CHAPTER VIII

RESPONSE TO RESEARCH QUESTIONS

Questions about Reteaching

Question 1: What is the process of reteaching?

The initial literature review of reteaching began with limited results – providing a basis for further research in this area. Since the beginning of this study additional published materials addressing reteaching has been brought to the forefront of educational discussion, particularly involving the area of assessment and closing the achievement gap (Ketterlin-Geller, Chard, & Fien, 2008; Ediger, 2007; Williams, 2004) and preparing students for higher education (Conley, 1996). In all of these works, the common theme of "filling in the gaps" where initial instruction failed to meet an initial level of proficiency is something that stands out.

This theme is something that resonates within the observed classroom procedures as well. All five locations identified students who did not meet an initial level of understanding and then used a variety of instructional strategies to ensure the student had received proper instruction. In some cases, that was one-to-one conversations, either between the student and teacher or with peer-partners, small group instruction, or full-class instruction.

The Objective Card acts as a guide for the instructor to keep pace with similar classrooms across the district. However, the observations of these five classrooms indicate that the instructional process is quite ambiguous from teacher to teacher, but the intent of reteaching holds the same value – to give each student the additional assistance to learn the material.

This ambiguity within the five observed classrooms led me to seek additional supportive materials within this school district. This began by looking at my own instructional team, leading us to engage in many conversational debates about what reteaching means. This prompted exploring the district's curriculum guide, where there is no clarification of reteaching – only retesting (Lincoln Public Schools, 2003). This guide declares that every student is to be given an opportunity to retest, though it is a privilege the student earns. The retest is considered then a "vehicle for additional learning opportunities" to further validate student learning.

At the secondary-level, this document only refers to the retesting procedures and addresses nothing at the elementary level. The debate that ensued amongst this secondary team prompted a review of the elementary mathematics curriculum guide, where there is a lot more guidance in terms of reteaching (Lincoln Public Schools, 2003). In this document reteaching is defined as "corrective instruction designed to remedy whatever learning errors the assessment identified." When a student is identified for reteaching they are to be placed in a "guided math group" – which is a small group of students who have a common skill need. These small groups are to be fluid, allowing students to come in-and-out as needed throughout the year. Additionally, this document outlines that instructors need to keep pace with the curriculum guide and that these small groups should not deter a student from remaining on the regular schedule.

This document clearly outlines the importance of reteaching. However, this document also outlines the process of relearning and retesting – such that reteaching is a precursor to relearning and retesting is only an outcome at the end of the process.

Question 2: How do classroom teachers identify and address student needs in the process of reteaching?

In the five observed sites, the district's objective cards (Appendix H) provide a guide for instruction and help identify those students for reteaching based upon the outlined objectives. Each site used the end-of-chapter examinations as the instrument to check for proficiency of the student, most often with four questions in each area allowing the teacher to quickly score along the zero to four scales.

As mentioned throughout chapter four, the identification process was the only uniform method. Engaging in reteaching, however, was where each classroom addressed the individual student needs uniquely. Megan, on the one hand, had a larger number of students who required reteaching. This prompted her instruction to be directed at the entire class and then shifting to individual instruction once students began retesting. David used a similar approach as Megan, but rarely had any students not engaged in retesting. Jennifer and Nancy both talked about the exam with the entire class and then separated those students needing retaught into a smaller group. Finally, Carrie, who used a more preventative approach, still had moments where students needed retaught. Though never actually observed, it was her focus on building community that lead to reteaching to be done throughout her centers approach – so it was conducted by either her, a peer, or even self-regulated. Only in Carrie's case, she made sure there was some form of communication between her and the student before reassessing.

Question 3: What supportive materials are given to students who need reteaching?

In the four classrooms where reteaching was observed on a regular basis the initial exam was the initial supportive material utilized for instruction. In Megan and

David's case that usually focused on reworking the problems together either as they were written or slightly modifying the problem by substituting numbers. In all five classrooms, the textbook also provided an additional set of materials by revisiting sections where problems were missed. Finally, in Nancy's classroom, she actually utilized worksheets that were developed by the publishing company (Appendix I). These worksheets provided the structure to the EDU materials used in David, Jennifer, and Nancy's classroom.

Question 4: How much additional practice does the student need to improve performance during reteaching?

The amount of practice needed varied by student. The initial hope would have been that an equation could have been formulated to place students within a reteaching exercise with a set number of problems. However, because each unit exams is broken into five to eight objectives, the number of missed objectives usually indicated the amount of additional practice required. In some cases, those students who only missed one objective on a chapter test had only made a minor calculation mistake, thus after a little guided practice they were more than ready to reassess. Others required at least fifteen minutes of assistance, where guided practice was given and then additional practice problems.

In the more extreme cases where students missed multiple objectives, there were also little connection to amount of practice. David's classroom probably showed a good example that having students work together could build efficacy along the way, utilizing those students who had mastered objectives to help encourage other students along the way. Megan, on the other hand, also had multiple adult resources to assist her, though it was not always as fruitful in the end.

Questions about EDU

Question 1: Can EDU be modified to fit the individual instructional intervention needs of an elementary mathematics student?

EDU showed limited success from the instructor's perspective. Only David showed a greater interest in learning and observing student progress through the administrative tools.

However, in David, Jennifer, and Nancy's use of EDU, having the individual objectives pre-programmed into the EDU system as singular assessments consisting of four questions, this allowed them to utilize the EDU system using different approaches – from full-class instruction to individual practice problems.

One can speculate that the tracking features might create some hesitation to participate online. However, when observing students using EDU within the classrooms and through the discussions with the participating teachers, the anonymous practice sessions did appear to fit the needs outline previously – to deliver additional support and practice on key objectives to improve performance.

Question 2: Can the use of EDU have similar results in improving the mathematics performance of elementary students identified for reteaching?

In David and Nancy's use of EDU, many of the students used a more competitive approach to measure their performance. Reaching that three out of four barrier consistently was their indicator that they were ready to be reassessed. Thus, there were no indicators that the use of EDU did not meet this standard. In fact, the three classrooms actually demonstrated a higher level of efficiency because each teacher could work one-

to-one with another student while other students would work with the EDU material. Thus creating a supportive tool that someone like Megan might be able to utilize since she had difficulty keeping students engaged in the task and get assistance along the way.

Question 3: Can repeated practice through the use of EDU feedback provide a higher degree of efficacy of mathematics?

Carrie's classroom clearly indicated that getting students engaged in the material and the activities has a higher degree of success over time. Thus, her lower number of students needing to be retaught during this year was a clear sign that the centers were influencing learning. One could easily see that in her case, centers focused on the stability of feedback given to students, whether self, peer, or teacher initiated. EDU's feedback worked on different levels. When students were only focused on the competitive side of trying to get three or four questions correct, then the graphics providing the right or wrong answer was the student's focus – where they would search for the red mark indicating an incorrect answer. A very brief examination of where they made a mistake would guide them back into another set of practice problems, causing them to slow down when they got to the similar type of problems.

However, this study did not show a higher degree of efficacy directly related to feedback generated through EDU. Though the feedback was a catalyst for self-guidance, it was not necessarily the sole reason for success.