

IMPROVING TEACHING THROUGH COLLABORATIVE REFLECTIVE TEACHING CYCLES

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Abstract

Reflection and collaboration are two activities teachers can use to change and improve their practice. However, finding the time and space to do so can be challenging. The collaborative reflective teaching cycle is a structured activity teachers can use to engage in reflection and collaboration. This article describes how a seventh grade teaching team implemented a series of cycles and in what ways the cycles impacted their practice. Implications for instruction and suggestions for use of the cycles in practice are discussed.

Reflection has received considerable attention in the educational literature for decades. It is generally accepted idea that reflective practitioners are better prepared to handle the challenges of teaching (Amobi, 2006; Campoy, 2010). Collaboration, including activities such as joint lesson planning, reviewing and interpreting student work together, and writing common assessments, has been cited as a primary factor in teachers' ability to implement change in their instruction as they move toward more effective pedagogical strategies (Gajda & Koliba, 2008). But while these two ideas surface and resurface in prospective and in-service teacher education, how can teachers find the time and space to engage in these practices?

Reflection is more than merely thinking about one's instruction. It is a *purposeful* act that begins with a problem context or episode, defines/redefines the problem, seeks possible solutions, experiments with solutions, and finally evaluates the results. Similarly, collaboration is more than simply meeting with other teachers. It requires providing teachers with the opportunity to examine, critique, and support one another's work in a safe and supportive environment. Moreover, when teachers focus on student learning needs during collaboration, as opposed to pacing, standards alignment, classroom manage-

ment, scheduling, and administrative issues, they may boost their confidence and even student achievement (Saunders, Goldenberg, & Gallimore, 2009; Tonso, Jung, & Colombo, 2006).

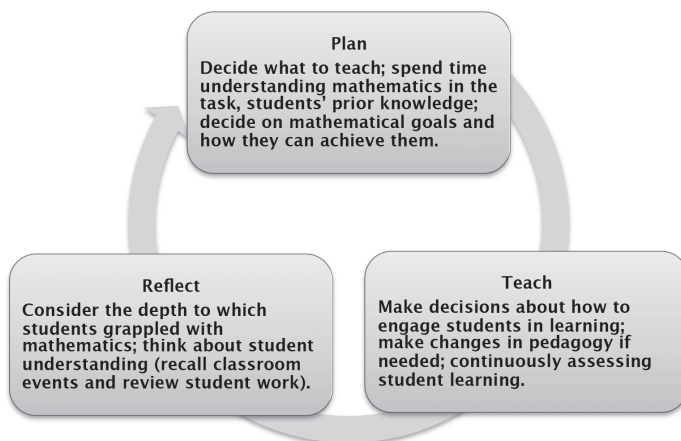
Though teachers understand the importance of these activities, finding time to do them can be challenging. The many demands on teachers' lives and the changing landscape of mathematics education (e.g., Common Core, new student and teacher evaluations) make it difficult to meaningfully reflect and collaborate. But teaching can be more fulfilling and effective when these practices are utilized.

This article discusses one innovative form of teacher reflection and collaboration – the *collaborative reflective teaching cycles* (CRTC) – where teachers utilize a cyclical process of teaching with colleagues to plan for and reflect on instruction. This way of thinking about reflection and collaboration is accessible to teachers who have even just one or two short blocks of time during the week to meet and requires no more than planning for instruction and later thinking about classroom events.

Collaborative Reflective Teaching Cycle

The reflective teaching cycle (Smith, 2001) is a cyclical process of teaching with three phases: planning, teaching, and reflecting. It can be used with one teacher, but in order to make it collaborative, teachers need to meet with peers.

Figure 1. *Reflective teaching cycle*



In the fall of 2008, I engaged in the CRCT with a 7th grade mathematics teaching team, Clark and Tess. I had been working with the team for about a year in an independent research and professional development project. We

had established a good working relationship and felt comfortable with each other, which afforded me the opportunity to gain access to their thinking. Clark, Tess, and I engaged in a series of CRCT over an 8-week period – meeting prior to and following lessons we discussed as a group. Each week we collaboratively planned a lesson Clark and Tess would teach that week. After observing each of them teach, we all met to reflect on classroom events. The goal was to consider how the teachers could implement higher-order thinking with their students. We thought about how the teachers could support and promote mathematical understanding through questioning. We considered the mathematical goals of selected tasks and evaluated pedagogical decisions made during class. We talked about the mathematical meaning behind student ideas and the teachers’ mathematical understanding of concepts they were expected to teach. The teachers considered how they assessed student thinking, how their actions influenced student understanding, and what classroom norms they could incorporate that promoted higher-order thinking. Each of these conversations relates to *pedagogical reflection* (Larrivee, 2008), in which teachers consider how teaching practices affect students’ learning and how they can enhance learning experiences. The goal of this type of reflection is to continuously improve practice and reach all students.

The CRCT also helped the teachers collaborate in a meaningful way. We accomplished this by meeting consistently over the course of two curricular units. The teachers shared their experiences in the classroom and worked to implement new pedagogical practices focused on higher-order thinking. Through a focus on the specific goal of improving higher-order thinking, Clark and Tess provided each other emotional support and practical assistance as they restructured their teaching practices. Moreover, because they were open to alternative ideas, the teachers developed a critical attitude towards their teaching and grew as mathematics teachers and learners.

Impact of the Collaborative Reflective Teaching Cycles

The CRCT influenced Clark and Tess in powerful ways. First, the *collaborative nature* of the CRCT affected each teacher’s ability to realize changes in their practice. By working together, the teachers were able to see aspects of the other’s practice that was not visible to the other teacher. This helped them see how certain decisions facilitated or hindered their students’ opportunity to engage in higher-order thinking. We discussed mathematics, pedagogy, and higher-order thinking. We critically examined their practices and offered feedback on each other’s mathematical thinking, selection of tasks, and implementation of tasks. Clark and Tess were able to view each other’s practice from their own perspective and offered alternatives for instruction, discipline, and motivation.

Moreover, the teachers were able to scrutinize chosen tasks and contemplate the implementation of tasks as we spent time *building knowledge about the mathematics* they were going to teach. We talked about mathematical concepts, mathematical goals of tasks, content standards, and learning goals for students. We clarified concepts, representations, and language the teachers' encountered in the text or other mathematical resources. We discussed our own misconceptions or misunderstandings and potential hurdles for students.

Finally, the CRCT enabled the teachers to *reflect on pedagogical strategies* they used and discuss new strategies they could try. As we talked about strategies, the teachers considered how they could facilitate higher-order thinking, gave suggestions, and contemplated alternative ideas. During the meetings, we identified instances in their teaching that hindered or facilitated higher-order thinking and considered how particular strategies affected student learning.

The collaboration, mathematical learning, and pedagogical reflection were powerful ways the CRCT influenced Clark and Tess. Both teachers realized how the CRCT changed their thinking and provided them the space to think about their teaching in new and productive ways. During one of the meetings, both teachers expressed this in powerful ways.

Clark stated:

I'm learning a lot. I appreciate it because I'm learning a lot. And you know what? It's making me a better teacher ... And that helps me, so it makes me think about what I'm doing wrong and what I can do to make things better for the kids. And so I can go and type that stuff in [my reflection]: how I can change the lesson and the way I presented it.

Tess replied:

Me too. And also, it keeps me flying right. It's always easy for my attention to go in different areas and think about the problem behaviors or, you know. This really helps me stay focused on what's the most important thing is like, what I can do better.

As evident from these comments, Clark and Tess believed the CRCT were helping them become better teachers by providing space to engage in conversations about teaching and learning mathematics.

Using Collaborative Reflective Teaching Cycles

Teachers need to consider several issues before effectively implementing the CRCT. In particular, the relationship among participating teachers is an important component of the cycles' success. The group should foster a safe

environment in which people feel comfortable talking about mathematics content and pedagogy. One thing that helped the CRCT be effective for Clark and Tess was the nature of their professional relationship. They began working at their school in the same year and grade level, and this was their third year working together. They valued each other's input and were comfortable talking about their strengths, weaknesses, what they wanted to change, and what they did or did not know about mathematics and their curriculum.

Additionally, since there is a range of ways to reflect, teachers should practice to engage in deeper levels of reflection that allows them to consider alternative viewpoints beyond external guidelines and personal experience. For example, teachers can reflect on the type of thinking students engaged in during lessons and how deeply students grappled with the mathematics in order to reflect on how teaching practices affect students' learning. Teachers may consider what their students did and said in order to gain access to students' understanding of mathematical ideas by recalling the lesson or reviewing student work. This helps teachers use evidence from personal experiences and ideas from theory or research to explore beliefs and positions about teaching and learning. Finally, teachers may work to deepen personal understanding by developing a "broader consideration of what students' responses might reveal about their thinking, what difficulties such tasks might present for students, and how teachers might help students address (or avoid) common misunderstandings" (Smith, 2001, p. 13). In this way, teachers can continuously work to improve their practice, reach all students, and incorporate a multidimensional view of teaching and learning within a broader framework. These ways of reflecting are referred to as pedagogical reflection (Larrivee, 2008).

At first, using pedagogical reflection was challenging for Clark and Tess. In one of our first meetings, I asked Tess about a classroom event where students were unable to complete a task – create a table and a graph for a particular scenario. When I asked Tess about this "problem," she explained difficulties with timing a bathroom break her students were required to take during this period and because of the time of day. In her words, "In the other classes we got all the way through. So the bathroom break obviously was a huge time sucker . . . So, I don't know if I spent too long, but at any rate, they needed to generate the table. The other classes had an easier time doing that themselves." Based on this reflection, it seemed that Tess believed that the situation was beyond her control, which limited her ability to consider how her actions contributed to the problem or what she might have done differently to help her students succeed. However, as we engaged in more CRCT, Tess became more adept at pedagogical reflection.

In a later cycle, Clark and Tess discussed allowing students to present their work to the class. Tess was concerned because of the number of students in her room but Clark encouraged her to try anyway. The next day she did and

described her class as follows:

Today was a really good lesson. I felt like I really benefited from our discussion last night... I took your words to heart and I'm so glad that I did. I really did let kids go up and explain. And so sometimes, somebody who could do it well would be up here and somebody would say, "I still don't get it." And then I'd say, "Try to ask them. What method do they use?" And then they might say, "Chip." And I know she uses number line or just the algorithm, but she showed them. And that was just, it was good. It was a very good class.

In addition to using pedagogical reflection, it is important that teachers set specific goals for the cycles. In this case, the fact that the CRCT were focused on higher-order thinking helped support teacher learning. Over time, Clark and Tess began to think more deeply about how to identify when they facilitated or hindered higher-order thinking. They thought about the types of tasks they wanted to use and strategies they could employ to encourage students to use higher-order thinking. This focus allowed the teachers to think about particular tasks and try alternatives to traditional instruction, as Tess did in the example above. If Clark and Tess did not have the opportunity to engage in this type of talk, it is possible they would not have explored different strategies.

Finally, professional development needs to be sustained in order for generative change to take place (Garet, Porter, Desimone, Briman, & Yoon, 2001). In fact, teachers who engage in sustained professional development geared specifically toward higher-order thinking can improve their classroom practices (Wenglinsky, 2000). Therefore, to get the most out of the CRCT, teachers should participate in them consistently over time, while realizing that they do not have to be done for every lesson. But by keeping a regular schedule, the CRCT can help teachers gradually become better at using pedagogical reflection and attending to important events in the classroom.

Clark and Tess committed to regular meeting times and focused on improving student achievement and changing their pedagogy. They were dedicated, motivated, and conscientious teachers who were interested in learning about mathematical content and how to teach mathematics to help their students be successful. In large part, as a result of this commitment, both Clark and Tess were able to help their students pass the state-mandated standardized test for the first time in five years.

Conclusion

Improving one's practice is not only important for personal growth and satisfaction, but it is important for students' learning. By dedicating time to

these practices, we can stay true to our students, help them become the best they can be, and prepare them for high school and life beyond – all the while helping us make generative changes in our practice and creating rewarding professional experiences.

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