



EDUCATIONAL
SERVICE
DISTRICT 112



THE SUSTAINABLE CLASSROOM PROJECT

Middle School Case Study: Madlyn

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About Madlyn

Madlyn has been teaching Middle School Social Studies for 12 years. She has a BA in Education and MA in Curriculum and Instruction. Madlyn decided she wanted to become a teacher when she was a middle school student, and has never regretted that decision. She explains, “They keep her young.”

The school district in which Madlyn teaches is located along the I-5 corridor in Southwest Washington. The community in which her school is located is a blue-collar mill town that has suffered from mill shut downs and the lay-off of workers over the past 20 years; the economy is just beginning to recover. Despite a poorer economy, the community has a history of supporting its schools. The school district has approximately 5,000 students and is the largest employer in the community.

Madlyn has been involved in a number of projects designed to advance teaching and learning in her school. She was a recipient of a Gates Teacher Leadership Project Grant (TLP) and served as a TLP trainer. She also participated in Intel training (Technology Training for Emergent Learners) and became a trainer for her school. As team leader and head of the Social Studies department, she worked with her department and other teams to create new Classroom-Based Assessments (CBAs), and to integrate technology into Social Studies classes.

Even before her involvement in the Sustainable Classroom Project, Madlyn’s classroom was a model for the use of technology in her middle school. Her classroom was equipped with two laptop computers, seven student computers, a ceiling-mounted projector, document camera, surround sound microphone, and a DVD/VCR.

The most frequently used software in her classroom is Microsoft Office and Internet Explorer, which were used to conduct research, write, and create presentations for Classroom-Based Assessments. The Internet was used in her classroom to keep abreast of current issues and to help students make connections between the present and the past. Her students frequently used interactive Social Studies sites to “pique their interest and enhance their learning.”

Madlyn’s Classroom



Introduction

Madlyn applied for the Sustainable Classroom Project (SCPP because she was excited about adding equipment to her classroom that provided “the ability to present lessons in multiple modes (auditory and visual), and the capacity for all students to participate actively in the learning process.” She was actively using the nine instructional strategies, described in the book *Classroom Instruction that Works* in her Social Studies classroom before her involvement in the grant.

This year Madlyn is teaching 144 students in five classes of 7th and 8th grade social studies. Her classes average 28 students that are nearly evenly split between boys (52%) and girls (48%). The ethnic make-up of students in her classroom is 79% white/non-Hispanic, 10% Hispanic, 10% Native American and 1% African American. Academically about 40% of both her 7th and 8th graders scored low on the Washington Assessments of Student Learning (WASL). Madlyn wrote the following about her students' socio-economic status:

Approximately, 49% of the students in our building qualify for free and reduced lunches, and the majority of the others are middle class. Many of my students are in single parent households. The majority of the parents work outside the home but there is a significant number that don't have jobs.

The Book Study

CHAPTER 1: BEGINNING THE STUDY

Madlyn began the project with some skepticism and some affirmation. After reading the first chapter in *Classroom Instruction that Works*, she wrote in her journal:

Marzano makes the statement that the "art of teaching is rapidly becoming the science of teaching." I am not so sure I totally agree with that statement. I believe there is an art to teaching—it is a God-given gift. There are teachers who know the science of teaching or have all the tools but cannot build the trusting and caring relationships with their students that are important emotional aspects of why students would want to learn. Conversely, the teacher that has the gift of teaching still needs to use certain instructional tools to be effective and have a successful classroom. As department head, I know that the Social Studies teachers teach the same curriculum and same lesson plans but the presentation in the classrooms is different, and some teachers are more successful than others because of how those lessons are presented.

She went on to say:

In the chapter, Marzano discusses the Coleman report of 1966 that concluded that differences in student achievement could be attributed to student aptitude, socioeconomic status, and home environment and I have to admit that a few years ago I held that belief. I know many of my colleagues still would use that argument. But over the past few years Huntington has made impressive gains in certain areas and we all know that the students are the same but the instruction has changed.

INSTRUCTIONAL STRATEGY 1: SIMILARITIES AND DIFFERENCES

Unit Topic: Washington State History and Geography – Geographic Regions
Technology Used: Interactive whiteboard, wireless response system

In the second week of the project, Madlyn tackled the new technology and *Chapter 2: Similarities and Differences* with great confidence and energy. Even before completing the second week's assignments, she got her students involved with the interactive whiteboard and the wireless response system. She chronicled:

Wow, it has been another busy week trying to balance the regular classroom work, the SCP class, preparing for parent/teacher conferences, and trying new activities on my [interactive whiteboard]. My 8th students were able to use the [wireless response system] this week when they were quizzed on their reading homework—they were in awe. I also created some graphic organizers for summarizing and organizing information, but the activity was more teacher than student-driven, so I am hoping to change that this week with a lesson on similarities and differences.

Madlyn's lesson plan for the instructional strategy was devised for her 6th grade Washington History and Geography class. Her goal was that the students would be able to describe similarities and differences in Washington's geographic regions, and that they would be able to create classification tables and Venn diagrams. Her students would use their textbook and the Internet to identify and label geographic regions on the interactive whiteboard. Then, they would brainstorm characteristics of regions, classify lists of characteristics and name the categories. These characteristics would be related to the state's regions. Finally, in pairs, the students would compare two regions using a Venn diagram. Madlyn's role was to assist her students in manipulating and adding information to maps, charts, and Venn diagrams on the interactive whiteboard and to conduct a quiz using the interactive whiteboard, and the wireless response system.

Madlyn was elated as she reported the results of her first experimental lesson. She wrote, "It was a great week—the students and I met with success—and I only had two technology-related panic attacks." She went on to describe her lesson:

The students interacted with the [interactive whiteboard] all three days of the lesson—they loved it! I captured a picture of a map of Washington . . . and [using the interactive whiteboard software], I created a 5-piece puzzle of the map. Each piece represented one of the natural regions, every student wanted to come up and put the puzzle together and believe it or not it was difficult for a number of them at first. I then divided the students into 5 groups representing each region and they read about the region and wrote down the facts. As they found the facts, students would go to the board and write them into their region. Next, we classified the facts into four categories: climate, landforms, bodies of water, and natural resources. Using Inspiration software, I created a table and randomly typed in the facts the students had found in their reading. The students then sorted all the information in the table under the correct region and category. They learned to make duplicates of words because some regions share the same characteristics. Finally as an assessment, they created their own Venns and compared their region with one other region in Washington.

One aspect of the lesson evaluation included the wireless response system. In summary and evaluation of the tool, Madlyn wrote:

They also took a quiz using the [wireless response system]—they really like using those and they did very well on the quiz. They responded very positively to the use of the technology in the student evaluation of the lesson. At the beginning of the original lesson the students had created a memory map of Washington and the final activity of this lesson was to do the same, and students kept telling me how much easier it was to do this time—their maps actually resembled Washington and they had accurately located and labeled cities, regions, bodies of water, and landforms—now we are ready to learn about Washington's history!

As Madlyn mentioned, the lesson was not without technology "panic attacks." She described them this way:

One of my panic attacks came when I hooked all my equipment up and my computer would not recognize my [interactive whiteboard]—I am still not sure what I did to make it work—I have the computer home this weekend to do some planning so Monday when I hook everything up will be a test or trial of my tech savvy again. The other attack came when my projector in the middle of my lesson said the filter needed to be changed—but tech support showed up quickly....

In using the wireless response system to evaluate the lesson:

- ◆ 91% of the students in Madlyn's classes voted that they totally or mostly understood the lesson ideas;
- ◆ 85% indicated that they thought the instructional strategy absolutely or mostly helped them understand the ideas;
- ◆ 75% thought the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 77% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 2: SUMMARIZING AND NOTE-TAKING

Unit Topic: 8th Grade U.S. History – The Colonies at War

Technology Used: Interactive whiteboard

As soon as Madlyn read *Chapter 3: Summarizing and Note-Taking*, she put it into action. She wrote in her first journal for the chapter:

I liked what Marzano had to say about summarizing—having struggled with trying to teach summarizing in the past, I found Chapter 3 to be very helpful. It motivated me to begin right away to use some of the strategies in my 8th grade classes. We had just begun Chapter 8 and I was teaching them how to summarize using a very structured framework that was teacher-directed and where students filled in the missing information—it wasn't teaching them how to summarize. The rule-based strategy was exactly what I needed. I typed up some passages from the chapter and then, I discussed and demonstrated the rule-based strategy for summarizing with the students. Then, the students using the highlighter (black), blocked out the text that was trivial or redundant, and substituted words where appropriate. They love using the board and everyone was very focused—we are going to finish the activity tomorrow and include taking notes.

Madlyn developed an experimental lesson for the instructional strategy for her 8th grade U.S. History class, which was studying a unit on “The Colonies at War.” Her goal was for students to practice the “rule-based” strategy for summarizing and to take summary notes on how colonists financed the war. Students would read the textbook, discuss and practice summarizing at the interactive whiteboard, and summarize and take notes on the feature article in their textbook. Madlyn’s role was to lead a discussion on the “rule-based” strategy for summarizing and demonstrate note-taking. Also, she would monitor student practice on the interactive whiteboard.

Observation #1:

Twenty-five students were seated in six rows in the classroom. In addition to equipment provided by the grant, the room contained seven computers located around the exterior walls. The interactive whiteboard was the primary equipment used for the lesson.

Madlyn began the class by going over the goals of the lesson for the day and reminding students that their notes could be used on the test, then gave an assignment for later in the class.

Madlyn listed three questions on the interactive whiteboard to which students responded individually in writing from their seats. After students had summarized the questions and answered them from textbooks, Madlyn asked the questions out loud and clarified them. Students took turns responding and writing their responses on the whiteboard. Other students agreed or disagreed with the responses. The students were clearly motivated by the opportunity to write on the whiteboard and chose different colors for their answers.

Madlyn showed the word “summarizing” and asked students what rules they remembered about summarizing. When the students were slow in responding, she reviewed three rules – delete trivial material, delete redundant material, and substitute a general term for a list. Madlyn then displayed a document on the interactive whiteboard and told students that they were going to summarize it. Students took turns going to the whiteboard and blacking out the material that was not necessary. When this was done, the students wrote the summarized paragraph in their notebooks. Madlyn printed the notes from the interactive whiteboard for students who may not have had time to complete copying it.

Finally, Madlyn displayed a labeled web diagram surrounded by miscellaneous notes on the interactive whiteboard. Students discussed where the notes belonged and as decisions were made, the students dragged notes into appropriate circles on the web diagram. The whole class gave students at the board suggestions about where the notes went and better techniques for dragging.

In evaluating the lesson, Madlyn wrote:

Teaching the students the “rule-based” strategy for summarizing seemed to be really useful, and using the board for practice was very visually effective especially for my slower learners. I found most of my 8th grade students were able to determine what was important once they understood what their purpose was, but now we need to work on the mechanics of writing a fluent summary; the biggest issue being either fragmented or run-on sentences ... I found Marzano’s Chapter 3 to be very beneficial for me as a teacher, especially the section on summarizing—I will be using the strategies of the various summary frames in the future.

Student evaluations of the use of technology in the lesson indicated that:

- ◆ 77% said they absolutely or mostly understood the lesson ideas;
- ◆ 79% said the activity absolutely or mostly helped them understand the lesson ideas;
- ◆ 75% believed the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 75% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 3: REINFORCING EFFORT AND PROVIDING RECOGNITION

Unit Topic: All Classes – The Little Engine That Could

Technology Used: Interactive whiteboard, document camera

Madlyn read *Chapter 4: Reinforcing Effort and Providing Recognition* with the other project participants but, because she was out of her classroom for surgery until after the winter holiday break, she taught the experimental lesson when she returned. After reading the chapter, Madlyn decided to teach this instructional strategy as content in itself. She wrote:

Chapter 4 was hard to read. First, it brought me up short, as one of my classes I have particularly struggled with kept creeping into my thoughts. I began to realize guiltily that I have not been very effective in reinforcing effort. Secondly, I kept struggling with the question, “Could these students learn to change their beliefs about the importance of effort?” Finally, what would be the most effective way of teaching and reinforcing effort with this particular class?

Madlyn’s goal for the lesson was that students would demonstrate that added effort in completing homework and practice would result in increased achievement. She also wanted the students to understand intrinsic and extrinsic motivation and focused practice. In preparation, she created a PowerPoint presentation on the topic and designed homework assignments. She used the interactive whiteboard for her PowerPoint presentation and the document camera for reading *The Little Engine that Could*. Madlyn’s description of the lesson and her evaluation are particularly poignant:

I was unable to present the Chapter 4 lesson (Reinforcing Effort and Providing Recognition) until I returned to the classroom after winter break. In the meantime my students had received their mid-term grades and they were not good. I was concerned because it seemed that many of my students didn’t really care if they were successful. I realized that many of them were not making a connection between effort and achievement. I was also a part of the problem because I was frustrated and not encouraging and supporting them, and I was not very consistent in recognizing their few successes. Originally I had planned this lesson for one of my 7th grade classes that was really struggling, but I decided all the classes needed the lesson.

I prepared a PowerPoint presentation introducing them to Marzano and “Classroom Instruction that Works.” I outlined Chapter 4 and we discussed what effort meant. I read to them ‘The Little Engine that Could’ (a Christmas present from my brother-in-law) with its cool new illustrations—even my 8th graders loved listening to the story. We discussed how the little engine was willing to try despite not being very big, etc. I asked them if there was a lesson for them in the story and the

comment came up in just about every class - that they were not as smart as some of the students in the class. So, my question was "What do you mean, 'they are smart'?" The answer, every time, was the "smart" students complete their work. This led to more discussion about effort. I shared the example of a former student from our school that plays professional baseball for the San Francisco Giants and is recognized as one of the top pitchers at this time. I asked the students, "How did Jason get to the majors? Was he born throwing 98 mph fast balls?" They all agreed he had to practice and, not just a little bit, he had to be committed to work hard. Then they discussed the things that they did well and how they had worked hard to be good.

Next I told them we were going to track effort and achievement for 10 days and I introduced them to a graph and rubric. I also said that I was going to reinforce their efforts by checking their individual progress each day. I feel good about that because I have verbally made contact with every student every day since coming back to the classroom. It has taken more time - about 10 minutes - out of each class period, but students work on daily geography or their assignment while I make my rounds so it isn't time lost.

Since Wednesday, when I gave the lesson, I have received more completed assignments and assignments from students who don't do assignments. The students are constantly reminding me—"Mrs. Davis do we graph our effort now? I did my work!" It is not a perfect world, I still have students who are not turning in work and their graphs will probably be flat lines, but each day, I speak to them and encourage them. I am just happy to be making the contact with each student; it is an effort that seems to be paying off.

Student evaluation of the lesson indicated:

- ◆ 94% absolutely or mostly understood the key lesson ideas;
- ◆ 88% believed the activities they used absolutely or mostly helped them understand the ideas;
- ◆ 81% believed the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 75% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 4: HOMEWORK AND PRACTICE

Unit Topic: Washington State History and Geography – Native Americans and Settlers
Technology Used: Interactive whiteboard

In the PowerPoint presentation Madlyn developed for the previous chapter, she combined the information on effort and recognition that she gave to the students with *Chapter 5: Homework and Practice*. As she read about this instructional strategy, she thought through her past and current practices and resolved to make some changes.

...my homework policy is simple. "If you don't finish it in class, it's homework!" I have avoided giving homework because it seems to correlate with poor achievement. Chapter 5 was good exercise for me—I needed that!

I have always been somewhat jealous of the math teachers—if you poll the students at our middle school, most of them choose to do their math homework over all other assignments. Now I understand why. It is given consistently and the students recognize why they are doing it (generally practice); and, the next day they are going to get feedback. There were three things that caught my attention in Chapter 5, the purpose of homework, the amount of homework assigned, and providing feedback. First, I realized I rarely articulated the purpose of the homework I gave and it would be easy for the students not to make a connection to what we had read or discussed and the homework that was assigned. Second, one of the excuses I had for not giving homework is that I knew my students already had about 1+ hours of homework between Math and Language Arts that they were struggling to complete. Finally, my feedback on their homework assignments was often indirect and inconsistent.

Hoping to change my attitude and the attitudes of my students towards Social Studies homework, I am going to make some changes. First, homework will be assigned regularly, and planning time and effort will go into designing assignments that articulate the purpose and outcome; and I will set aside time at the end of each class period to make sure students understand the “what and why” of their homework. Secondly, homework will be designed to be completed in 10-15 minutes. Finally, I am going to check their homework at the beginning of the period and give them feedback and reinforcement for their effort. My students will also be able to use that time to share and discuss what they completed.

An obstacle many of my struggling students face when trying to do homework is the lack of support at home—neither time nor place to do homework! The Social Studies teams are trying to consistently give the same assignments each day so that students can buddy up to complete their homework together and, thus, support each other. Hopefully the result will be improved student achievement.

Madlyn’s new resolve was put into practice with an experimental lesson with her 7th grade Washington State History and Geography class. Her goal was that students would understand cause-and-effect, and know that settlers changed the PNW land and lifestyle of Native Americans forever. Madlyn started with guided reading and discussion of a textbook passage. She then demonstrated cause-and-effect on the interactive whiteboard using a graphic organizer. Students participated in the discussion and completed four of eight effects on the graphic organizer. Madlyn gave them their homework assignment, which was to finish the graphic organizer. The next day the students shared their homework using the document camera, and Madlyn checked the homework and gave feedback. To evaluate the lesson, the students wrote an expository paper.

Madlyn reported the results of the experimental lesson in her journal:

I never would have believed it could happen but it is working—I am consistently giving my students homework and they are doing it. What is the most interesting is that in my average-to-good classes I have seen very little change but my two most challenging classes are turning it around. I was admittedly quite skeptical at first about attempting a lesson concerning the importance of homework.

At the beginning of the month I combined Chapters 4 & 5 in a very generic lesson on effort and homework. Then I challenged myself to plan homework into each lesson and then allow time at the beginning of class to share and give feedback and at the end to discuss the purpose for the homework. As the students complete their daily geography, I go to each student and check their homework and give them a quick comment or a sticker. Then they graph their effort in completing that particular assignment, and they share and discuss the assignment as either a review of the previous assignment or transition to the next. At the end of the period I allow time to discuss the purpose of the homework and discuss strategies for completing it. I have also planned carefully to make sure the assignments do not require a lot of time outside of class to complete.

The results of this experiment have been very interesting. First I have more assignments to put in the grade book, and the students are actually experiencing improved grades. Following a quiz last Friday, two young men told me that they had never had such high scores on a quiz and they knew it was because they were now doing their homework. Second, I have seen very little change in the classes that were already doing their work. I believe these students were already intrinsically motivated to complete their assignments; they already understood effort begets success. On the other hand my two classes that have real issues with self-esteem and academic success really benefited especially from my immediate feedback—even just a high-five—“you did it and I am proud of you!” It has benefited me also because I feel much more attached to these groups and we have formed a bond that wasn’t there before. In another week one of these classes will be moving on and I hope that their attitudes will continue to improve—I have been asked to share my experiment with some of the other teachers that have the same students. I am going to continue this experiment when my 8th grade classes change at the semester; consistently assigning homework with a purpose and giving immediate feedback has proven to be a benefit for both me and my students ... so much for the skeptic within me!

Student evaluation of the lesson indicated that:

- ◆ 80% absolutely or mostly understood the lesson ideas;
- ◆ 89% believed the instructional strategies used absolutely or mostly helped them understand the ideas;
- ◆ 84% thought the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 80% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 5: NONLINGUISTIC REPRESENTATIONS

Unit Topic: Washington State History and Geography

Technology Used: Interactive whiteboard, wireless response system

Chapter 6: Nonlinguistic Representations represented a welcome reprieve from the intensity with which Madlyn had worked on past chapters. She wrote, “Chapter 6 was an easy read for me because this strategy is one that I use all the time in my Social Studies classes.” She did note the one technique mentioned in the Chapter that she spent little time developing was kinesthetic representation. She wrote:

I realized after reading this chapter that the one nonlinguistic activity that I had not used much this year was the kinesthetic ... It is interesting that my most kinesthetic learners are the ones who like to work at the board. I think just manipulating the [interactive whiteboard] helps them use some of that energy that enables them to learn better.

She expanded on that thought by explaining...

Unfortunately, because of time constraints and so much emphasis on those linguistic skills of reading and writing to support the WASL, my students do not get as many opportunities for the more creative nonlinguistic learning activities, I think that is why the kids enjoy the new technology in the grant. The [interactive whiteboard] and [wireless response system] give them that opportunity to be more creative and active in their learning, as well as being visually stimulated.

The lesson Madlyn planned for this instructional strategy, again, was for her 7th grade Washington State History and Geography classes. The goals for the lesson were that students would understand why there were problems between Native Americans and white settlers, and that they would know that lack of understanding leads to bias and prejudice.

Observation #2:

Students entered the classroom and picked up wireless response system units with which they checked into class. They got out their homework and talked quietly while they waited for class to begin.

Madlyn opened the class by providing an overview of the lesson plans for the week, which were displayed on the interactive whiteboard and telling students to write the homework assignment in their planners. Students wrote down their assignment and Madlyn walked from student to student checking homework, praising them for good or complete work, and talking to those who hadn’t completed it.

Madlyn set up a learning goal on the interactive whiteboard and instructed students to open their notes and books. She then showed a concept map, done in Inspiration, on the interactive whiteboard and asked students what the concept was for the day. Students raised their hands and were called on to respond. Madlyn pointed out five cultural differences (terms written on the interactive whiteboard) that brought about conflict between Native Americans and white settlers – how they got food, beliefs about land ownership, language differences, leadership roles, and the concept of superiority, and asked the students to describe each from answers they wrote on their homework sheets. Students took turns responding as called on.

Madlyn moved the words written on the interactive whiteboard into an Inspiration diagram next to descriptions of each term and asked students to compare the diagram terms and definitions with their homework to determine if their answers were the same. The students volunteered to read the questions and then their answers; other students offered explanations and asked questions. Madlyn probed the student responses and referred them back to their textbook readings. Some students filled in or changed their worksheets.

Madlyn went back to the diagram and asked students how they would describe its organization. Students likened it to a tree with bigger branches and smaller branches off of the bigger ones. Madlyn then drew a border around each separate topic and its supporting information within the diagram.

The lesson continued in a lecture/discussion format with the teacher talking about each topic and with students giving supporting evidence from their readings. Madlyn provided analogies to contemporary structures as needed, e.g. leadership. Native American Councils were compared to today's school board structure. Students listened and offered insights as well as providing their own analogies.

When the lecture/discussion was complete, Madlyn focused student attention on the concept map and pointed out its value to the process of writing. The diagram had different colors for different levels/kinds of information. She asked if they could write a paper from the information on the concept map. Students were not sure about its value. She then switched the format from diagram to outline. There was an auditory 'aha' that could be heard in the classroom as students realized that their writing outline was already created. Students were visibly excited and impressed by what had happened.

Then, as she read a paragraph, Madlyn asked students to close their eyes and try to visualize what it would have been like to be a Native American teen at the time of the settlers. The students offered their thoughts as they were called on. When their answers were too general, Madlyn probed for reasoning that was more specific.

Finally, Madlyn told students to get out their wireless response system units to take a short in-class quiz on what they had just done in class. Madlyn read the items out loud, students made choices, and then correct answers were shown with percentage of correct and incorrect responses. Students responded enthusiastically when they got the same correct answer as the majority of the class.

The instructional strategy techniques employed were an Inspiration diagram that showed, through size and color of branches, the relationship between concepts; a guided imagery of the life of Native Americans at the time of white settlement; and, wireless response system graphs that displayed correct and incorrect responses to the quiz. The project technology used in the lesson included the interactive whiteboard and wireless response system.

After the lesson, Madlyn observed in her journal:

I integrated Inspiration software into the Chapter 6 lesson I presented to my 7th grade students about the reasons for the conflict between Native Americans and the settlers. It very nicely converted the concept map into an outline, which had a strong visual impact on the students. The levels of the concept map were color-coded, and I also color coded the levels in the outline to match the concept map. They have been struggling with organizing their writing, and the visuals of the concept map and the outline, all of a sudden, gave meaning to why they need to complete a pre-write.

Student evaluation of the lesson indicated that:

- ◆ 90% of the students said they absolutely or mostly understood the lesson ideas;
- ◆ 78% believed the instructional strategy used absolutely or mostly helped them understand the ideas;
- ◆ 91% believed the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 88% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 6: COOPERATIVE LEARNING

Unit Topic: Washington State History and Geography – The Effect of First Half 20th Century Events on Washington’s People and Economy

Technology Used: Interactive whiteboard, document camera

Like Chapter 6, *Chapter 7: Cooperative Learning*, was a familiar strategy for Madlyn. She wrote:

I remember jumping onto the cooperative bandwagon 15+ years ago and attending all those workshops with Kagan and other experts in the field. Today, cooperative learning is an integral part of my classroom instruction. However, to quote from Marzano in Chapter 7, “Cooperative learning should be applied consistently and systematically, but not overused.” In those first years I overused the cooperative learning strategy in the classroom to the point of burn-out for both my students and myself. Today I use informal cooperative learning groups on a regular basis in my classroom. These groups are most often used to clarify an assignment, review a learning goal and process information.

Madlyn also noted that formal grouping strategies were used for research tasks such as CBAs, although students wrote their own individual papers. Just as base grouping was an unfamiliar concept to others in the project, Madlyn, too, reflected:

Now, the idea of base groups appealed to me and I do not know if this is something that is new to me or something I hadn’t considered in the past. But organizing base groups at the beginning of a semester could prove beneficial for the students and me. I see all kinds of potential for student support and sense of belonging, as well as organized groups to help me with routine tasks such as returning papers and running errands.

The experimental, cooperative learning lesson Madlyn developed used the Jigsaw technique. Her goal was that students would gain knowledge and a higher level of interest before an assigned reading and research activity. Students were expected to learn how the economy and life in Washington State were affected by WWI, Great Depression, New Deal, and WWII. Students worked in groups of four, and each group was assigned a section of the text to read and develop expertise. Their group would create a presentation in which they shared information on vocabulary, people and events in their topic using the document camera and interactive whiteboard.

The lesson took an unexpected turn, as Madlyn reported in her journal:

Huntington is finally getting healthy. So many students and teachers (including myself) were hit with a virus, and it was very difficult to teach without constantly having to re-teach. I had a two-week period where at least a third of my students were gone in the majority of my classes. My cooperative learning lesson was a blessing because when a student returned after being gone, their cooperative group jumped right into helping them get caught up.

Madlyn evaluated the lesson in terms of both the instructional strategy and the technology. She reported:

The students did a great job of cooperating and sharing within their groups. I enjoyed observing how each group chose to organize and, especially, watching the natural leaders step forward and take charge. They immediately got to the business of volunteering and assigning responsibilities. I only had two students in three classes who refused to participate; my autistic student even participated with his group, as well as presented information to the class. His group was extremely supportive of him. I was really proud of how the groups supported and involved the special needs students that are included in my classroom.

Integrating the technology was the most challenging part of the activity and I left that to each group to decide what they were going to do. My student computers are too old to put the [software for the interactive whiteboard] on, so some students made PowerPoint slides that I transferred to flipcharts and others used the document camera. I was a little surprised that, as much as they enjoy watching

me use the technology, when they actually had the opportunity to use it they were a little intimidated. As the presentations progressed, the groups became more comfortable with the equipment.

Today we began reading the chapters that were surveyed, and I was pleased that the students were more engaged in discussion and asking good questions because they had the background knowledge needed.

When the students evaluated the lesson,

- ◆ 84% believed they absolutely or mostly learned the key ideas in the lesson;
- ◆ 80% thought the instructional strategy absolutely or mostly helped them learn the lesson ideas;
- ◆ 78% thought the technology absolutely or mostly helped them understand the lesson ideas; and
- ◆ 80% absolutely or mostly like the way they learned the lesson.

INSTRUCTIONAL STRATEGY 7:

SETTING OBJECTIVES AND PROVIDING FEEDBACK

Unit Topic: Washington State History and Geography – The Great Depression and New Deal’s Effect on Washington’s Economy and People

Technology Used: Interactive whiteboard, document camera, wireless response system

Madlyn immediately related *Chapter 8: Setting Objectives and Providing Feedback*, to the technology provided by the Sustainable Classroom Project. “All you have to do,” she wrote, “is observe the students while they are taking a quiz or reviewing while using the student response systems, and you understand the importance of immediate feedback.”

Madlyn continued:

At first, I wasn’t very excited about the [classroom] response system because I did not see the learning value, it seemed like a management nightmare. The students would get so excited about using the tools I found it difficult to focus them on the learning. But, as I have become more comfortable with the tools and learned to manage the students when using the tools, they have become more focused on the learning, and they are leading discussions of why a question is or isn’t correct. I have definitely come to appreciate the system as much as the students.

One of my most recent successes with feedback was last semester with an extremely tough class in which most of the students were failing; I had them graph their effort on assignments each day. Their grades went up! They were providing their own feedback by recording their progress each day. A couple of students told me they liked doing that because it was visual and they could actually see their improvement.

The goal for the lesson was that students would understand the effects of the Great Depression and New Deal on Washington State’s people and economy. She started the lesson by discussing the value for each student to personalize the learning goals by writing what they wanted to know about the topic. After the students had written guiding questions for what they wanted to learn, they read and researched and, then reported what they found using the document camera or interactive whiteboard. Finally, they took an electronic quiz using the wireless response system. Madlyn’s analysis of the lesson was as follows:

The lesson I prepared for Chapter 8 seemed a little too contrived and wasn’t the most successful of the lessons because I really didn’t give my students enough time or instruction. In an effort to have them personalize their learning, I had them formulate their own goals for learning about the period between WWI and WWII dealing with the Great Depression and New Deal. I asked them to write a guiding question that would guide what they wanted to learn. One issue was the lack of instruction I gave them on how to write a good guiding question. Don’t get me wrong, there were some good questions created but there was, at the same time, a lot of confusion. Despite my lack of confidence and the confusion of the students, when I assessed what the students had learned

using the [wireless response system], they actually did very well - so learning did take place. I had the students write questions for the assessment and evaluation, which made them more accountable for their learning, and they were excited to see their questions in the review. I guess the biggest problem was in the formation of the goal. What I thought would be good preparation for the start of our Dig Deep CBA has actually meant that I had to do some re-teaching.

Between the “practice” goal-writing and my re-teaching efforts, the new student goals are much more focused on specifically what each student wants to learn. Included in the goal-setting this time is a contract for how they intend to meet their goal. One thing I did differently is that I let struggling students brainstorm the wording of the question at the board with a partner. Because the students love working at the board this was a great motivator. This project (CBA) continues for another six weeks before I will be able to assess how successful the students were at completing their goals and contracts.

The [wireless] response system has worked great for feedback in recognizing whether or not the students are understanding the expectations of the Dig Deep CBA, thus saving time because I can go back and re-teach before moving on.

In the student evaluation of the lesson,

- ◆ 73% thought they absolutely or mostly learned the lesson ideas;
- ◆ 56% thought the instructional strategy absolutely or mostly helped them learn the ideas;
- ◆ 73% thought the technology absolutely or mostly helped them learn the lesson ideas; and
- ◆ 61% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 8: GENERATING AND TESTING HYPOTHESES

Unit Topic: 8th Grade U.S. History – Pre-Civil War North and South
Technology Used: Interactive whiteboard, document camera

Madlyn’s journal entries for *Chapter 9: Generating and Testing Hypotheses* contain thorough descriptions, and make an exceptionally compelling case for the use of this strategy. The majority of the journal contents are included below. [NOTE: Remember, these journals are written in the form of personal letters to friends or colleagues; they are not intended to meet formal writing standards. It is the opinion of this researcher that the informal style in which they are written sheds light on the passion in which they are composed.]

Journal 1:

At first glance, and before I actually read Chapter 9, I thought, “Hypotheses? When do I ever use that strategy?” However, as I read the chapter, I realized I teach social studies—I frequently throw out a hypothesis to engage the students in discussion, and my students actually write hypotheses to guide their research. I had never articulated that we were going to write or discuss a hypothesis, but that is what we were often doing.

I have concerns about two issues when generating and testing hypotheses. First, I find my students often lack the background or experience to generate hypotheses on historical issues, and second they may come to a conclusion based on emotion rather than historical fact. I have to prod and prompt them to explain their thinking. Marzano suggests ways teachers can help students generate and explain their hypotheses, and I have consistently tried to design assignments to include templates or graphic organizers for reporting their work, and have often used sentence stems to help them articulate their explanations (especially in discussions); however I hadn’t thought of providing the rubric with the criteria on which they would be evaluated.

I have all along appreciated the organization of Marzano's book, especially the classroom examples that are used. I found the six structured tasks and their frameworks for generating and testing hypotheses very helpful, and made me cognizant of the ways I have used hypotheses in the classroom, especially problem solving and historical investigation. As an instructional strategy, generating and testing hypotheses can be a challenge because students much prefer just giving an answer instead of explaining their thinking. That is why it is important to present sentence stems or templates to get them started.

My 8th grade students are studying the issues reflected in the differences between life in the North and the South pre-Civil War, and how they contributed to the conflict. This week ... my students will analyze primary source documents and compare the rules for the treatment of the workforce in the factory system of the North and the plantation system of the South. I am going to have them hypothesize about the design of the rules; why were they deemed necessary or desirable? The students will use the document camera and/or the [interactive whiteboard] to chart the information from the analysis of the documents, and use a graphic organizer to explain their thinking on how they reached their conclusion.

Journal 2:

Today was a great day—we finally finished our lesson on generating hypotheses and explaining our thinking. What a lot of discussion was generated! I began by giving them a hypothesis and then asking the students to defend it or negate it.

The discussion centered around two primary source documents—one was DeBow's Plantation Management and the other was Lewiston Mill Rules. As background the students read and analyzed both documents, then compared them by completing 4 charts. They used the technology to share their work—some used the document camera to display their work, others chose to complete the charts on the [interactive whiteboard]. After the charts were completed, we printed them for the students that were absent. The first hypothesis dealt with the rules being desirable for happy and healthy workers. Students discussed both sides of the issue and I even heard students say to other students, "Where is your evidence?" so the students would back up and give the evidence using text based examples—I was impressed! So I suggested another hypothesis basically worded the same but dealing with the workers at the mill. This time after some discussion a student said, "Mrs. Davis, I don't think we can support that hypothesis because it is really worded wrong. There is nothing in the Lewiston Mill Rules that makes me think those workers were happy or that their overseers were concerned with the worker's happiness. I think the hypothesis would be better if it were worded...the rules were necessary for healthy and safe workers." Jason had just generated a new hypothesis and I asked the class to give me evidence to support his hypothesis, and they did, and then we ran out of time to complete our student evaluations. So tomorrow we will do that before we begin our new lesson. I feel the lesson was well received because more students than usual were engaged in the discussion, even in 6th period.

Student evaluations of the lesson, completed the next day, indicated that:

- ◆ 78% believed they absolutely or mostly learned the key ideas in the lesson;
- ◆ 62% thought the instructional strategy absolutely or mostly helped them learn the ideas;
- ◆ 84% believed the technology absolutely or mostly helped them learn the lesson ideas; and
- ◆ 64% absolutely or mostly liked the way they learned the lesson.

INSTRUCTIONAL STRATEGY 9: CUES, QUESTIONS AND ADVANCE ORGANIZERS

Unit Topic: 8th Grade U.S. History – Pre-Civil War Conflicts

Technology Used: interactive whiteboard, wireless response system

Most of the techniques found in *Chapter 10: Cues, Questions and Advance Organizers* were common classroom strategies for Madlyn. Her goal, in the experimental lesson was that her 8th grade U.S. History students would understand why primary sources were important evidence to use in supporting their research on factors that led to the Civil War. In addition, she expected them to know what primary sources were and how to analyze them.

The outside observer spent one period observing one of Madlyn’s U.S. History classes. Nineteen students were in attendance; a number enrolled in the class were gone on a school-related band and orchestra event. The interactive whiteboard and wireless response system were used to facilitate the lesson. She made the following observations:

Observation #3:

Madlyn began by displaying the goal of the lesson – to use primary sources to ascertain the causes of the Civil War – on the whiteboard, and by asking students why primary sources are important. The students volunteered several reasons.

Madlyn made an analogy between crime scene investigations seen on CSI television programs and historical investigations, and posed the question, “Why is historical evidence important?” Then, she asked the students to take out paper and make a list of things they have done in the past 24 hours. Once they had completed their lists, she asked them to look over their lists and think about which of their daily activities would be likely to leave “trace evidence” behind. Students looked over their lists and began to mark those that would. Madlyn then asked which pieces of evidence they marked might be preserved for the future? What historical record might be left to preserve or tell that story? And, what would a future historian be able to tell about your life from the preserved evidence? The students were engaged in the activity. Madlyn circulated to assist students who were having difficulty conceptualizing the possibility.

Once Madlyn was satisfied that students understood the ideas, she asked them to think about a more current, public event – like the upcoming Trojan nuclear plant implosion – and asked students what kind of evidence might be left behind. Students gave a variety of responses related to physical evidence.

Madlyn asked, “Who records the information?” Students were very animated and engaged in the topic as they gave a variety of responses. Madlyn followed their responses by asking, “For what purpose are different records made?” The students answered with ideas such as to record history, to express a point of view, PGE wants records, ordinary citizens want to tell their story as do businesses, government, media, etc. It was obvious that students were having an “aha” learning experience about the value of primary sources by linking it to the Trojan implosion. Several students uttered, “Cool!” and “That was awesome!” about the discussion.

To summarize the lesson, Madlyn asked students to define a primary source. Students replied that they were first-hand accounts by witnesses to the event or documents about the event, or residue of the event (basketballs, diaries, computers, clothing, books of the time, etc.). She followed up by telling students they would be doing primary source research and asking them to review the rules for primary sources. As students gave the rules, Madlyn revealed them on the interactive whiteboard: 1) Time and Place rule – the closer in time and place of source to the event the better the source may be; 2) Bias rule – Every source is biased in some way so ask, “What is the point of view of the source?”

Madlyn noted the following in her evaluative journal entry:

Since reading Chapter 10 I have become more aware of those moments in the lesson where I am cueing and questioning; my students are especially liking my latest which is “So what?” In other words, explain to me why I should care or why it is important. They are really getting creative at defending their responses. The first time I used the “So what?” one of my students said, “Isn’t that what we are suppose to say?”

Student evaluation of the lesson for Cues, Questions and Advance Organizers indicated that:

- ◆ 77% believed they had absolutely or mostly learned the lesson ideas;
- ◆ 50% thought the instructional strategy had absolutely or mostly helped them learn the ideas;
- ◆ 50% thought the technology absolutely or mostly helped them learn the ideas; and
- ◆ 50% absolutely or mostly liked the way they learned the lesson.

CHAPTERS ELEVEN AND TWELVE: COMPLETING THE STUDY

Chapters 11 and 12 provided a chance for Madlyn to reflect on what she had done with the instructional strategies during the past year and think forward to the next. “Marzano was right,” she wrote, “when he said ‘students need a fair amount of guidance when first learning a complex process.’ ” Reading this book has often affirmed that I am doing the right thing for my students, but there are those moments when I have come up short and have to write little notes in my plan book about what I will do differently next year.”

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