Co-Planning Strategies to Support Intern Development

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Researchers consistently state that co-planning is critical within a co-teaching context (e.g., Howard & Potts, 2009; Magiera, Smith, Zigmond, & Gebauer, 2005). Unfortunately, the literature provides little guidance on how co-teachers should co-plan together effectively. In order to provide some direction for co-planning, we first explored an adaptation of co-teaching strategies to co-planning. Working with mentor teachers, we further defined co-planning strategies and then tested the strategies with mentor teachers and interns.

Co-planning is particularly important during pre-service teachers' internship experiences. Interns, given their lack of teaching experience, are likely to have more difficulty than experienced teachers being flexible and attentive to student needs as they plan for instruction (Borko, Livingston, & Shavelson, 1990; Leinhardt & Greeno, 1986; Livingston & Borko, 1989). At the same time, interns may be creating some of their first lesson plans designed for actual students in classrooms rather than plans for lessons with hypothetical students. Interns are also facing a rapid escalation in the rate at which they need to prepare lessons – often transitioning from writing several in a semester to writing several each day. Further complicating an already challenging situation is that fact that interns are planning and implementing these lessons in a setting in which their clinical teacher sets the classroom norms and the expectations for quality instruction. Added to these challenges is the fact that many experienced teachers may not write detailed lesson plans, leaving interns little access to the planning decisions made by their mentor teachers. Having interns and mentors co-plan lessons has the potential to aid interns in the transition from mathematics education students to mathematics educators and help ensure that plans reflect norms acceptable to the mentor teacher.

Theoretical Support

Our work with co-teaching and co-planning during pre-service teachers' internship experiences is grounded in Lave's (1991) construct of situated learning. As interns go out into the field, their learning moves from a predominately academic experience to an apprenticeship within a community of practice. In such a setting the working relationship between intern and

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mentor teacher becomes a major determining factor in the intern's ability to participate productively and collaboratively in the practice of classroom teaching. In our work we consider ways to expand traditional visions of this working relationship between intern and mentor, envisioning mentor and intern as collaborators in classroom planning and instruction.

Connections to the MTE Partnership

The purpose of the Mathematics Teacher Education (MTE) Partnership is to improve secondary mathematics teacher education. Internship experiences are a critical component of teacher education. The range of experiences during the internship may be described as an iterative cycle that encompasses observing, planning, teaching, assessment, and reflection. In our past experiences working with clinical placements, the implementation of this cycle has taken a very traditional route where the intern is provided with a set of course standards, a pacing guide, and possibly their mentor's instructional resources, and they are charged to create a lesson plan independently. The mentor critiques this lesson plan once it is written. Frequently this lesson plan does not meet the mentor's expectations for quality instruction; the intern then scrambles to revise the lesson plan based on the mentor's critique. If the lesson plan is still not adequate, the planning and critique process is repeated. Eventually, the lesson plan is approved, and the intern has survived the planning cycle. However, there may now be insufficient time to reflect on the planning cycle and conceptualize quality instruction. Then the cycle begins again.

In an effort to produce more effective secondary mathematics teachers, we now emphasize a 1:1 co-teaching model that emphasizes feedback and reflection throughout the iterative cycle described above. Rather than being sent off to plan in isolation, the mentor and intern plan together, each bringing his or her individual knowledge and skill to the planning process. Planning decisions are made with the goal of optimizing student learning; instructional strategies (including co-teaching strategies) are selected appropriately; and, together, the mentor and intern reflect about instruction and the effect on student learning. Throughout this process the intern assumes an increasing responsibility for planning and instruction as the internship progresses but, unlike the "sink or swim" paradigm presented above, interns are provided with continual support.

Description of the ECU Project

The mathematics education program at East Carolina University has been involved with co-teaching since the fall of 2013. Throughout this process we have been working with the MTE Partnership within the Clinical Experiences Research Action Cluster (RAC). As part of the Clinical Experiences RAC, we have been involved with the co-planning/co-teaching sub-RAC. Despite yearly trainings related to co-teaching, our clinical teachers and interns reported continued difficulty with exactly how to co-plan together and effectively increase the interns'

responsibility for planning and instruction. Our solution to this issue was to draw upon our combined experience teaching high school mathematics and supervising high school mathematics internships to draft six specific co-planning strategies.

Bacharach, Heck, & Dahlberg (2010) and Murawski & Spencer (2011) outline specific co-teaching practices that have successfully supported mentor teachers' in shifting from the traditional student teaching model to a co-teaching model. Analogous to these co-teaching practices, our goal was to develop specific co-planning practices for mentor teachers and interns to use for effective co-planning. We began this process by translating several co-teaching strategies into a similar collaboration process for co-planning. For example, we thought about what the One Teach, One Assist co-teaching strategy would look like for co-planning, which resulted in the One Plans, One Assists co-planning strategy. After defining each strategy we worked with mentor teachers to further refine them and pilot them with mentor teachers and interns. The resulting six co-teaching strategies are described in Table 1.

These strategies parallel the co-teaching strategies, but are not intended to be paired with any specific co-teaching strategy. They also should not be viewed as hierarchical, although some strategies require a more established relationship and rapport between the clinical teacher and intern than others. Consequently, some strategies are best used earlier or later in the internship experience. Similar to co-teaching strategies they should be utilized to best meet the needs of the clinical teacher and intern in effectively designing instruction to support student learning.

Methods Used to Address the Issue

Our first Plan, Do, Study, Act (PDSA) cycle (Bryk, Gomez, Grunow, & LeMahieu, 2015) spanned the academic years 2014-2015 and 2015-2016. We developed training materials for co-planning and co-teaching, and conducted professional development with our clinical teachers and interns. Based on focus group interview feedback from 2014-2015, we revised our materials to include more activities focused on implementation of the co-planning strategies between clinical teachers and interns during the professional development. During the 2015-2016 academic year we were able to pilot data collection related to implementation of co-planning and co-teaching strategies. We were interested to learn if clinical teachers and interns were using the co-planning strategies.

These co-planning strategies are currently theoretical constructs that describe specific ways that clinical teachers and interns can operationalize the co-planning process. We have seen promising anecdotal data from classroom observations and exit surveys completed by clinical teachers and interns during the first PDSA cycle, and we are using this information to implement more strategic and focused data collection and analysis for our second PDSA cycle.

Table 1.
Co-Planning Strategies

Co-Planning Strategy	Description	Adapted Co-Teaching Strategy
One Plans, One Assists	Each co-teacher brings a portion of the lesson, although one clearly has the main responsibility. The team works jointly on final planning.	One Teach, One Assist
Partner Planning	Co-teachers take responsibility for about half of the components of the lesson plan. Then they complete the plan collaboratively.	Station Teaching
One Reflects, One Plans	One co-teacher thinks aloud about the main parts of the lesson and the intern writes the plan.	Alternative Teaching
One Plans, One Reacts	One co-teacher plans and the other provides feedback on the plan.	One Teach, One Observe
Parallel Planning	Each member of the co-teaching team develops a lesson plan and the two bring them together for discussion and integration.	Parallel Teaching
Team Planning	Both teachers actively plan at the same time and in the same space with no clear distinction of who takes leadership.	Team Teaching

Results

Our first PDSA cycle was considered a pilot study, and we received positive indications that clinical teachers and interns were using the co-planning strategies to design instruction. In the words of one clinical teacher,

> We participated in co-planning activities where I provided the lessons and the intern provided the activities, as well as where she provided the lesson and I provided the activities. We developed thinking maps together during co-planning sessions. She created full lessons that I provided input on. We determined together the roles for co-teaching. (PDSA cycle 1, Mentor Exit Survey, 2016)

This quote does not cite a specific co-planning strategy by name, but when compared to the definitions from Table 1, there is evidence of *One Plans, One Assists*/*Partner Planning*, *One Plans, One Reacts*, and *Team Planning*.

Interns also noted successful use of the co-planning strategies. According to one intern,

> At first she [the clinical teacher] was the main planner and teacher. She told me what she did, how she did it, and her thought process. When I took over, she assisted me. She helped me think through planning and what my students

> needed to know and how I should deliver it. (PDSA cycle 1, Intern Exit Survey, 2016)

This quote suggests the use of *One Plans, One Assists* along with *One Reflects, One Plans* with the role of the clinical teacher and intern transitioning as the internship progressed. The intern also highlights the criticality of the clinical teacher making explicit for the intern the implicit decision-making process during planning and instruction.

Impact on local partnership

The quotes above illustrate that clinical teachers and interns not only utilized specific co-planning throughout the internship, but also noted the benefits of co-planning for themselves and their students. As a result of our work with the MTE Partnership and within our program area at East Carolina University, the co-planning strategies are now embedded in our College of Education co-teaching training across all program areas. These strategies have also been shared with our sub-RAC, and we are now refining the training materials for wider dissemination with our RAC and the MTE Partnership at large.

Contribution to MTE Partnership

Two member institutions of our sub-RAC have invited us to conduct workshops for their clinical teachers and interns. In October 2105 and July 2016, Dr. Cayton and Dr. Grady visited the University of South Florida in Tampa to work with Dr. Ruthmae Sears and the Helios STEM Middle School Residency Program (www.usf.edu/education/research/anchin/teacher-initiatives/preservice-teachers/helios-ms-stem-residency.aspx). We were joined by Dr. Patti Brosnan (Ohio State University) to conduct a one-day workshop for co-planning and co-teaching with clinical teachers and interns for middle grades math and science. In August 2016, we worked with Dr. Jennifer Oloff-Lewis and the Residency in Secondary Education program (www.csuchico.edu/soe/rise) at California State University-Chico. Here we worked with secondary clinical teachers and residents across content areas on implementing the six co-planning strategies mentioned above. As a result of our work at CSU-Chico, we are developing an online module for co-planning that will complement the online co-teaching module currently utilized in the RiSE program. The goal is for these CPCT training modules to be made widely available to MTE Partnership schools and beyond.

Next steps

We are currently in our second PDSA cycle (2016-2017) utilizing the co-planning strategies. Based on the first cycle, we have revised our data collection tools to align with our updated research questions:

- To what extent does the training influence implementation of CPCT?
- To what extent is CPCT being implemented?

- What are perceptions about CPCT from various stakeholders (administrators, mentors, pre-service teachers, university supervisors)?

Our data collection tools include pre-surveys, a co-teaching observation protocol, a survey of strategies used, just in time surveys, and exit surveys. Looking ahead to the third PDSA cycle, we hope to examine implications of CPCT on pre-service teachers' practices, classroom instruction, agency and disposition. We also intend create a data dashboard across institutions with our sub-RAC that have been implementing CPCT throughout PDSA Cycles 1 and 2. We are currently refining our training modules for CPCT for wider dissemination within not only our RAC, but also the MTE-Partnership at large.

For More Information

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