic of successful formative assessment in the classroom is applying the feedback received in diverse situations in the future (Blanchard, 2008). If teachers make clear things like the purpose of the activity or lesson, the method and criteria, then they will bring transparency to critical matters that can guide the students. When teachers expect and permit students to play a lively role in deciding within the group and for themselves the purpose, the methods and criteria, they promote interactivity (Blanchard, 2008).

The Role of the Teacher and the Challenges they Face

Research has shown that how a teacher implements formative assessment into the classroom depends on the teacher and their experiences. In a study conducted by Buck and Trauth-Nare (2009), the implementation of formative assessments was examined in middle school science teachers. It was found that many teachers did not feel that formative assessments
were a necessary addition to their already saturated workload. Reasoning for the use, or lack thereof, of formative assessments was often influenced by the teacher’s insight of the students’ abilities and the curriculum (Buck & Trauth-Nare, 2009). The study observed four science teachers’ and found questioning the class as a whole was most commonly used; however, the majority of questions examined only low level recollection of what students know. When a teacher understands a student’s thinking, they can select more supportive strategies for helping learners move towards a deeper understanding. It was found that teachers have to be proficient when evoking and determining ideas expressed by students, and use those responses as a source to guide the following lessons in a way that will support learning (Buck and Trauth-Nare, 2009). Through parts of the study, teachers engaged students in both whole group and individual discussions about the purposes and the forms of formative assessments (Buck & Trauth-Nare, 2009). The results of the study concluded that after implementing formative assessment strategies within the classrooms, teachers noticed an increase in student participation in the development of formative assessment. In contrast to high-achieving students, other students who had customarily operated unsuccessfully accepted the formative process and started to thrive within the classroom (Buck & Trauth-Nare, 2009).

In a similar study, Gioka (2009) explored how science teachers examined their role in teaching and assessing students. This study focused on assessment and feedback given to students, both orally and written. It is important to consider the language the teacher uses. An important role for the teacher when it comes to using formative assessment is the elicitation of evidence of students’ current ability and the stipulation of feedback to the students in terms focused on the task at hand, rather than terms focused on the self. Teachers have a challenging role. On one hand, teachers have to instruct and support how students learn. On the other hand,
the teacher has to assess and examine and grade students (Gioka, 2009). In this particular study, teachers gave limited feedback and students were left on their own to decide how to move forward with learning (Gioka, 2009). The focus of the teaching, in the current study, was on the completion of the assigned coursework. Seven out of the nine teachers observed taught to the test and failed to implement effective formative assessment strategies.

Teachers need to provide constructive feedback, doing so by giving praise and criticism. They need to allow students time to respond to work that has been evaluated and returned. They also note that it is important for teachers to only give feedback that is going to enhance students’ work. It is crucial for teachers to find out what students already know and allow time for them to improve. Allowing self and peer assessment is also imperative when using formative assessment. A supportive environment is also necessary. One of the most important findings in a study by Gioka (2009) is that teaching is about helping students increase knowledge and move forward (Gioka, 2009). As in Gioka’s study (2009), Priestly and Sime (2005) found different strategies to formative assessment that teachers need to consider. Allowing for more time when answering questions, sometimes known as ‘wait time,’ is important. An example used in the study was *Think, Pair, and Share*. Reducing emphasis on grades allows for more written feedback and gives teachers the opportunity to focus more on conferencing with students. Self-assessment, as well as peer-assessment was also used throughout the study. Examples included by Priestly and Sime (2005) were traffic lighting and hand signals, as well as show me boards, or whiteboards used during group work (Priestly & Sime, 2005). Teachers have also fostered conversation that causes contemplation with and between students and have worked to make the learning goals of classroom activities clear to students (Priestly & Sime, 2005). Dialogue between students,
Dialogue was mentioned in many studies as a key to effective formative assessments. One such study was conducted by Fox-Turnbull (2006). It is important to remember that if teachers lack content knowledge, formative interactions will become unclear with students (Fox-Turnbull, 2006). This means that if teachers do not understand the material they need to teach, influential communication between teacher and students will be confusing and ambiguous. During these interactions, teachers need to allow students the chance to discuss their thinking and justify their choices (Fox-Turnbull, 2006). Giving students the chance to talk about their work not only assists in their growth and knowledge but gives teachers important understanding into students’ thinking. Teachers may use this as a chance to respond to the students concerning the quality, usefulness or practicality of their thinking by asking questions that broaden students’ comprehension (Fox-Turnbull, 2006). Leat and Nichols (2000) revealed in their study that teachers reported their surprise at the worth of the contributions to group conversation by students who had until now been thought of as less capable (Leat & Nichols, 2000). In group discussions, oral contributions expose higher levels of comprehension than any form of written work, including students of lower ability levels, without taking into account the ability of those in the groups (Leat & Nichols, 2000).

As important as dialogue is in this study, teacher knowledge is equally important. It’s not just knowledge in a specific content area or subject, but knowledge of one’s students is crucial in effective in the use of formative assessments. In a study by Sharkey and Murnane (2006), obstacles from their research show that some teachers do not have the understanding of how to make conclusions about students’ comprehension and skills based on the outcomes of well
planned assessments (Sharkey & Murnane, 2006). Teachers do not recognize how to decipher information about what students’ already know into meaningful plans for instructional progression (Sharkey & Murnane, 2006). Some teachers in this study, however, believe that they know how to analyze student work, they just lack the time to do so (Sharkey & Murnane, 2006).

In another study examining teacher knowledge, Heritage et al. (2009) describe a study measuring math teachers’ knowledge. In this study, teachers used assessment information to gather what students did and did not understand about main ideas, and make a decision about what would be taught next based on those conclusions, and what advice they would offer to students to help them develop (Heritage et al., 2009). The study concludes that until teachers have better picture of learning to work with, the deeper understanding of how the fundamentals of student learning are established, then the progression from evidence to action as a flawless process seems to remain, to some extent, an outlying goal (Heritage et al., 2009).

The Benefits of Using Formative Assessment

There are many benefits associated with the use of formative assessments. In a study conducted by Blanchard (2008) formative assessment is referred to as ‘Assessment for Learning’. It involves communication and dialogue between students and teachers. Both students and teacher need to reflect on and appraise their work. This will help students develop a stronger awareness of their capabilities, a stronger self-confidence, and foster greater independence, leading to better autonomy in their learning. Enforcing assessment for learning means creating processes in the classroom and throughout the school (Blanchard, 2008).

Ash and Levitt (2003) question how teachers are transformed using formative assessments and how the transformation is characterized (Ash & Levitt, 2003). In this case,
while the learner attains knowledge of the subject, the teacher makes gains in the capacity to configure content, as well as enhance the techniques and methods that make up pedagogical content knowledge (Ash & Levitt, 2003). In other terms, as the students’ learn, as do the teachers. Ash and Levitt (2003) continue discussing this transformation stating it happens as teachers and students acknowledged each other’s thinking and proceedings, and as they better understood the meanings related to them (Ash & Levitt, 2003).

Orsmond et al. (2004) reinforce the idea that feedback is necessary for valuable formative assessment. In order for formative learning to take place efficient feedback must be given to students (Orsmond et al., 2004). If information is merely stored in one’s memory, it is not considered feedback (Orsmond et al., 2004). The issues in the study focused on how feedback was constructed, how one interprets the feedback, and how the feedback is used to make sense of the context (Orsmond et al., 2004). It was found that in order to construct significant feedback, it is important to obtain what students already know of the assignment. This was followed by examining students’ understanding of the assignment criteria. Next came evaluating self and peer scores and comments made by others. This variety of information helped make it possible to provide students with fitting feedback (Orsmond et al., 2004).

Another study reinforcing the importance of feedback states, feedback is an important tactic of formative assessment (Fluckiger, Tixier y Vigil, Pasco, and Danielson; 2010). The authors continue that feedback must be explicit, straightforward, explanatory, and focused on the assignment (Fluckiger et al., 2010). This allows students to set straightforward expectations for themselves and how to influence their future achievement. In conclusion to the study, the authors found that when incorporating formative assessment during a class, they then have the information needed to modify instruction to better meet the needs of students. Offering feedback
that is truthful and reasonable requires teachers to review the initial objectives of the lesson or activity and then support modifications and inclination (Fluckiger et al., 2010).

**Methods**

**Context**

Research for this study will occur in two middle school classrooms. I will be observing two different teachers and their teaching methods. I will be focusing on their use of formative assessments and how they use this as a way to improve their instruction and student learning. The school I will be conducting my study in is located in a small rural town in Western New York. Throughout the study, the school will be referred to as Port Young middle school, or PY middle school. The school district includes three schools and serves approximately 1,770 students in grades pre-kindergarten through twelfth grade. Within the Port Young school district, 18% (30) of students have an IEP (Individualized Education Program). IEP’s are written plans for students eligible for special needs services. The school district currently services 1% (10) English Language Learners, or ELL students. These are students in the process of acquiring and learning English language skills.

According to the National Center for Educational Statistics website (NCES.ed.gov), there are approximately forty-seven classroom teachers in the PY middle school, a total of 173 teachers in the district. There are a total of 419 students in the PY middle school. Enrollment for each grade in the middle school is as follows: 151 6th graders, 143 7th graders, and 125 8th graders. In that population, there are no American Indian/Alaskan students, only one Asian/Pacific Islander student, approximately five Black or African decent students, four Hispanic students, and 408 White students. Of the 419 students, 208 are male and 210 are
female. There are 130 students eligible for free lunch and 50 students eligible for reduced-price lunch.

Participants

The teachers in this study are similar in many ways. Both teachers are white females in their early thirties. Teacher M has been teaching for seven years, three of those years in the PY middle school. Teacher M’s first two years in the district were spent teaching in the elementary school. This is her first year teaching at the middle school level. Teacher M has her teaching certification in English Language Arts (ELA) for grades seventh through twelfth grade, as well as Childhood Elementary grades pre-kindergarten through sixth grade. Her master’s degree is in Educational Technology. Teacher H has been teaching for six years. Five of those years were in the PY middle school and one year was a long term teaching substitute position at another rural school district not far from the PY district. Teacher H has her teaching certification in Math grades seventh through twelfth and has a master’s degree in Literacy grades sixth through twelfth.

The only time students will be involved in the study is when I am observing the teacher in practice. Student work will be looked at after class and examined. Student interaction and participation in this study will not be first hand.

Researcher Stance

As a researcher, I was a passive observer within both classrooms. I remained a non-participant in all matters of the classroom. My focus throughout the observations was solely to collect data. I am currently a graduate student at St. John Fisher College. I am in the process of
obtaining a Master’s Degree in Literacy ages Birth through Twelfth grade. I have a bachelor’s degree in Childhood Education and English. I currently hold my New York State teaching certification in Childhood Education grades first through sixth, as well as a teaching certificate for English Language Arts grades seventh through twelfth.

I am close friends with the special education teacher at PY middle school that works with the two teachers in this study. I have been friends with the special education teacher for approximately four years, and she recommended her school and co-workers for this research study. She remained present for most of the observations in this study.

Method

During this study, I will be observing two middle school classrooms. The students in these classrooms are aware of my presence but do not pay much attention to me. I will observe each class at least three different times. Throughout these observations, I will look for the different styles of formative assessments as defined by the literature used by each teacher and how the class responds, both wholly and as individuals. Along with my observations, I will interview both teachers about their thoughts on formative assessment as it is used in their classrooms (see appendix A for interview questions). In the interviews, I will also ask about the teacher’s background with formative assessment and how they think implementing formative assessment has guided their instruction and improved the learning of their students. I will also look at student work and analyze the feedback and response of the teachers to their students.

Quality and Credibility of Research
Throughout the study, it was necessary for me, as the researcher, to ensure credibility. According to Mills (2011), credibility refers to the researcher’s capability to consider the complexities that appear in the study. A variety of data sources were used in order to cross check data. This is called triangulation. Three different methods of data collection were used in this study: observations, teacher interviews, and collection and analysis of student work.

Transferability, as defined by Mills (2011), refers to the researcher’s belief that everything in the study is based on the given circumstance and not to be thought of as truth to larger groups. Some of the methods and findings are comparable to other studies that have been conducted in the past and comparisons can be made that may show some significance.

Dependability of the study must also be assured. Mills (2011) refers this to the constancy of the data collected. To do this, I use triangulation, collecting data from multiple sources. Confirmability is the impartiality of the data that was collected, as defined by Mills (2011). Again, this was ensured by the use of triangulation. The three uses of data collection, in this particular study observation, interviews, and analysis of student work, were all compared.

**Informed Consent and Protecting the Rights of the Participants**

Before beginning my research, I needed to collect consent from those willing to participate in the study. All forms explained the purpose of the research study, the rights each participant had, and a guarantee that all names would be removed and only pseudonyms would be used. Parental permission slips were sent home to the parents of the middle school students explaining the purpose of the study and the rights guaranteed to them if they were to allow their child to participate. It was made clear on the permission slip that the focus of the study was mainly on the teacher, not on the students. The only time their child would be involved would be
if their work was chosen and analyzed. If parents did not send the permission slips back, their child’s work would not be used in this study. Students were briefed by their teachers that there would be an observer in the classroom on random days over the course of a few weeks. Students were told that the observer would be focusing on the teacher, not the students. Each student was given an assent form explain the rights of the students. If they were willing to participate, they signed the form and returned it. Each of the two teachers was given consent forms as well. As the other forms of permission, this form explained the study and the rights guaranteed to each participant. When all necessary signatures were collected, research was able to begin.

**Data Collection**

Data sources used in this study included teacher interviews (Appendix A), field observations, and a look at teacher comments on student work. These three sources provided specific data on the use of formative assessment in four different middle school classrooms led by two different teachers.

*Field Notes*

Extensive field notes were collected in two different grade level classes for both teacher M and teacher H. The notes taken in each class reported teacher instruction and guidance throughout the class, student behavior and engagement, teacher response, as well as student response. The focus of the field notes was to get a better understanding of the interactions between teacher-student and student-student when applicable.

*Teacher Interviews*

Another data source used in this study was a teacher interview (Appendix A). The interview was the same for both teachers. It was originally planned for the interview to be done
in each teacher’s classroom at the conclusion of the final observation. This was possible because both teachers had planning periods or a lunch period following the scheduled observations. Due to time constraints and unplanned events, sit down interviews were not possible for either teacher. The interview was emailed to each teacher. The teachers were given a week’s time to answer nine questions in their own words, any way they wished to answer.

Teacher Comments

The third data source used was only applicable to one of the teachers. Student work was turned in and graded by the teacher. Without looking at names or student response, teacher comments were noted. The focus of the study has not been on student work, but particularly teacher centered. Therefore, looking at the student responses was not necessary. When student work was looked at, student response was overlooked and the focus was on what the teacher said.

Findings and Discussion

This study was designed to better understand how learning occurs in the middle school classroom, focusing on the use of formative assessment. Data was collected on two different occasions. On the first occasion, teacher M was observed teaching English Language Arts (ELA) to a seventh grade class, as well as an eighth grade ELA class. The next set of observations took place in teacher H’s classroom during a seventh grade math class and an eighth grade algebra class. Following all of the data collection, it was necessary to analyze each piece and determine reoccurring themes. Three themes were present among each data source: teacher response, student resistance and engagement, and strategies.
Classroom Management and Formative Assessment

The first theme that emerged from the data was teacher response, both through discussion and on student work. Teacher response and how they use dialogue with students is an important factor in formative assessment. The first teacher to be observed was teacher M. Both of teacher M’s classes worked in the computer lab on webquests. A webquest is an assignment where students must access the internet and search specified websites in order to answer questions.

The first class observed was eighth grade. When students entered the computer lab, directions were immediately given on a half sheet of paper. When the majority of students had begun their task, teacher M explained the webquest and how she wanted class to go. She allowed students to work together with someone sitting near them. In this case, students had picked their own seats upon entering. Field notes show that there was little teacher guidance after directions were given. If a student raised their hand or asked a question, teacher M responded by restating the question or by rewording a sentence or two online. For the most part, however, students assisted those sitting around them as the teacher quietly observed. When teacher M heard similar questions between students, she reworded the question on the webquest for the whole class, explaining what she was looking for differently.

In the second class observed, a seventh grade class, seats were assigned by post-it notes on computers in the lab. Teacher M gave out directions on a half sheet of paper, as she did in the eighth grade class. When teacher M saw most students talking, she asked for them to turn their bodies and put their hands on their heads to let her know they were ready to move on. The students in the class were also working on a webquest, but were given more direction than the eighth grade class. Teacher M read over question one and had the whole class search for an answer together, explaining aloud each step that was taken. When students were ready to begin
working, teacher M let them work independently. However, when students worked together, she did not stop them.

Both classes worked diligently, with little disruption. Guidelines for the assignment and teacher M’s expectations were clearly given and students followed along. There was evidence of control over the environment and structure in both classes.

The observations in teacher H’s math classes were very different than those conducted in the two ELA classes. In the seventh grade math class, teacher H began class with instructions on how class would go. Teacher H told students there would be a test later that week. A review sheet of equations was handed out and students were informed they had the whole period to work on it and that it would not be collected or graded. She also said that some students would not complete the review sheet. After students began working on the review sheet, the teacher walked around the room giving marking period grades.

Throughout the class, teacher H had to constantly remind a number of students about points being given for the work they are completing. According to the directions at the beginning of class, this seemed to go against what they had already been told. Two male students in particular were having a conversation with each other, laughing loudly. When teacher H continued reminding them about the work they needed to complete, the boys get louder and defensive, insisting that they were working. On the other side of the classroom, another male student was reading a book instead of completing the review sheet. Teacher H politely asked the boy to put the book away and work on his math. The boy ignored her and continued to read throughout the entire class period. With two talkative female students, teacher H gave the girls the option to change their seats or go to the principal’s office. Their volume decreased, but the girls did not work on their worksheet. The remainder of the class was consistent with the same
behavior; teacher H kept trying to get students to focus by telling them to stop what they were doing and “get going.” With all of the distractions, including pencils being thrown across the room, teacher H did little to correct behavior. Evidence shows that teacher H had little control over her class during this period.

In the second class, eighth grade algebra, similar behavior was seen. Students were given a review sheet and told that it would not be graded. More time was spent at the beginning of class explaining the review sheet to students. When trying to go over examples on the smartboard, students were talking loudly to each other, paying little to no attention to teacher H. “If you don’t stop talking, the sheet will be graded,” she said loudly to the whole class. Her words did little to stop student disruption as the class continued talking. Again, teacher H had to stop and warn the class that she “will not continue until it’s quiet.” The class gets quiet, but talking around the room continues. When she continues at the front of the class, teacher H asks for student input. When no one responds, teacher H continues and inputs what she was waiting for students to do. In the midst of her review, teacher H had to stop instruction and relocate students. Only two male students were moved. This did little to improve the class focus and disruption.

After the review as a whole group, as in the first class, teacher H began walking around the room giving grades. When a female student, one of few students who has been eagerly taking notes while teacher H worked on the smartboard, raised her hand and said that she did not understand one of the questions on the review sheet, teacher H responded by telling her to take out her notes from a previous class. Teacher H also reminds her about two parts of a math equation and then continued around the room to other students giving grades. As in the first
class, there was little evidence showing structure in how the class was conducted. Teacher H did more reprimanding than instructing and assisting in both classes.

When analyzing field notes from the four observations, the teacher response varied greatly between teachers. Teacher M remained quiet and somewhat an observer in her classes. She assisted when needed but left the students in charge of their pace and their learning. There was a lot of peer assisting that occurred and little distraction. Teacher H, however, was constantly raising her voice trying to reprimand students. She gave little direction and little guidance when needed.

Teacher response was not only important in the actual class, but on student work as well. Teacher M collected the completed webquests from students. Although they were graded, the comments given to students were encouraging. When teacher M wanted more details in an answer, she would write things like, “where else do you think you could find this?” and “are there more details you could add?” Other examples included, “where did you find this?” and “what more do you think you could tell me about this?” There were many positive words written to the students. A few examples were, “original ideas, very nice!” and “I really like how you used details to explain your ideas!” Teacher H did not collect the review sheets she handed out in both classes observed and therefore, written response was unobserved.

**Student Resistance and Engagement**

Another important theme that frequently appeared in the data was student resistance to the lessons being conducted. There were many forms of resistance in both classes. Evidence from field notes show that teacher M had fewer students resisting her than teacher H had in her classes. In the field notes, the only form of resistance seen in teacher M’s classes was in her
eighth grade ELA class when a male student whispered to another male student, “this sucks.”

There was no resistance observed in the seventh grade ELA class. Student engagement was very apparent in the ELA classes.

Resistance to teacher H was frequent in both classes. In the seventh grade class, students talked throughout the entire class. When teacher H asked students to get working, few, if any, worked on their review sheet. When students were seen by teacher H not working on their review sheet, she tried calling students names aloud to draw attention to them. This did not seem to faze the students, as they often did not hear her. At another point in the class, while teacher H was giving out grades, a male student laughed loudly when he received a very low grade. After receiving grades, students talked more with each other about their grades than they did the review. The room was loud during the whole observation, despite efforts teacher H made to quiet it down. The same was apparent in the eighth grade algebra class. Despite efforts made by teacher H to gain control and quiet over her students, there was constant talking. Students discussed lunch plans and other teachers. The biggest distraction was discussion of grades. There was an overall lack of engagement seen in both math classes.

Formative Assessment Strategies

In the data collected, it was found that the two teachers had very different ways of teaching their classes although both claimed to be using formative assessment. In teacher M’s classroom, written directions were given to each student. There were activities for students to complete while they waited for computers to load. A formative assessment strategy, a webquest, was the focus of both ELA classes. Students could work in small groups or independently in the eighth grade class. Students assisted other students when needed, another aspect of formative
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assessment. Teacher M also modeled her expectations for each class. At the conclusion of both periods, teacher M had students pick out a “grab bag ticket out the door” in which students had to answer one question based on the reading they had done the night before. Once they finished, they could line up at the door and leave. According to teacher M’s interview, this is a “non-threatening/non graded way to collect information on the content you are teaching to see how students are progressing.” These types of formative assessments are used “on a daily basis,” according to teacher M. Other strategies used by teacher M, as mentioned in her interview, are “ticket out, top ten (or five) list, an organizer, sort, placemat, or brainstorm carousel to gather data, close gaps and reinforce concepts.”

The only formative assessment strategy observed in both of teacher H’s classes was the option of working in small groups or independently. Teacher H stated in her interview that she uses “short assessments that are given during class time to see student achievement and understanding.” However, this was not seen during the observations. Teacher H stated that she used three other forms of formative assessment in her classes: 1) Questions at the end of the class that students have to answer and turn in for me to see common misconceptions; 2) Opening activities that allow me to see what students remember from the day before; and 3) Writing a paragraph or sentence to explain something that has been taught. None of these, however, were observed. Modeling, a formative assessment strategy, was seen only in the eighth grade algebra class.

Implications and Conclusions

The findings from the research hold many implications for teachers at all grade levels, not just middle school. The findings give insight as to how formative assessment is used in
middle school classrooms. It shows how the use of formative assessment can create structure and engage students. The findings also show that the lack of formative assessment can cause resistance to what the teacher is trying to accomplish.

An implication from this study is that implementing the use of formative assessment can create structure for students. It was seen in the two ELA classes that the use of multiple forms of formative assessment created a structure for students, allowing for them to know what was expected and how to accomplish the goals set by the teacher.

Based on the literature reviewed and the research data, students engage and respond better to the use of formative assessments. I have learned that positive communication with students, both oral and written, helps not only with student motivation, but their willingness to cooperate and participate in class. Having activities or assignments for students to complete allows less time for disruption and talking. Modeling what you expect from students is important as it lets students know how to complete a task. Giving the option for students to work in small groups may open the floor to more questions from students.
References


doi:10.1080/09585170500384586


doi:10.1080/09585170500384586


Appendix A

Formative Assessment Teacher Interview

Teacher's Name: ________________________________________________________

1. In your own words, define formative assessment.

2. How do you use formative assessment(s) in your classroom?

3. What benefits do you see in using formative assessment(s)? Please give specific examples if you can.

4. What challenges do you see in using formative assessment(s)? Please give specific examples if you can.

5. How has the use of formative assessment(s) guided your instruction?

6. What kind of growth or lack thereof have you seen in your students since the implementation of formative assessment(s)?
7. What types of resources (books, professional developments, etc.) are available to you within your building/school district to help you implement/learn about formative assessment(s)?

8. What advice would you give to teachers who have never used formative assessment(s) in the classroom and would like to start?

9. Anything you would like to ass about formative assessments that you think might enhance this study and it’s research …