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EDUC 410

Stetzel and Schilling

May 10, 2012

### Impact for Student Learning Evaluation

At my second student teaching placement at Lancaster Elementary School in Huntington, Indiana, I performed a lesson on reviewing multiplying and dividing fractions. This classroom holds three high ability students and one student with a reading disability. Because this short unit was a review for all students, every student learned the same topic and completed the same assignments.

When introducing this unit, I stated to my students that they would be reviewing fractions for NWEA and ISTEP. The objective of this unit was to focus on review and also check that each student could recall what they had already learned with multiplying and dividing fractions. My unit began with a pre-assessment where the students had to solve both multiplication and division problems of fractions. This pre-assessment gave me a chance to know what my students needed to review more and which students struggled the most with fractions. Because I had not been in class when the students first learned fractions, I was unsure on what they already knew or what needed to be taught again. Based on their pre-assessments, they were able to solve simple multiplication fractions but not division fractions. They did not remember the process for how to solve these problems. They also struggled with simplifying the fractions.

The next day I focused on simple multiplication problems with fractions and made sure to have them focus on simplifying. It was not until a few days after that I realized the

students were unclear exactly what I meant when I said to simplify. Some of the students would simplify the fractions, but not to their simplest form. After practicing simple multiplication problems in fractions, we added mixed numbers. We did a review packet and a review worksheet, but the students needed more guidance on this part of the lesson. I then showed the students on the board how to solve multiplication problems with mixed fractions. This allowed my students to be given the chance to work on their own and then come together as a class to figure out a few of the problems. In order to check for their understanding, I assigned them homework in the packet. The following day after they turned their homework in, I was able to go through and see how each student did. If the students only had a few mistakes and it was obvious they understood how to solve the problem, then I knew they did not need any more guidance from me. However, if I found students who were not able to show their work and/or were not grasping the concept, I wrote a note on their homework that they needed help and we would work during the day to make sure they understood what they did incorrectly.

While I worked individually with the students who I noted needed more assistance, the rest of the class worked on a mixed review practice with adding and subtracting fractions. This kept the students busy with their own individual jobs, while I had the chance to support those who needed my help. Adding and subtracting fractions is also a subject on standardized testing that needed to be reviewed so this was a good chance for my students to recall how to solve these operations. After I had assisted the students who needed help with their multiplication fractions, I then realized I needed to review how to solve addition and subtraction with fractions. I decided to show my students on the board an example for

each one. I was surprised that they did not remember how to solve these fractions because I knew it had to have been one of the first operations they learned with fractions.

The next day, in order to review the past couple of days, we did board races. This was very beneficial for my students because it got them active and out of their seats. They became competitive, which made them want to learn and understand how to do the problems. One of the most rewarding aspects of this part of the lesson for me was the fact that one of my students who does not typically excel in math, won many of the games. She had been working hard on her in class assignments and during the game, she showed off her knowledge. She was the one to beat in the game. It was rewarding for me to see her get so excited about doing well. During board races, my students were very engaged in what their classmates were doing because they either were rooting for a certain person or they were sitting at their desks trying to solve the problem out for themselves.

The last day before the post-assessment was review with dividing fractions. I went over what the term reciprocal meant before practicing with the students. I then made sure that they knew how to solve dividing fractions by putting an example on the board. I thought this helped them, but when I looked over their work after the lesson, many of them still did not understand that they had to multiply the reciprocal of the second fraction. I came around to many of the students to remind them of this, but it still did not help as much as I would have liked.

The day after was the post-assessment. We reviewed on the board briefly before the quiz so I could get them thinking about how to solve each problem. While taking the quiz, I noticed many of them were struggling. The quiz was twelve questions with a mixture of adding, subtracting, multiplying and dividing fractions. I was surprised how much they

struggled with the quiz. It may have been difficult because it was not focused on one specific operation for fractions, and the problems were set up in a style that was to help them practice for their NWEA test. After grading these quizzes over the weekend, I decided I would give them each a chance to redo them with a partner. I again, reviewed with them before I gave them back their quizzes. While they worked with their partners, I went around the room and helped students who were still struggling. This type of scaffolding seemed to help many of the students who had previously not done well on their quizzes. If I could redo this specific lesson, I would put a heavier emphasis on scaffolding the instruction by checking for understanding on each topic before moving on. Because this was mainly review, it was difficult to know what the students already knew and how well they would remember what they had learned previously.

Even though my post-assessments were not the responses that I wanted from my students, I still was able to use a variety of teaching methods that can be seen as the best practice for education. According to Grouws & Cebulla (2002), "Emphasize the mathematical meanings of ideas, including how the idea, concept or skill is connected in multiple ways to other mathematical ideas in a logically consistent and sensible manner." In my lessons I made sure students understood how each fraction operation was connected. Division is an inverse of multiplication with fractions so this helped the students continue with that idea before being able to solve fractions. I could have stressed this issue more with the other operations, but with limited time, I struggled finding adequate time to go into further detail.

The U.S. Department of Education (2008) also states that, "Children's goals and beliefs about learning are related to their mathematics performance. Experimental studies

have demonstrated that changing children's beliefs from a focus on ability to a focus on effort increases their engagement in mathematics learning, which in turn improves mathematics outcomes: When children believe that their efforts to learn make them "smarter," they show greater persistence in mathematics learning," (p. 20). This statement follows along with using best practice because it is important for students to feel confident in themselves when they are learning in math and in all subjects. During the board races, I had this happen with one particular student. She felt confident in her answers, which then kept her motivated to continue learning. It also benefitted the rest of the class with her motivation because she is not a student who does typically well in math. The class felt pressured to beat her in the game, which made them work harder and persist in learning the material.

Another best practice of teaching math to my students was found from Van De Walle's book discussing how inverting and multiplying fractions to divide was beneficial (2010), "Interestingly, in a much discussed study of Chinese and U.S. teachers, Liping Ma (1999) found that most Chinese teachers not only use and teach this algorithm, but they also understand why it works. U.S. teachers were found to be sadly lacking in their understanding of fraction division," (p. 325). Because I, myself, was taught to invert then multiply the fractions in order to divide, it was an easy task for me to do in order to teach my students the appropriate method. It was clear to me after I showed my method to my students, that my cooperating teacher had not discussed this method of teaching fractions. I believe that with more practice, they will be able to understand this process and continuously use it throughout their education.

Looking back at the lessons I taught and the pre/post-assessments, I would do many things differently with my students. I would have started out with a review on adding and subtracting fractions. I realized during the middle of these lessons that my students needed review with these operations. If I had gone in order from the beginning, this could have helped support them on the upper-level operations. I also notice in my teaching that many of the same students would answer my questions or volunteer. I try to “cold-call” with my students as much as possible during my lessons, but it is difficult at times when I am so focused on teaching the lesson to my students to call on the first hand I see. During the lessons, I tried to keep the higher-level students busy with more challenging tasks by doing separate work and practice that involved critical thinking. Most of the class completed fraction practice with problem solving and enrichment that required them to not only know how to solve the operations, but use it in real-world problems.

Because the grades of the post-assessments were not to my standard, I have a difficult time understanding whether or not I met the learning objective I made for myself. This learning objective discussed using multiplication and division as inverse operations for fractions by reviewing them and having 100% accuracy on their post-assessments. My learning objective may have been too high by thinking that my students would be able to achieve that high of a score. I set the objective at a high level because I knew fractions were a review for them. However, even though they did not meet my objective, I was able to see growth within their learning. I saw growth on their assessments and also through informal assessments. By walking around and observing or helping with the students, I was able to see how hard they worked in order to understand the concepts. I can use this data to help continue instruction by realizing their strengths and weaknesses and allowing time to

improve on these skills. Mastering fractions is a difficult task but with more practice and more guidance with group work or individual work, they will continue to improve.

When I look back at my four years in college, I pride myself in the growth that I have done, not just within my education, but also as an adult. From day one, I have always wanted to be a teacher. Despite the ups and downs throughout my four years in college, this belief has remained constant. I still have a passion for teaching. I still have a passion for watching students grow over the course of a year, and if I'm lucky, beyond that and I still have a passion to make a difference in a child's life.

Another aspect from my teaching credo that I developed freshman year discusses my belief in how it is an educator's job to provide guidance for students, but it is also important to allow for self-exploring and self-learning. I still agree with this statement to the extent that society is ever changing. Children need to be aware of this aspect in society in order to be successful. Every day there is a new technology being created and used in schools and within a community. It is imperative that children realize this and are accustomed to this lifestyle in order to be successful. It is my job as a teacher to provide the necessary tools and thought-process that goes along with this. My student teaching placements have helped with this belief because of the use of technology in the classroom. I learned new ways to teach to my students using technology, which affects how they learn and respond to my teaching. As important as it is for my students to be flexible, it is also the same for me.

One of the biggest aspects for me with teaching is how I work with my students. I have had the opportunity to develop strong relationships with my students in both student teaching placements. This has given me the chance to practice responding to my students

in an appropriate manner that benefits their needs as well as mine. Teaching, for me, has always been about the students. I get job when I see my students succeed. It does not matter how hard I work on a specific lesson unless my students are learning what they are required and beyond. I get out of bed every morning to teach my students. They are my motivation. Some days are more difficult than others, but without them, I would not have even thought about becoming a teacher.

It is my hope that I will be able to make a difference in a child's life as an elementary educator, but if for some reason, my life leads me in a different direction, I know that I will find some job or lifestyle that fulfills my passion for working with children. Without the four years spent at Manchester College, I would not have been able to fully grasp this passion. I am ready to take on the world of education and use all that I have been taught in order to become a teacher with "ability and conviction."



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