Introduction to the Vignettes

The CCSSO definition of formative assessment agreed to during October 2006 in Austin, Texas has been the starting point for the work of the FAST SCASS. For ease of reference, it is presented below:

> *Formative assessment is a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students' achievement of intended instructional outcomes.*

Moving beyond that definition, the group isolated the attributes of formative assessment which, based on empirical research, would render it most effective, and then provided careful articulations of each attribute. The attributes articulate the notion that effective formative assessment is *embedded in instruction* and incorporates the following: *learning progressions, learning goals, descriptive feedback, collaboration*, *self- and peer-assessment*. A brief descriptions of each attribute is provided below.

Learning Progression: The formative assessment process should be structured in accord with a carefully conceived learning progression.

Learning Goals: Learning goals and criteria for success should be clearly identified and communicated to students.

Descriptive Feedback: Assessment-based descriptive feedback should be a feature of formative assessment.

Embedded in Instruction: Teachers should collect evidence of how students' learning is progressing *while* they are instructing.

Collaboration: A classroom culture in which teachers and students are partners in learning should be established.

Self- and Peer-Assessment: Substantial self- and peer-assessment should be an integral component of formative assessment.

The purpose of this document is to provide another way to think about formative assessment by sharing some classroom examples of formative assessment in practice. Documenting these vignettes led to some interesting conversations about what exactly was being illustrated by the examples. From these conversations emerged two set of vignettes. In the first set, the vignettes are very short descriptions of classroom practice, some of which—according to the above FAST SCASS definition—represent formative practice and some of which do not. Thus, examples and counter-examples are used to illustrate what formative assessment is and is not.

The second set of vignettes are more extended descriptions, and taken from teacher observations conducted in a variety of schools across the US. These vignettes aim to illustrate formative assessment practice across a range of grade levels and content areas. These examples illustrate exemplary formative assessment practices, and the interconnectedness of the various attributes of effective formative assessment. To that end, each of the second set of vignettes will provide a description of the classroom activities of a particular teacher and class of students, followed by a brief analysis that relates the actions of the teacher and students to one or more of the six attributes of effective formative assessment, although a particular formative assessment practice may not exemplify all six attributes.

The two sets of vignettes provide two views of formative assessment: first it is important to recognize what it is and is not, then that on-off understanding can be refined so that an understanding of accomplished formative assessment practice begins to emerge. This is akin to learning to appreciate jazz. The first step is to be able to distinguish jazz from blue grass or funk. Recognizing the broad genre is an important prerequisite before moving on to learn about how the various aspects of jazz music such as blue notes, call-and-response, improvisation, and syncopation all work together to create a musical performance.

Vignette Set A: Is it or isn't it formative assessment

Vignette 1: Biology, High school

Leon Taylor, a high-school biology teacher, frequently makes changes during-class in his planned instructional activities based on a series of True-False quizzes he gives students each week. At numerous points in a lesson, Leon reads aloud a prepared biology-related statement, then asks students to hold their hands under their chins and signify whether the statement is true or false by showing him a "thumbs-up" for true and a "thumbs-down" for false. If Leon finds that a third or more of his students are missing any item in these non-graded quizzes, he immediately re-teaches the same content, but does so using a different instructional approach.

Leon is using an informal assessment approach to collecting the evidence he needs for instructional adjustments, and then proceeds to make those adjustments. This is, therefore, definitely an instance of formative assessment.

Vignette 2: Elementary School

Mrs. Frost, a fourth-grade teacher, checks her students' mastery of all significant goals for any of her instructional units that last three weeks or longer. She gives students a non-graded "dress-rehearsal" exam—similar to the exam she will give at the unit's conclusion—but does so four days before the end of the unit. Based on her students' dress-rehearsal exam performances, the teacher is able to identify significant areas of struggle for her students. Mrs. Frost does not plan the last three days of instruction in the unit until she has reviewed student responses. She then creates small group and whole class instructional activities to review the concepts of the units and to help students make connections across the concepts of the unit. She does not review responses to specific test questions.

In this situation, Mrs. Frost is clearly using assessment-related evidence to adjust her ongoing instruction for the last three days of the unit. This example is a clear-cut case of formative assessment. In a best case scenario, however, Mrs. Frost would be supplementing this near-end-of-unit assessment with more frequent smaller-grained formative assessment practices during the unit so that if students did not understand a fundamental concept early in the unit she would not attempt to build on that concept until she was sure that all students understood.

Vignette 3: Mathematics

Although he does not use en route quizzes to modify his own instructional procedures per se, Jeff Jacobs believes his mathematics students need to make sure the procedures they're currently using to learn math are working properly. Accordingly, at the end of each week in the semester, he administers a brief, non-graded quiz. He selects questions for this quiz that he knows students with misconceptions about the content will struggle with. The primary purpose of these quizzes is to help students decide for themselves whether the way they are tackling their math assignments is working and he provides feedback to them. After each quiz Mr. Jacobs recaps some of the study procedures that might be particularly helpful for his students. In addition he reminds them when he is available for consultation if they want additional time. He also often makes comments directly on student quizzes with suggestions for other resources for the students to consult, or other students who have grasped the material. He provides 15 minutes at the start of Monday's class for students to either work with him, a peer, an online reference, or a text book in order to clear up any misconceptions from the previous week.

This is a rare situation in which a teacher does not make assessment-based changes in instruction, but encourages students to make adjustments in their own learning tactics. He carefully engineers the quizzes so that likely problems surface, and then he provides feedback to the students in terms of resources that they might consult for specific problems. Because the definition of formative assessment allows for evidence-based adjustment by students, this is an instance of formative assessment.

Vignette 4: Structured Pair-Work

Each student is provided an appointment clock. Each student must make an appointment with three students for discussion later in the lesson. Once all the appointments have been made the teacher begins the lesson by providing information and posing questions that require higher-order thinking regarding the information. The students are asked to reflect on the information themselves and to answer the questions. Next the students are asked to go to their first office visit and spend the next 15 minutes sharing their thinking related to one or two of the posed questions, analyze each others thinking and to try to reach a consensus on the answers. As the students are in their small groups, the teacher is able to walk around and note common misunderstandings, gaps in understanding, and complete understanding. At the conclusion of the first appointment, the teacher uses the information to help redirect thinking, reinforce ideas, or to provide cues that would help advance their thinking. The students then go to their next appointment and class continues in this manner until all appointments have been met and all questions have been discussed.

This is an example of formative assessment where the posed questions and the conversations in the small groups are used to elicit evidence of the students' understandings. The students are able to self-reflect and then get feedback from their peers. The teacher is able to listen to the conversations between students to note the current level of understanding for the class and for individual students. The teacher used the evidence immediately to assist students in their learning by redirecting thinking, reinforcing ideas, or providing cues.

Vignette 5: Collective Definitions of Success Criteria

The teacher provides students with an open-ended question related to a concept they are learning and asks the students what they think would need look for in the response that would demonstrate full understanding of the concepts. The teacher makes note of each. The teacher then provides students with examples of several student responses that were given by students in previous years. The students are asked to analyze the responses and to determine if the responses show full understanding, partial understanding, or no understanding of the concepts and why. As this thinking is shared, the list of things to look for when answering the open-ended question is further refined until a set of criteria emerges that students can use to self-assess their own performance when answering similar type problems.

The activity of analyzing student responses provides the teacher with information about how well the class understands the concept and how to demonstrate that understanding. In order to fully participate in the activity, students must self-reflect on their own level of understanding as they analyze the work of others and provide reasons why they think there are gaps in understanding.

Vignette 6: District-Developed Monthly Assessments

District-developed monthly exams are to be administered to all students at the end of each of the school year's first eight months. The exams are based on state-authorized curricular goals for the grade and subjects involved. Because district administrators insist that teachers send results of these tests home to

parents, all teachers do so. Yet, because the content covered by the monthly tests typically doesn't coincide with what is being taught at the time the tests are administered, teachers rarely alter their instruction based on students' performances on the monthly exams.

In this example, we see neither teachers' adjustment of their instruction nor students' adjustment of their learning tactics. Thus, this probably well-intentioned distribution of the monthly exams' results to parents would constitute a non-instance of formative assessment.

Vignette 7: US Government, High School

During many of the class discussions that take place in her U.S. government class, Maria Lopez picks up cues from her students' comments and facial expressions about their understanding of what's being taught. Maria often makes on-the-spot decisions about whether to change her instructional activities based on a single student's comments or expression.

Good communicators often pick up cues from the comments and facial expressions of the people with whom they are interacting, then alter what they intend to say. This seems to be what Maria is doing during class discussions. But this type of off-the-cuff changes in instruction based on such a small segment of the class is not sufficient to warrant the classification of formative assessment, although it could be an important cue for it. This teacher could have monitored expressions among her students and decided to stop for an impromptu poll: thumbs if you feel confident that you understand the material, thumbs down if you do not. Based on the number of thumbs up and down, the teacher now has evidence of student understanding that might then lead to her ask additional questions to clarify the area of confusion, modify instruction, or continue as planned etc. Importantly her next steps are informed next steps based on evidence from all students and not just a few.

Vignette 8: Weekly Quizzes

During the unit, the teacher provides a weekly quiz to each student to provide the student. The quiz covers all of the material covered for the week that students are expected to know. The quizzes are used to motivate students to study for the big test at the end of the unit and to let students know the types of questions they may see on the unit test and to inform them of whether or not they have mastered the concepts before the unit test.

This is not an example of formative assessment because the teacher does not use the evidence from the quizzes to adjust instruction during the following week, nor does she provided any direction to students for them to think metacognitively about their own learning. The only information that the students get is a score for the number of correct answers. This is an example of ongoing summative assessment.

Vignette Set B: Examples of Formative Assessment in Practice

As the reader will note, in this set of vignettes, the analysis relates the particular example back to the six attributes of effective formative assessment, although not every attribute appears in each description. The attributes are characteristics or features of formative assessment that the research suggests are important to the larger practice of formative assessment. As the vignettes illustrate, some instantiations of formative assessment practice do not incorporate all the attributes. For example, a particular example of formative assessment practice might not involve self- and peer-assessment, but it could still be counted as formative assessment. Of course, a teacher with a well-developed tool-kit of formative assessment practices would incorporate self- and peer-assessment on occasion, as appropriate.

These examples should not be viewed as "the" way that a particular teacher operationalized the idea of formative assessment in his or her classroom, but rather one aspect of that practice. One way to consider the vignettes is to focus on the ways that a particular attribute appears across multiple vignettes. For example, the vignettes can inform the reader about the plethora of ways in which formative assessment can be embedded in instruction, or provide insight into variations in teacher and student collaborations.

Vignette 1: Language Arts, Upper Elementary

An upper elementary language arts teacher incorporated various aspects of formative assessment practice during a single lesson, which deepened her understanding of where her students were in their learning, and provided evidence to inform her instructional decision making. This teacher began the lesson by asking a series of planned questions about a story that students had just finished reading. The teacher first reminded the students about their reading learning goals for this week which focused on identifying the main idea and supporting details within a story. Her questions required careful analysis from the students, so the teacher structured her approach by having the students think about their answers as individuals first, then discuss them in small groups to select the best answer. This group answer was then shared with the rest of the class using Whiteboards which designated students held up. With this questioning and group work approach, the teacher was able to identify several groups of students who seemed to be struggling. Summaries of the main idea of the story varied widely in accuracy and clarity, and the teacher was surprised that students were unclear about it. As the lesson was nearing the end, she asked the students to look at the various groups' answers about the main idea, to select the one that they thought was the best answer, and to write down why they made the choice they did. She had students answer using an Exit Ticket – index cards on which students wrote their individual answers and then handed to her as they left the classroom. This approach provided her with a quick way to review student thinking at the individual level, thus providing information that she could use to shape the next day's lesson, depending on how many students within the class were struggling with a particular topic under study.

*Several attributes of effective formative assessment are illustrated in this vignette. As the teacher planned for this lesson to address the **learning goal** about the identification of the main idea, she developed a series of questions to ask her students. In addition, she planned a systematic way to allow students to think deeply about the questions, and to share their thinking with her. Thus, her assessment was **embedded in instruction**. In order for this to be accomplished, the teacher had, over time, established a learning environment that emphasized **collaboration**: students were used to working in small groups and using whiteboards was part of the routine so that the teacher could use these evidence-gathering approaches with little explanation required. Finally, the teacher was able to elicit evidence of student learning using the exit ticket, to support the impression that she had of group difficulties during the lesson, an approach that required little time to review. With this student-level evidence of understanding she was able to tailor her lesson the following day to capitalize on those students who had a deeper understanding of the learning goal.*

Vignette 2: Mathematics, Upper Elementary

A 4th grade mathematics teacher had been working with his students in the area of data analysis, and had recently introduced the class to the concept of using measures of central tendency to summarize data. He was aware of several of the typical misconceptions that students had about the concept of "median." In particular, he knew that students often did not think that ordering the numbers in a data set was a necessary first step, and that students often did not understand how to handle data sets with an even number of elements. He wrote two multiple-choice questions. The first one had an odd number of elements in the data set, and one of the incorrect answers was the middle element from the unsorted set. The second question was similar, but had an even number of elements.

At the start of the lesson the teacher reminded students of what they had been learning so far in terms of various measures of central tendency and wrote the learning goal on the board: "Today we will learn how to select appropriate measures of central tendency."

Students had been using electronic clickers for the opening questions in math class each morning. As a quick review, the teacher asked both questions, and had students vote on the answer. For both questions, almost all students selected the correct answer. He was about to move to the next part of the lesson, when a student said, "But there could be two answers, couldn't there?" He asked the student to explain his reasoning to the class, and the student explained that the problem could be solved in two ways – either select the middle number in the set, or put the numbers in order and then select the appropriate number. The teacher decided to poll the class and asked how many agreed with the student's explanation of two possible answers. About half the class agreed with this student. The teacher, on-the-fly, wrote up two identical data sets on the board, each with five terms, except one set was ordered and the other was not. He asked students to think on their own and then discuss with a partner to decide whether the two sets had the same median value or not. As students discussed this with a partner, the teacher circulated around the groups, making some notes of what he heard in the conversations. After about 10 minutes, he polled the class a second time, and now much fewer than half the students thought that the two sets had different medians. From the notes that the teacher took as he listened to students, he was able to identify several students who had very clear explanations for why the two sets had the same median value. He called on those students first to share their thinking with the class, and then asked students who disagreed to give their explanations. One student who had not previously been convinced by her partner shared her new understanding with the class. The teacher decided that the class was now ready to move on to the planned part of the lesson, but made a note to return to this problem for the class warm-up in three days time.

*Several attributes of effective formative assessment are illustrated in this vignette. The teacher had a clear understanding of the **learning progression** that he wished to move students through on their way to learning the larger **learning goal** of applying and interpreting measures of central tendency. He also was aware of common misconceptions that students have or develop in this particular area, and so created two questions that were **embedded in instruction**. Although students answered his questions correctly, he was still sensitive to the additional evidence provided by the one student who asked the question, and supplemented that evidence by a quick class poll. Realizing that although students were able to complete the procedural steps to find the median value, they clearly did not understand the concept yet, he adjusted his instruction by creating an additional question for them to discuss in pairs. He continued to collect evidence systematically, both through listening to students' conversation and through another poll. After a structured discussion, where the teacher used the evidence of who had a strong conceptual understanding to explain to the whole class, the teacher decided that the class was ready to move on. However, he planned to return to this concept in a couple of days to check that the students had internalized the concept. This teacher used multiple sources of evidence in an effective way: planned questions at the start of the class; class polling to get a sense of the students' thinking; and listening to student conversation.*

Vignette 3: Mathematics, Middle School

A middle school math teacher established a start-of-class routine with her students that she called "Homework Help Board." About twice a week the teacher would assign some problems for students to complete as homework. The routine was that as students came into class the following day and got ready for the start of the lesson, they would review their homework and identify any problems with which they had difficulties. They would write that problem number on the board. They also would look to see if any other students had noted a problem that they felt they had been able to answer correctly, and if they found one, that student would write out the solution on the board. If another student had a different approach to solving the problem or a different answer that student would also write up the alternative solution.

Once all students were in class and ready to start, the teacher would look at the work on the board. If all problems had a correct solution on the board, the teacher would begin the lesson. If there were two alternative correct solutions to one problem, she might point that out or ask students to talk about the two approaches. If she noticed something incorrect, she would ask the class if someone wanted to correct that one. And if a problem had been noted on the board and no solution provided, she would then review that problem, suggesting perhaps a first step or something to think about to see if a student with support could complete the solution.

Most days, the teacher was able to begin the lesson quite quickly as students had been able to resolve all the homework questions themselves. When students struggled to do this, she modified her instruction for that day or the following day in order to review or revisit the topic.

*This formative assessment example focuses primarily on the **collaboration** attribute of effective formative assessment. Students had to **self-assess** their homework efforts, and the classroom culture emphasized collaboration so that students were willing to take a risk and share their approach to a problem that another student had encountered. This approach was a form of systematic data collection that was **embedded in instruction**: the teacher was also able to identify across the entire class which homework problems had caused difficulties. The teacher was able to decide whether to react to this information on-the-fly or to reflect on it and respond in a subsequent lesson. Either way, the information collected by the teacher would cause her to adjust instruction to improve student learning. The student solutions on the board also provided some teaching opportunities to have students think about multiple solution strategies, a particularly valuable approach when students used different representations to display their thinking.*

Vignette 4: Language Arts, Lower Elementary

A lower elementary teacher had been working with his students to teach them how to use the writing process to improve on their own writing and to assist their peers. They were all working on writing personal stories around the topic of animals to publish in a class magazine. He introduced the idea of Two Stars and a Wish as a way of giving feedback. The two stars represent two positive aspects of the piece of work, and the wish is a specific suggestion for improvement. He began his introduction of the idea by talking about how he had given them feedback on their writing before, but that he was going to use this new approach, and that they would also use it when they worked with each other in their writing groups. They talked together as a whole class in general terms about the kinds of things they might write as both positives and something specific that could be improved. They also talked together about the kinds of comments that would not be appropriate to write to a peer.

The teacher then reminded students about the current writing project that they had been working on, and told them that he had written feedback for everyone using Two Stars and a Wish. He returned the work to each student, and told them that they have five minutes to read their essay again, and then to look at his comments. Next, he directed them to talk with their desk partners, to tell them what their feedback was,

and what they think they will do next as they work on their next draft. As students did this, the teacher circulated to help students who had difficulties planning their next steps.

During the next lesson, the students revised their work, and the teacher told them that they would now give feedback to each other using the Two Stars and a Wish approach. He reminded them of the conversation they had about appropriate and inappropriate things to write, to think about the kinds of comments he had written to them, and also to remember about the purpose of these stories for the class magazine. As students worked on reading their partner's essay again, and writing the feedback, the teacher made himself available to any student who wanted help to write the feedback.

The sharing of the feedback was repeated and students had an opportunity to make final revisions before handing the work to the teacher for inclusion in the magazine.

*This example focuses on the following attributes of effective formative assessment: **collaboration**, the use of **descriptive feedback** and **self- and peer-assessment**. The teacher introduced a new structure for the students to give feedback to each other. The collaboration between teachers and students was evident in the way that he modeled the feedback approach, and also gave students an opportunity to think about appropriate and inappropriate things to write. The feedback provided by the teacher not only modeled the approach, but also was part of the learning process for the students. An important aspect of this instruction was that the teacher provided a structure for the students to review the feedback, and think about what they would do in the light of the feedback, using a peer as a sounding board, in order to stimulate action. Giving feedback without the time to react to it is of little value. When it was time for the students to analyze the writing of their peers, the teacher revisited the earlier discussion about the structure of Two Stars and a Wish and the types of appropriate feedback. The peer assessment was done in quite an informal way, without descriptions of performance levels, but the students had a clear purpose and audience for the writing, and the Two Stars and a Wish approach provided structure.*

Vignette 5: Science, Middle School

A middle school science teacher decided that her 8th grade students were not benefiting as much as they could from the science inquiry experiments around which she structured her units. Her goal was that each week students would complete a lab report and, as part of the report, connect what they learned from the experiment to the big ideas that she was presenting through the unit. However, she realized that students were struggling with the lab report content, and she was spending much of her grading time commenting on earlier sections of the report rather than focusing on the connections that they were making to the big ideas. She had been using a "criteria-for-evaluation form" that described her expectations for the reports, but decided that it needed to be revised so that students understood it better, and that she would work with her students to develop a new one.

Before the start of the new school year, she pulled four lab reports from the previous year, then removed student names and the grades awarded from the reports. During the first class with her students, she reviewed the criteria for evaluation form, and then showed them the four student reports. In small groups she asked them to rank the reports, using the evaluation form, and be ready to share their group rationales with the whole class. She asked a member of each group (selected randomly) to explain his or her analysis of one of the reviewed reports, and allowed other students to add to the comments. Once the four had been discussed, she then presented the rank order based on her grading, and tied it back to the criteria for evaluation form. She took the time to answer student questions about the grades. She then reviewed again the purpose of the experiments and the write-ups, to help them understand the phenomena that they were studying and to make connections between their results and the big ideas of the course. The reports were structured in a particular way to guide their thinking. She challenged the students to improve her criteria-for-evaluation form, by creating their own check-lists that would help them do a better job on the lab reports.

Students then went back to their small groups, and reviewed again the two higher scoring lab reports, against the criteria-for-evaluation form; discussed how to describe the important aspects of the reports in their own words and from there developed their own list of important criteria. A second class period was then spent compiling the ideas from each group, creating a final agreed upon criteria list, and ensuring common understanding.

For each lab report that students completed for the rest of the year, students were reminded to compare their own work against the criteria list as a first check. Then the teacher allowed 15 minutes of class-time each week, for students to swap draft reports with another student and to provide feedback. Students used the criteria list to look for omissions in the report and wrote feedback on sticky notes. Students then had to make their final revisions that evening before handing in the report the next day.

The teacher discovered that students were better able to understand her expectations using the student developed criteria list, and that the quality of the lab reports increased significantly, along with greater depth of student thinking. Furthermore she was able to spend more time focused on the connections that students were making to the big ideas which in turn was helping her plan her instruction better having a clearer sense of what they understood and were still struggling with.

*This formative assessment example focuses primarily on the **self- and peer-assessment** attribute of effective formative assessment. The teacher had structured her instruction around a **learning progression**, using a sequence of inquiry experiments that were intended to help students develop understanding of several big ideas. Recognizing a weakness in her process, she engaged her students **collaboratively** to develop a lab report criteria list that they clearly understood and that would help them improve the quality of their own reports. Students were then encouraged to engage both in **self-assessment**, to monitor their own work against this criteria list, and then to engage in **peer-assessment** by using the criteria list to review the lab report of another student. Time was built into the regular classroom schedule for this process, and students had time to take the **descriptive feedback** onboard before handing in their reports. In addition, as the quality of the reports improved, the teacher was able to attend more to the content that was most critical to the overall learning, and hence was able to use that information to adjust teaching in the light of student learning.*

Vignette 6: Economics, High School

An important concept in a high school economics curriculum is that of supply and demand. The high school economics teacher knew that his students needed to have a firm grasp of the five determinants of demand and the six determinants of supply in order to understand how all the variables interacted in order to determine pricing.

After introducing the five determinants of demand, the teacher showed a movie clip from *Hudsucker Proxy* that shows a sudden change in price of the product due to a change in one of the five determinants. The teacher asked students to identify which of the five determinants it was. From student responses the teacher was able to identify those who had understood the content and those who had not. He had an already-prepared worksheet for those who did not yet grasp the concept and he worked with this small group of students using the worksheet to pin-point and then address any misunderstandings. The homework was a reinforcement activity of the concept. Students who had answered the question correctly were able to begin this work while the teacher was working with the other group.

The teacher repeated this process for the six determinants of supply, using a clip from *Forest Gump*, and again asking students to identify which determinant was involved. Again he worked with the students who did not understand, and allowed those who did to begin the reinforcement activity.

*Several attributes of effective formative assessment are illustrated in this vignette. The teacher had a clear understanding of the **learning progression** that he wished to move students through in addition to the subsidiary **learning goals** within the topic. He anticipated key junctures in the unit on supply and demand and **embedded in his instruction** an assessment point that allowed him to quickly determine students' understanding of the determinants. Importantly, he had a plan of action prepared ahead of time of what he would do to support student learning both for those individuals who did not yet understand the content, and for those who did. If students did not grasp this concept, moving on to interpreting supply and demand graphs would be pointless.*

Vignette 7: AP Economics, High School

The economics teachers offered his students an opportunity to "requiz". The course textbook had a large bank of test questions tied into each chapter which allowed him to create multiple parallel forms of each of his weekly quizzes. After the initial quiz is given at the end of the week, students grade it themselves to immediately identify areas that they were struggling with. The teacher moved around the class as students graded their work and so ensured that students were honest. The teacher collected the responses and glanced through them to get a sense of problem areas for the class as a whole and then spent the rest of the class period reviewing these key concepts (although he was prepared to move on to the next topic if review was not necessary). Currently his practice has been to work with the whole class on common areas of difficulty but he plans to also work with smaller groups of students who had a particular difficulty. Students had an opportunity to then retake a parallel form of the quiz at the start or end of a school day if they were not satisfied with their current grade.

Students actually had the choice of continuing to retake parallel forms of the quiz until the class as a whole had moved on to a new chapter at which point their final quiz score was recorded. The teacher noted that as the year progressed students were less likely to need the option to requiz since their first-time quiz scores improved. They learned both how to study for the quizzes and also that their time was a valuable resource: it was more effective to learn something thoroughly first time rather than have to spend time on two occasions to learn it.

*There are several attributes of formative assessment operating. First the weekly quiz approach was **embedded in instruction**, providing evidence to the teacher and the students of the students' level of understanding of the overall learning goals for that week. Student progress could be monitored in smaller chunks than just the end-of-chapter tests. Having students mark their own tests gave them a sense of which concepts they did not fully understand, and then the teacher was also able to review their responses as a set to get a sense of overall pattern of difficulties and provide **descriptive feedback** to the class as a whole or to individuals. One of the interesting outcomes of this approach was the change in approaches to learning that students developed as a result of the process so that over time fewer students needed to take advantage of the requiz option. Another point worth noting in this example is the evolving nature of the teacher's practice. He is continuing to refine how he provides feedback to the students and how he structures the additional support with either whole-class or small-groups.*

Vignette 8: History, High School

A history teacher created an end-of-year project for students to work on over an extended period several weeks with the overall goal of enabling students to gain a broader perspective on 60 years of history. Each group was assigned a decade from the 1950's through to the present time. The teacher provided a list of important events with respect to domestic policy that occurred in each decade (e.g., for the 60's the Kennedy assassination, the Beatles visit the US, man landed on moon etc.). Students were given

guidelines on what their 15-minute presentation and the study notes to be prepared for their peers had to contain. Each person within the group had to responsible for a piece of the presentation.

Since the teacher wanted students to learn from each others presentations and notes, he met with each group on a regular basis to monitor progress, to give them an opportunity to reflect on their group's progress and next steps, and to provide feedback on their presentations and draft notes. A few days before the final presentations were to be made, the groups were paired so that they could listen to each other's dress-rehearsal presentations and give each other feedback on their notes, content of the presentation and its delivery. The teacher then met with each group to review the feedback they had received and to help them decide what might need to be improved before the final presentation.

The teacher created an end of project assessment that was a multiple-choice quiz drawing on the content across all the presentations. In addition, the end of the year essay required students to draw on knowledge or concepts presented.

*This is an example of complex project that the history teacher engaged his students in, requiring them to become experts in a particular decade so that they could teach their peers. In addition because of the structure of the final quiz and end-of-course essay students had to use the presentations of their peers and the study notes to become familiar with the major events, influences and policies of the other decades. However, within the extended project there are also aspects of effective formative assessment practice. The teacher monitored their progress and gave students **descriptive feedback** along the way, he encouraged them to be **self-reflective** of their own progress and to use **peer assessment** strategies to give feedback to another group.*

Vignette 9: Band/Orchestra, High School

The band teacher worked through a section of a musical work with the class that was selected because it contained several challenging sections that would require students to apply some of the recent lessons. As the band plays through a particular measure of music he noticed a sour note. He stopped the group and asked whether anyone has noticed anything. Several students indicated that they noticed some off-notes. He then asked everyone to look at second last measure in the section. He asked everyone to play that measure and hold each note until directed to play the next one. By doing this he was able to help the students isolate the instruments that were playing the wrong pitch.

Often this approach results in the students discovering for themselves that they are using an incorrect fingering. If not, additional steps are taken. Let's say they hear the wrong pitch in the trumpet section in the second beat of the measure. The teacher then would ask the trumpets to hold up their instruments so he can see the valves and then hold down the fingering for the note(s) in the second beat of the measure. He can then have the students observe the fingerings they have used. It will be obvious where incorrect fingerings are applied when students look at each other's instruments and the correction is made immediately.

A final check of understanding would be having the students play the measure again by holding each note and checking for correct pitches.

*This is an example of how small the grain-size of a formative assessment can be. There is only a fine line between the instruction and the assessment process and the assessment is **embedded in instruction**. In addition to working on playing the particular piece of music the teacher is also developing students' musical ears so that they can identify problems, and then correct them. He encourages students to listen to each other and to observe each other in order to **self-assess** themselves.*

Vignette 10: Reading (English Language Learners), Elementary

The teacher starts her third grade reading class (60% of whom do not speak English as their native language) by reviewing the concept of "predicting", the reading objective on her lesson plan. Everyone in the class is asked to find their places in the books they are reading. They are asked to write a prediction of what will happen next and to read to find out if their predictions are accurate. Although all students are focusing on the same objective--making predictions--each student has chosen to independently read a book that is appropriate to his/her vocabulary level (contains 95% known vocabulary words). In this way, each student can practice the objective at an understandable level.

The teacher then divides the class into three small groups—one consisting only of ELL students and the other two with a combination of native and non-native English speakers. She assigns each group to a different activity for the period: 1) independent reading time with a reminder to think about the reading objective of predicting what will happen next (mixed group); 2) use of a computer software program designed to build oral English vocabulary and understanding of grammatical structures (ELL group), or 3) working with another ELL or English speaking student in a reading/writing activity (mixed or ELL-only group). The teacher works with the small groups and moves throughout the room providing assistance as needed.

When meeting with the first group of students who are reading independently, the teacher asks each student questions about the book and the reading objective for that week. Based on the student's answers, performance on the last book quiz, and the progress toward individual goals, the teacher decides either to let the student continue to read, assigns him to work with a partner or discussion group on answering some additional questions based on the objective, or assigns him to partner with one of the ELLs.

The teacher then travels to the second group of ELLs working on vocabulary skills. If the ELL is on the computer, the teacher monitors the student's pacing in the program to make sure he/she is building necessary oral vocabulary. If the ELL has finished the lesson on the computer, the teacher reviews the printed progress report that highlights the words the student is still learning or struggling with. She and the student discuss the data and decide on the next appropriate activity. They may decide the student should read independently, work on printed activities from the software, or pair the student with a native-speaking student to work on vocabulary with flashcards. They may also decide to have the student work with a partner in a '"read with" or "read to" session focusing on books targeted to the vocabulary the student has learned.

Checking in on the third group, the collaborating groups, the teacher asks the paired students to evaluate the ELLs vocabulary progress based on their flashcard practice. If the paired students are reading a book, the teacher asks the ELL questions about the book to determine comprehension. Based on the teacher's assessment from talking to each ELL, the teacher makes a recommendation on how to start the next reading practice activity.

After talking to all the groups, the teacher decides if the reading objective needs more instruction, either as a whole class or in small groups in the next reading time.

*The teacher developed a series of questions to assess her students' understanding of the **learning goal** taught that day and assessed if they could apply it to their independent reading. Those that needed more assistance with the reading objective received it by either talking with the teacher or **collaborating** in groups. The computer program reported on vocabulary acquisition and gave the teacher feedback on **learning progressions.** Based on the computer generated feedback and the teacher's follow- up questions, she decided the next step needed for each ELL. Though the **peer assessment** was informal, the students clearly understood that the goal was to assess the reading objective or vocabulary progress.*

Vignette 11: Math, Upper Elementary

A 5th grade math teacher has provided her class with a brief lesson on a new math objective. After providing instruction, the teacher uses a computer software program to print assignments for the objective. As students complete their assignments they fill in and scan bubble cards, and the software provides the student and teacher with immediate feedback. The feedback is provided in report form that allows the student to assess and do self-correction and for the teacher to provide personalized instruction for her students if needed.

In the classroom students take responsibility for their own learning through self assessment, partnering, and peer tutoring. The practice assignments that are generated by the software program are individualized so the students can collaborate while still being responsible for their own work. Once the student has successfully practiced an objective they are given a test for mastery. Then after an objective is mastered, review problems are included on subsequent assignments.

The software provides the teacher with continuous, daily and even minute-to-minute, feedback on student progress. If a student needs additional instruction on an objective the software will alert the teacher that intervention is necessary. After providing additional instruction to the student (this is done by the teacher, teacher's aide, peer-tutor, etc.) the teacher assigns an exercise or diagnostic test to confirm their understanding and allow them to continue their learning progression.

The software also provides goal-setting and monitors students' progress towards goals. Each student has individual learning goals to master a certain number of objectives each week and marking period. The software reports on these goals after each assignment is completed.

Although her students do all of their math practice and testing on paper, and show all of their work, the software package she uses automatically scores, records, and reports on each assignment as it is scanned. This process allows the teacher to adjust instruction as necessary for individual students, groups of students, or an entire class. Students, teachers, and parents all get descriptive feedback through reports to guide the students' learning.

*Several attributes of effective formative assessment are illustrated in this vignette. The teacher used **specific feedback** to guide individual and whole class instruction, without requiring additional paperwork for the teacher. By using goal-setting in the software, students and teachers can monitor **learning goals.** Since students goals are reported on after each assignment, students and teachers have regular opportunities to discuss goals. By using the immediate feedback that the software provides, students and teachers interact on a regular basis to discuss **learning progressions** and engage in frequent opportunities to **collaborate**. Because the software generates individualized assignments, students are able to participate in **self-and peer-assessments** during every math class. By monitoring students during class, acting on the immediate feedback, and meeting with individual students, the teacher uses what she has seen to **embed** the feedback from the software into her **instruction**.*