MENTOR AND STUDENT TEACHER CO-PLANNING: OPPORTUNITY FOR DEVELOPING THOUGHTFUL PRACTITIONERS

By

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ABSTRACT

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This multi-case qualitative study examined how multiple mentors used coplanning sessions as a place to teach student teachers (STs). Specific ways mentors scaffolded STs learning to plan were investigated using assisted performance theory. The purpose of studying multiple cases was to understand (a) how mentors engaged in coplanning in similar or different ways, and (b) differing co-planning sessions (and mentor practices within the co-planning sessions) influencing ST responses and opportunities for learning. Data sources included audio-recorded co-planning sessions, mentor written reflections, video-recorded mentor study sessions, and semi-structured interviews.

Cross-case analysis showed educative co-planning and high-level questioning by the mentors led to differing ST responses and growth as a thoughtful practitioner. Evidence from the study shows scheduling as co-planning and low-level questioning during co-planning sessions limited opportunities for ST learning. Interns need to be placed with mentors who structure co-planning sessions for joint participation around newly planned lessons, provide responsive mentoring, use intentional moves to scaffold ST development, and prepare the ST for independence through gradual release using moves such as high-level questioning. Findings from the study have implications for mentors working with beginning teachers, and for teacher education programs as they partner with mentor teachers and work to develop educative mentoring practices to improve ST learning outcomes.

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KEY TO ABBREVIATIONS

- ST Student Teachers
- ZPD Zone of Proximal Development

CHAPTER ONE - INTRODUCTION

My Co-Planning Story

I realized early on in my teaching career that the amount of time I spent planning, the things I thought about while planning, and my ability to envision various problems that might occur and revise plans accordingly strongly influenced how well my lessons would go. No teacher will claim that lessons always go according to plans, but there still appeared to be a correlation between the way I planned and how smooth a lesson would flow. Planning was a very important part of my teaching practice. However, I was not often engaged in co-planning with other teachers.

When I started my doctoral studies, I worked as a graduate assistant and taught various courses to undergraduate students. I began co-planning with colleagues and realized some benefits of co-planning: (a) talking through plans and finding possible issues, and (b) sharing ideas and multiplying creativity.

When I began the teacher education part of my career and started helping beginning teachers improve their practice, planning again was a big part of my coaching or teaching model. I realized it was while I talked with the new teachers about their lessons or unit plans - co-planning - there were some great teaching and learning opportunities. At the same time, I heard from student teachers that their mentors were not spending enough time co-planning with them, or that they were just scheduling the week and the student teacher really wanted more. I started to wonder (a) What makes good planning? (b) What do student teachers need to learn about planning, and how can they learn it best? (c) What were mentor teachers doing in co-planning sessions? and (d) Were there certain elements of co-planning sessions that were better than others?

I started my research on co-planning by studying one mentor and student teacher pair to find out how they were talking in co-planning sessions, and I published my first article, *Reflecting on Talk: A Mentor Teacher's Gradual Release in Co-planning* (Pylman, 2016). In this study I found the mentor, by watching videos of mentoring practice, realized she was talking in certain ways during co-planning sessions that she was previously unaware. I also found there was a gradual release process to co-planning, but I wanted to know more. Were there educative ways that mentors should be coplanning and gradually releasing co-planning responsibility? In this dissertation I embarked on a study to answer these questions I had about co-planning.

Alternative Dissertation Format

This dissertation is written in an alternative format (Duke & Beck, 1999) composed of three journal article manuscripts and a segue piece between each article. The three journal article manuscripts focus on mentors using educative co-planning and are intended to stand alone as complete manuscripts. The segue pieces are written to explain to the reader the purpose for each manuscript and how I moved from one manuscript to the other.

The first manuscript, *Key Principles of Educative Co-Planning*, aimed for publication in the *Journal of Teacher Education*, is written for an audience of teacher educators and researchers. This manuscript uses assisted performance theory (Tharp & Gallimore, 1988) to analyze the co-planning practice of six mentors.

In between the first and second manuscript I wrote a segue piece to explain how I moved from the first manuscript, which looked more generally at educative co-planning, to zooming in on one specific practice of educative mentoring – questioning. The second

manuscript, Levels of Mentor Questioning in Assisted Performance: What Should Mentors Ask Student Teachers While Co-Planning? aimed for publication in Mentoring and Tutoring, is written for an audience of teacher educators and researchers. This manuscript looks at mentor questions in co-planning sessions through the frame of assisted performance theory (Tharp & Gallimore) and how mentors use questions to guide student teachers to be thoughtful practitioners.

After the second manuscript, I wrote another segue piece to explain my desire to write a practitioner piece for the third manuscript so that the information could be put in the hands of mentors, who need it most. The last manuscript, titled *Scheduling is Just the Tip of the Iceberg in Co-Planning*, aimed for publication in *Phi Delta Kappan*, summarizes the findings of the dissertation study on educative co-planning in an easy to read format for practitioners.

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CHAPTER TWO – KEY PRINCIPLES OF EDUCATIVE CO-PLANNING Introduction

Researchers have identified co-planning as a valuable practice and place to learn about teaching (i.e. Feiman-Nemser & Beasley, 1997; Schwille, 2008). Co-planning, a joint activity where the mentor and student teacher (ST) meet to make instructional decisions together, can be a fertile site for teachable moments and ST growth (Feiman-Nemser & Beasley, 1997). However, the process and content of co-planning sessions vary – as does the opportunities for STs to participate, learn about the practice of teaching, and analyze decision-making during co-planning sessions (Feiman-Nemser & Beasley, 1997; Norman, 2011; Pylman, 2016; Schwille, 2008). This multi-case study builds on previous work in which I examined how a mentor used talk during co-planning sessions to scaffold ST learning about planning (Pylman, 2016). In this study, I investigate how multiple mentors use co-planning sessions as a place to teach the STs. Specifically, the purpose of this study is to understand ways in which mentors assist the performance of STs learning to plan, and what key principles need to be in place for coplanning to be educative.

Literature Review

STs need to learn and demonstrate proficiency in central tasks of teaching, such as planning as they prepare to teach independently (Darling-Hammond et al., 2005; Hammerness et al., 2005). Planning is the *invisible* work of the teacher, often involving hidden teacher thought processes to which STs need access (Borko & Shavelson, 1990; Clark & Yinger, 1980; McCutcheon & Milner, 2002; Sardo-Brown, 1990). STs need opportunities to engage in planning, teaching, and reflecting as they develop into thoughtful, decision-making practitioners (Grossman, Hammerness, McDonald, 2009).

Mentor teachers play an integral role in helping STs learn to plan and make complex decisions before, during and after teaching. In contrast to planning in teacher education coursework, STs placed in a classroom are able to plan for particular students under the guidance of an experienced classroom teacher with knowledge of context, curriculum, and learners (Feiman-Nemser & Beasley, 1997; Norman, 2011). Research on planning, educative mentoring, and co-planning is relevant to this study, which seeks to understand ways in which mentors act as purposeful teacher educators while co-planning.

Planning

Teachers spend a lot of time planning, in their heads or on paper, how they will enact their teaching. The purpose of planning could include planning an event, a weekly or daily schedule, mapping a year, units, unit progression throughout the year in a specific subject area, lessons, workshop time, or small group instruction (Clark & Yinger, 1979). For each purpose of planning, the teacher engages in thought that considers a multitude of concerns specific to that purpose (Kennedy, 2006). For example, when planning a weekly or daily schedule, the teacher may be more focused on 'fitting in' lessons and curriculum; whereas a teacher planning a unit or lesson may be more focused on student learning objectives. Graff (2011) and Norman (2011) agree that teachers need to consider the needs of the students in front of them; the institutional requirements and material circumstances of their contexts; get inside the content to decide what to teach, and how and when to teach it; and map out the actual lesson.

As teachers plan, they engage in a process of envisioning how the plans might

unfold (Kennedy, 2006; Ornstein, 1997; Shavelson, 1983). They imagine what they want to happen (goals, learning, content, skills); the steps they need to take to achieve that goal (instruction, activities, engagement, time management); possibilities for what could happen (student understanding, behavior, pacing); what could go wrong (misconceptions, confusion, behavior issues, pacing or engagement issues); and often rethink steps to achieve the goal (revising plans, scaffolding, differentiation, adjusting pacing, adding or deleting content). As Kennedy (2006) explains, "Teachers have a feet-on-the-ground sense of purpose and direction and of actions that get there from here. They are plans not plans that are developed in a logical or rational way but scenarios that are envisioned," (p. 207) considering all the possibilities that can happen when working with students. Such a complex process calls for attentive mentor instruction and guidance for ST learning called educative mentoring.

Educative Mentoring

Traditional forms of mentoring often center on providing emotional and practical support for STs (Hobson, Ashby, Malderez, & Tomlinson, 2009). Traditional mentors often tell STs what to do (giving advice and materials) and prepare the ST to teach a certain lesson with the mentor's particular class. Traditional mentor and ST co-planning sessions often involve spending time talking through the weekly or daily schedule or critiquing the ST's independently-created plans while assuming the ST will learn to plan through independent practice and feedback (Bradbury, 2010; Schwille, 2008). Traditional mentoring is not inherently "bad" mentoring. Traditional mentoring practices such as sharing resources and experience, are useful in helping STs build their teaching repertoire. However, limiting co-planning sessions to the traditional type of co-planning

is problematic because the ST is not simply a substitute, only needing to know what to do for that particular class. Instead, the ST is there to learn *how* to plan for any classroom by making informed instructional decisions (Stanulis et al., 2018).

Recognizing mentor teachers can grow beyond traditional mentoring, Feiman-Nemser (1998, 2001) coined the term "educative mentoring." An educative mentor attends to ST concerns and questions while staying focused on helping the ST work on pre-determined long-term ST development goals; creates intentional growth-producing experiences; fosters a disposition of sustained inquiry into teaching practice and student learning; and cultivates skills and "habits of mind" of an effective teacher (Bradbury, 2010; Dewey, 1971; Feiman-Nemser, 1998; Stanulis & Bell, 2017). For example, instead of providing copies of lesson plans and telling the ST what she usually does, an educative mentor thinks aloud about standards, curriculum, and uses background knowledge of students and student work samples to co-plan with the ST (Bradbury, 2010; Pylman, 2016). Educative mentors create experiences for STs to grow as *thoughtful practitioners* who consider all the complexities of the classroom when teaching or planning (Kennedy, 2006; Stanulis & Bell, 2017).

The Thoughtful Practitioner

Research suggests experienced *thoughtful practitioners* have gained a certain expertise (Berliner 1986, 1991; Carter, Cushing, Saber, Stein & Berliner, 1988; Hammerness, Darling-Hammond, & Shulman, 2002). Darling-Hammond and others (2005) and Hammerness and others (2005) refer to this expertise as "adaptive expertise" or "thinking like a teacher." Their descriptions of teacher expertise center around the teacher's ability to make informed instructional decisions based on reflection in practice

and reflection on practice (Schön, 1983), meaning the thoughtful practitioner reflects on student response to instruction and changes methods of instruction accordingly for continual improvement. Thoughtful practitioners are metacognitive and think about how their teaching influences student learning (Hammerness, et. al, 2005).

As teachers plan, they reflect on practice (what has happened, how students have responded, what students have or have not learned), and also reflect in practice while envisioning how the lesson might unfold. While planning, thoughtful practitioners (a) consider student learning goals, (b) consider effective instructional strategies that can help students reach those goals, (c) consider students' backgrounds, experiences, and interests (d) evaluate curriculum to see if it could help reach those goals, (e) reflect on their teaching practices in relation to student learning, and (f) reflect on assessment information to inform future instruction (Darling-Hammond et. al, 2005; Hammerness et. al, 2005).

STs, as beginning teachers, are typically concerned about themselves and their teaching performance – their ability to control the classroom and what others think of them as teachers (Fuller 1969; Hammerness, et. al, 2005; Pitton, 2006). Teacher educators, such as mentor teachers, work to move STs away from naïve generalizations about their experience as the teacher performing toward more sophisticated understandings of the connections between what they chose to teach, how they teach the material, and what their students learned (Fuller 1969; Hammerness, et. al, 2005). Mentors help STs grow as thoughtful practitioners by modeling thoughtful planning practices and explaining their decision-making aloud (Stanulis et al., 2018). All the considerations that go into planning instruction make teaching complex. Helping STs

"learn to think systematically about this complexity is important. They need to develop metacognitive habits of mind that can guide decisions and reflection on practice in support of continual improvement" (Hammerness et. al, 2005, p. 359).

Co-Planning

Co-planning is a commonly used mentoring practice where mentors work alongside the STs, planning together, as STs learn to plan (Feiman-Nemser, 1998; Feiman-Nemser & Beasley, 1997; Schwille, 2008). Feiman-Nemser and Beasley (1997) found that co-planning sessions were a place where mentors and STs could together explore content, design learning activities (for students), and mentors could coach for future ST teaching. In co-planning sessions, mentors have the opportunity to scaffold ST learning as thoughtful practitioners and prepare them for independent decision-making (Stanulis et al., 2018).

Still, differing ways mentors engage in co-planning sessions could influence how educative and growth-producing the experience for the ST could be. Norman (2011) found in some co-planning sessions mentors and STs were planning for the *how* of teaching and some were planning for the *what*, but few were able to put *how*, *what* and *why* together. Norman (2011) concluded that

becoming a teacher of planning requires mentors to possess conceptual and practical knowledge of instructional planning, how STs learn to plan, and how to teach planning... They must possess a knowledge of STs as learners of planning and know how to use planning - their own and their ST's – as a site for the ST's learning (p. 66).

Norman's study illuminated a need for specific mentor knowledge for instructional planning, but in what ways could mentors scaffold ST learning to put the *how, what* and *why* together in planning?

Since mentors are better able to talk about their thoughts while planning than while engaged in instruction (Peterson, Marx, & Clark, 1978), Pylman (2016) investigated how a mentor talked during co-planning sessions to scaffold ST learning in planning and decision-making. In her study, the mentor realized she needed to spend more time explaining *why* she was making certain planning decisions and also set learning goals for co-planning sessions. Pylman (2016) also found there was a gradual release of co-planning responsibility that unfolded as the mentor co-planned with the ST.

Acknowledging co-planning as a core practice of mentoring, Stanulis et al. (2018) studied what educative co-planning looked like through the eyes of the mentors. They found co-planning as an educative practice involved rich explanations of instructional decisions where the mentor explained the reasons for selecting certain tasks and doing things a particular way. Mentors also considered the type of support students may need at different points in the lesson, took time to consider the knowledge and experiences students bring to the classroom that relate to the learning goals teachers set for the lesson, and focused on the student learning goal.

Because planning is often teacher work invisible to observers, mentor teachers need to be intentional about making the planning process more visible as STs learn to engage in effective planning themselves. Co-planning invites STs to collaborate with mentors on authentic teaching tasks – planning instruction around central goals and concepts of effective teaching (Feiman-Nemser, 1998). Joint work in authentic tasks,

such as planning, is powerful mentoring because mentors and STs develop shared understandings about the meaning and purpose of activities; and the ST gradually internalizes certain ways of thinking, problem solving, and decision-making (Feiman-Nemser & Beasley, 1997). While co-planning, STs can be privy to the way the mentor thinks about students' needs, standards, assessment data, and how the mentor makes decisions regarding curriculum and instruction (Stanulis et al., 2018). Through coplanning, STs are also given the space to design rich learning opportunities with the support of an experienced and hopefully knowledgeable other (Schwille, 2008; Smith, 2007).

The research on co-planning still leaves a question to be investigated further: How should mentors engage with STs in co-planning sessions to help STs develop as effective planners and thoughtful practitioners? This study extends previous research work on co-planning by helping to define educative co-planning and further investigate the ways in which mentor teachers assist performance and promote ST independence in planning - all while focused on specific ST learning goals.

Theoretical Framework

Traditional conceptions of the role of mentors were limited to opening up the classroom and providing space for STs to practice teaching while the mentor supervised (Clarke, Triggs, & Nielsen, 2014). A conception of mentors as teacher educators is likened to educative mentors who have a learning stance and see their role as helping or assisting someone learn to teach (Clarke et al., 2014). This type of mentoring has the potential to provide more educative experiences for the ST (Dewey, 1971) through "assisted performance" (Feiman-Nemser & Beasley, 1997; Tharp & Gallimore, 1988).

Educative experiences involve purposefully designing opportunities for the learners to engage in activities so they can learn from the experience, but also to guide the learner to inquire into and reflect on teaching practice.

Assisted Performance Theory

Learning is an interactive and dialogical process. Learning happens through social interaction and participation in authentic activities with an experienced or knowledgeable other. Vygotsky (1978, 1987) found that with collaboration, direction, or some kind of help, learners were always able to do more and solve more difficult tasks than they could independently. The interactive and collaborative learning process was the basis for his construct called *zone of proximal development* (ZPD).

Prepare for independence by gradual release. It is commonly understood that the ZPD is the stage where learners learn or perform tasks with help that they couldn't do independently (Tharp & Gallimore, 1988). However, the goal of assisted performance is for the learner to gradually become independent and capable without assistance. There are phases to ZPD the learner passes through in a gradual release process (Figure 1.1). In the first phase the teacher models and shares thinking while the learner listens. In the second phase the learner participates and verbally expresses learned thinking. In the third phase the learner becomes more self-regulated and monitors understanding – a manifestation of internalization (Vygotsky, 1978). In the last stage the learner becomes independent and utilizes self-assistance. It should be noted; however, this last stage is not permanent, new circumstances often result in recursive action through the phases of ZPD, and external assistance from a knowledgeable other may be needed again (Vygotsky, 1987).



Figure 1.1 Learner Phases in ZPD Through Gradual Release Process.

Assisted performance and co-planning. Learning goals for the ST include learning to plan effectively by thinking as a teacher, considering matters as a teacher does, and taking part in the process of knowledge getting and decision-making as a thoughtful practitioner (Bruner, 1968; Hammerness et al., 2005). As mentors gradually release STs to achieve these goals, they should identify and remain responsive to the ST's ZPD and use intentional moves to scaffold development as the ST works toward independence.

Identify and remain responsive to ZPD. STs, like students, vary in development and need. Tharp and Gallimore (1988) suggested that, like children's development, STs' professional development can also be divided into two levels. The first is the natural level, which the learner can reach without any support. The second is the potential level, or the zone of proximal development (ZPD), which the learner cannot reach without the

support of an experienced teacher (Rogoff, 1984; Vygotsky, 1978; 1987). However, merely providing learning opportunities and assessing growth and change in ZPD is not enough. "Responsive, assisting interactions must become commonplace" (Tharp & Gallimore, 1988, p. 21). Mentors working in an ST's ZPD identify areas where STs need instruction, modeling, or opportunities to engage in activity for practice.

Use intentional moves to scaffold development. Mentors engage in assisted performance to provide the STs scaffolded support as they learn practices of teaching. At times the goals need to be broken down further into sub-goals (Tharp & Gallimore, 1988), meaning a mentor may enact small parts of a practice while controlling elements of the task that are beyond the learner's capability (Stanulis, Brondyk, Little, & Wibbens, 2014). Mentors may need to modify the type and amount of support as "small manageable chunks of the larger practice... are discussed, modeled, practiced, and analyzed as needed" (Stanulis et al., 2014, p. 130). At times an ST may need more support, but the goal of assisted performance is a gradual "handover" (Bruner, 1985) where STs learn through observation and interaction, and eventually internalize thinking and acting as they assume more responsibility and independence (Wang & Paine, 2001).

A mentor supports the internalization of thinking and acting by using intentional moves associated with scaffolded assistance, such as: modeling, explicit instruction, questioning, thinking aloud, and feedback (Pylman, 2016; Stanulis et al., 2014; Tharp & Gallimore, 1988). In assisted performance theory, instructing is not seen as negative but a way for the voice of the mentor to become internalized. This type of assistance carries a lot of responsibility for mentors as STs internalize that which is modeled and taught explicitly. Assisted performance theory also assumes the teacher has expertise that can be

modeled and taught and should be internalized by the learner. Experience and expertise in teaching are not synonymous, and although teachers may have a wealth of experience to share, they may not always be able to claim expertise over the learner (Smith, 2007). At first mentors lead co-planning sessions and share their expertise because they have more experience in planning and teaching. It is an opportunity to share what they know and what they have learned works. However, as mentors gradually release more decision-making to STs, they are inviting the expertise of the ST and need to acknowledge that just because mentors have more experience, that doesn't assume more expertise than the ST (Smith, 2007). In some cases, the opposite could be true. Thus, the gradual release process that invites learner voice, thinking, and decision-making with the support of the mentor's experience is important.

As mentors work with STs they also scaffold support by increasing the complexity of the practice in which they ask STs to engage. "The developmental level of the learner and the complexities of activities all require close accommodation" (Tharp & Gallimore, 1988, p. 70) from the mentor. To provide assistance in ZPD requires mentors to be in touch with the learner's relationship to the task. Sensitive, accurate assistance that challenges but doesn't frustrate (shut-down) the learner cannot be provided without information about learner's needs. In earlier phases of the ZPD, assistance may be frequent and elaborate, but then later occurring less and truncated. Assessing a learner's readiness for greater responsibility is often subtle and embedded in ongoing interaction – like negotiations of the division of labor in the activity (Tharp & Gallimore, 1988).

Teaching is a complex activity in which a teacher can grow steadily more proficient over the years by means of assisted performance, internalization, and self-

assistance in life-long learning. Each means of assistance from a mentor has its place for advancing learners in ZPD through gradual release. Mentors providing assisted performance often alternate the means of assistance. They might also combine, intertwine, or simultaneously use means of assistance as part of the activity of teaching and mentoring (Tharp & Gallimore, 1988).

Because co-planning is an authentic joint activity in which scaffolded support could occur, I use assisted performance as a framework to uncover new understandings about what is happening in co-planning sessions, as well as how mentors might be using co-planning sessions to prepare thoughtful practitioners and gradually release planning responsibility to STs. I also provide concrete examples of educative co-planning to better understand how mentors can assist STs learning to plan and teach.

Methodology

Through this study, I seek to answer the question: How do mentors assist the performance of STs learning to plan and teach? To investigate this research question, I designed a multi-case study of six mentor and ST dyads. A case study approach is an appropriate choice for studying these mentor cases because it allows me to develop an indepth understanding and a detailed description of the unit of analysis - co-planning (Yin, 2014). A multiple-case study design is appropriate for two reasons. First, multiple cases provide a variance in contexts and possibilities of enacted mentoring practice to help expand understanding of educative co-planning. A multiple-case study design will provide the potential to "confirm, challenge or extend" (Yin, 2014, p 51) theories related to how teachers learn through assisted performance. Second, these multiple cases can

provide insight to inform a more common case, or one where the circumstances are similar to those of other mentor and ST dyads (Yin, 2014).

Context and Participant Selection

Table 1.1

Internship. The internship is a component of this mid-western university teacher preparation program. It is a year-long field experience where the STs are placed in a classroom with a mentor teacher in their fifth year in the program. The STs previously graduated with a bachelor's degree in education and need to successfully complete the internship in order to receive a teaching certificate from the university. The STs increase their participation and responsibilities in the classroom as the year progresses, and they are supervised by university faculty.

Participants. This study included six mentor and ST dyads (Table 1.1) who were part of a mentor development project in which I was a facilitator (Stanulis et al., 2018).

Mentor	Student Teacher	School	Study Group
Todd	Molly	Myrtle Elementary (5th grade)	Myrtle
Ruth	Christy	Magnolia Elementary (4 th grade)	Redbud-Magnolia
Judy	Michelle	Magnolia Elementary (4 th grade)	Redbud-Magnolia
Brian	Angie	Redbud Elementary (5th grade)	Redbud-Magnolia
Darcy	Katie	Redbud Elementary (5 th grade)	Redbud-Magnolia
Liz	Sophia	Redbud Elementary (6 th grade)	Redbud-Magnolia

Participants and the Study Group Sessions They Attended

All the mentors were experienced mentors who had mentored student teachers from other colleges/universities and/or had mentored for the current mid-western university previously. The mentors were selected because of their participation in mentor study

groups (described below) where they worked on developing their expertise as educative mentors (Stanulis et al., 2018). All the mentors were from the same school district, in which 71% of students received free or reduced lunch; and student race ethnicity was 26% White, 39% African American, 19% Hispanic, 6% Asian, 10% Other (State Data, 2015). None of the mentors had planning time during the school day as was mandated by the district. The schools Todd, Ruth, and Judy taught in were STEM magnet schools.

Mentor study groups. The mentors in this study were part of a university pilot program designed and facilitated by a university professor and two graduate students (including author). The purpose of this program was to support university field instructors and mentor teachers in learning about three educative mentoring practices (coplanning, observing and debriefing, and analyzing student work), to analyze mentoring practice, and to work together in a community to embrace an inquiry stance in learning to teach (Stanulis et al., 2018). Specific to co-planning, mentors were challenged in development sessions to verbalize what good planning entailed, what they needed to think about when planning, and ways they could teach effective planning to a learner. The six mentors in my study were also part of a larger research project investigating how twenty-three mentor teachers engaged in educative mentoring (Stanulis et al., 2018). Mentors attended six school-group sessions led by me as their facilitator, and two whole group sessions facilitated by our mentor leadership group. Between the school-group sessions the mentors tried out and audio-recorded educative mentoring practices and wrote reflections on their mentoring practice based on question prompts written by university facilitators.

My role as the study group facilitator for these particular teachers allowed me to be a participant observer (DeWalt, DeWalt, & Wayland, 1998) with insider access and knowledge to the mentor teachers' experience. As the facilitator, I led the mentor study group sessions according to an agenda co-created by a university professor, another graduate student facilitator, and myself. Sessions also included time for mentors to problem-solve with each other. My role as facilitator had the potential to increase my subjectivity in this study. Working to remain as objective as possible, I used multiple data sources to triangulate my findings. I also consulted a team of advising researchers to check my questions, methods, and data analysis for validity. This study was not intended to be an evaluation of the professional development or my ability to facilitate study groups, which would increase my stake in the outcomes. Rather, it was an investigation into how mentors co-plan across time, which shifted the focus of the study away from my role as facilitator.

Data Collection

Data collection for this study included recorded study group sessions, recorded mentoring practice sessions, documents, and interviews. Collecting multiple data sources helped me triangulate my findings and strengthen the construct validity of the study (Yin, 2014). Because the mentor teachers were also part of another research project in which I was an investigator (Stanulis et al., 2018), I also had access to the data from that project.

Mentor study group sessions. Mentor study group data consisted of six hourlong video-recorded mentor study group sessions per school group for a total of 12 study group sessions (September, October, and November 2015; January, February, and March

2016). Segments of the recordings addressing co-planning were transcribed, and I wrote journal reflections after facilitating each study group.

Mentoring practice. I collected audio recordings of three to four co-planning session conversations from each mentor and ST dyad, for a total of 21 co-planning sessions across subject areas. I also collected mentor teacher reflections written after their co-planning sessions, responding to question prompts written by university program facilitators.

Semi-structured interviews. Toward the end of April, after the university pilot program was completed, I interviewed each mentor participant individually for 30-45 minutes, asking questions from the larger research project interview protocol (Stanulis et al., 2018). I also asked questions about the mentors' experiences co-planning: what they thought the STs learned from the co-planning sessions and their evidence to support their claims, how they prepared for co-planning sessions, and the specific ST learning goals they worked on in co-planning sessions (Appendix).

Data Analysis

In the first phase of data analysis, I coded interviews and study session transcripts holistically – looking where mentors were talking about co-planning. I engaged in provisional and descriptive coding of mentor talk about co-planning (Saldaña, 2016). My provisional coding was based on literature on educative mentoring and my previous research on educative co-planning. I started with an initial list of codes such as thinking aloud, questioning, telling, and scheduling. Although I started with a provisional list, I added to/revised it as I found new descriptive codes to describe how mentors were talking about co-planning (i.e. *mentor vulnerability* and *value in deeper co-planning*).

In study groups, I noticed mentors sometimes talked about what they *did*, so I coded the mentor co-planning session transcripts using process coding (coding the action and using –ing ending codes) in the second phase of analysis (Saldaña, 2016). As I coded the co-planning sessions, I didn't code line by line, but coded segments based on the process code. If talk was off-topic and had nothing to do with planning, that was also coded. At times, I engaged in simultaneous coding and coded certain segments with more than one process code, because the talk often fit more than one code. For example, in this quote, "I'm kind of wondering if it would work a little bit better if I do it differently, because it tended to be a little too much for the students to do the other assignments with that summary on top of it" (Liz, co-planning session 1), the mentor is both thinking aloud and focusing on the student learning needs. Also, I coded the type of planning (i.e. scheduling) while also coding other processes (i.e. mentor telling). Simultaneous coding allowed me to later investigate the inter-relationships between process codes.

In the third phase of analysis, I cross analyzed the data according to theoretical propositions (Yin, 2014) of assisted performance theory to describe how mentors and STs collaborated in the joint activity of co-planning. Specifically, I analyzed the transcribed mentor study group session conversations about co-planning, mentor written reflections, and audio-recorded and transcribed co-planning sessions according to the principals of assisted learning theory. I sorted the coded data into four categories (Emerson, Fretz, & Shaw, 2011): (a) structuring situations for joint participation, (b) responsive mentoring (responsive to ST's learning needs and ZPD), (c) intentional moves by mentor to scaffold development, and (d) preparing ST for independence through gradual release of

responsibility (Stanulis et al., 2014; Tharp & Gallimore, 1988). For example, I coded coplanning sessions according to mentor scaffolding practices such as providing resources, clarifying content, and thinking aloud. I also looked for alternative descriptions for how mentors were using co-planning sessions that could strengthen understanding of educative co-planning and assisted performance (Yin, 2014).

Findings

Analysis of co-planning conversations between mentors and STs revealed key principles of co-planning that were needed to make the co-planning sessions educative for the ST. In educative co-planning, the mentors gradually released planning responsibility by working on long-term ST learning-goals while scaffolding ST learning about the important components of planning. Such educative co-planning helped mentors develop thoughtful practitioners who could plan independently.

Mentors Gradually Released Planning Responsibility

Mentors moved through phases of gradual release of co-planning by first leading co-planning sessions, then sharing decision-making, and eventually releasing the decision-making to the STs as they led the planning sessions. However, to ensure STs were learning to be thoughtful practitioners as they planned, mentors scaffolded ST learning as they moved through four phases of gradual release in co-planning (Figure 1.2).

Phase 1 – Mentors modeled decision-making. While considering what the ST needed to learn about planning, the mentors focused on certain important components of learning to plan. All six mentors stated that, one way they knew their STs "got it" was when, while planning, the STs envisioned aloud what they thought might



Figure 1.2 Phases in Gradual Release of Co-Planning. Educative mentors used specific strategies to gradually release planning responsibility to STs while simultaneously developing them to be thoughtful practitioners while planning.

happen; how students might respond; misconceptions students might have; what issues might arise; and how they would adjust the plans to address them. In order to get STs to this point independently, mentors scaffolded ST learning while planning before releasing full responsibility to the ST. Mentors made their thinking transparent (thought aloud about what they were deciding and why) around four specific components of planning: (a) analyzing the curriculum, (b) focusing on student learning needs, (c) envisioning how students might respond, and (d) returning to the objective.

Analyzing the curriculum. Mentors and STs engaged in a process where they analyzed curriculum by (a) discussing the pros and cons of the curriculum, (b) spending
time clarifying curricular expectations, and (c) deciding what activities to do and what to cut based on objectives. In the first co-planning session, Todd analyzed the math curriculum with Molly,

Yes, and I like that from 'Investigations' [math program], that they do it that way... we want to teach them to understand math, not just to do math, and I feel when you teach the standard algorithm, and that's all you do...they just learn to do the math. They don't understand why it happens.

Todd analyzed the curriculum, explained what he liked about it and why based on what the students need to learn – emphasizing that good curriculum helps students understand concepts. Darcy also analyzed curriculum in her first co-planning session with Katie,

I'm not going to get the book out again for that just because, although it's in there, it's too dense and [students] can't understand what they need to do. So, I'd rather find simpler things that are on a piece of paper and do copies.

Darcy also demonstrates how she analyzes curriculum when she thinks aloud about how she chooses appropriate resources based on knowledge of her students.

Focusing on student learning needs. When co-planning, mentors focused on student learning goals or needs; planned based on what students needed to learn (standards or objectives); thought about the knowledge students had based on assessments; and discussed where students were developmentally at this particular age. When talking about planning in his interview, Brian stated, "It's all student-centered... It's what's going to get [students] to get the objective you want them to have." Todd also wrote about how he focused on what students need to learn in a reflection, "When we plan, we take into account... how we can get a student to the end point we want" (written

reflection 10-28-15). When co-planning with Molly, Todd also addressed student development levels, "That is a huge expectation for 5th grade... And although they come in with some basic understanding of it, it is still such a challenge for them" (co-planning session 4). Educative mentors were not simply planning based on what the curriculum prescribed that they do, but also based on what students needed and where students were, and they were voicing this decision-making out loud so STs understood why.

Envisioning how students might respond. When co-planning, mentors visualized/anticipated problems they might encounter, misconceptions students might have, what might happen, or possible student behavior. When co-planning a math lesson with Michelle, Judy explained,

So, [students are] doing 2 times 403 in parentheses and then multiply that by four. They don't know what this is. They look at that and go what do I do? They try to line all those numbers up at once and multiply them all at once (co-planning session 1).

Judy helped Michelle see possible student misconceptions and the importance of considering possible ways that students might approach a problem when planning.

Mentors envisioned organizational needs and described how they were going to manage materials, keep things organized, decide groups, or transition. Liz, co-planning with Sophia, plans for groups,

You and I together we'll choose those partners together so we make sure that we get students that will work well, because if they choose their own we always have two that don't get chosen, and then normally those two don't want to work together. We'll assign the partners and obviously try to get people who will work

well together but will also get along, but also not get along so well that they don't work.

Liz envisioned what might happen in certain grouping situations and explained *why* they were going to assign certain groups.

Mentors also envisioned the pacing of the lesson. Brian explained the pacing of a literacy lesson on using the Internet to Angie in the first co-planning session,

Sometimes you take for granted, you think the kids are quicker on the Internet than we are. This is still kind of new to them... I talked earlier about adjusting the time that we're giving them to do it. We were in the computer lab for forty-five minutes and there were still kids who had not finished. We had nine words that they were looking at. Forty-five minutes, that's about five minutes a word.

Brian used his knowledge of students to envision how long it might take them to work on the task. He also took the time to explain to Angie how he estimated the pacing time.

Returning to the objective. Mentors made a point to either begin co-planning sessions by stating the objectives or goals of the lesson or unit planning, or they would stop mid-planning to point back to what the objective or goal of the lesson was. Liz started out her co-planning session with Sophia by clarifying the objective,

We're going to co-plan a lesson on writing a persuasive essay. We've gotten that started and what we're trying to do in this unit of writing is helping the kids develop a vocabulary that would help them have strong messages of persuasion, convincing but kind of stretching their vocabulary a little bit.

By stating the objective at the beginning of planning, Liz clarified for Sophia what they were trying to accomplish, what they wanted students to learn or be able to do at the end of the unit – expanding their vocabulary so they can write strong messages of persuasion.

In the middle of their first co-planning session, Judy clarified a math objective to Michelle,

That's higher-level thinking in my book, where [students] are just given a number and they have to create a problem that matches that number. They have to think of a problem themselves, so, eventually we want to get there. But the point I'm trying to make is we just can't give them sheets and sheets of multiplication with just the algorithm where they're just multiplying and getting the correct answer.

Judy explained that their objective was to get students to the point where they could be given a number problem and could create a word problem that matched the number problem. She went on to explain to Michelle that just giving students practice sheets with algorithms was not going to get students to that higher-level thinking.

Mentors made their thinking transparent by thinking aloud about what they were deciding and why, while (a) analyzing the curriculum, (b) focusing on student learning needs, (c) envisioning how students might respond, and (d) returning to the objective. Mentors were modeling for the STs the importance of and how to engage in these four components of planning.

Phase 2 – Mentors shared decision-making. The educative mentors did not only model and think aloud (talk) through important components of planning, they also gradually released planning responsibility to the STs by sharing the decision-making.

Mentors often asked STs for their opinions while planning, even when the mentor was leading the planning and modeling how a lesson should be accomplished. Todd explained in an interview,

Asking [ST's] thoughts on how I've said I'm going to present something and listening too. If they... have an opinion that it could be done differently. It doesn't have to mean that I'm going to do it their way, but it's always important to hear from someone else because there's times when you don't think about a different way to do it.

Most mentors, like Todd, were open from the beginning to ST input when co-planning.

When STs led more of the planning sessions, mentors still made suggestions on plans, but often let the STs ultimately decide. In a second recorded co-planning session, Judy told Michelle, "Either way is fine, I was just suggesting..." Liz shared in a study group in March, "I kind of gave [Sophia] some suggestions and she totally went a different way that would work a little bit better." In both cases the mentors let the STs ultimately decide. Once mentors began to gradually release planning responsibility to the ST, they stepped to the side more and let the STs make decisions and experiment. In his last co-planning session with Angie in April, Brian said, "I guess I'll ask you. What are some of the ideas that you have for this? I have some ideas of my own, but..." Brian clearly stepped to the side and let Angie make the decisions. Brian remarked in a study group back in September that this is the point where he wanted to bring Angie, "[Asking] what do you think? Or what might you try or how might you start? And just kind of give [STs] that opportunity to take a risk," as they moved toward independence in planning.

Phase 3 - Authentic co-planning. When the units or lessons being planned involved new content or ideas that the mentor had not taught before, more release toward independence for the ST occurred. In all three of Brian's co-planning sessions, either Brian and Angie were leading the session together, or Angie alone. In each of these sessions, Brian and Angie were planning something new that Brian had not taught before, or they were rethinking how to teach something. Brian was still scaffolding Angie's learning by thinking aloud about his decision-making, envisioning what might happen, focusing on student learning needs, and gradually releasing to Angie by releasing decision-making and/or questioning her. The shift was that Angie also engaged in thinking aloud, envisioning, and focusing on student learning needs during the co-planning session as well. Brian reflected,

"I definitely had planned to get her input when it came to the process we were using. Angie had a great idea to let students partner up and work as a team. I can't wait to see how it works" (written reflection 10-13-15).

"This final co-planning was probably our most collaborative one yet. Ideas for the assignment were coming from both of us" (written reflection 4-20-16).

Mentors did not always plan something new with STs. In the first recorded coplanning session in September, Ruth explained to Christy how she would teach math that week. There was no new curriculum, yet a few decisions needed to be made, such as what to teach when. In Ruth and Christy's second and third recorded co-planning sessions, they were either planning new lessons or working with new curriculum. In these sessions, Ruth engaged in more thinking aloud, envisioning, focusing on student learning needs, and questioning Christy, the ST. In the following excerpt from their third coplanned session, they worked to understand and analyze the new engineering curriculum in which students were asked to design a site for a TarPul,

Christy: Mm-hmm (affirmative). I think that page was good. Ruth: It is good.

Christy: Because they have to think about the factors that are important to think about when you're choosing a site for the TarPul.

Ruth: You do, but I think I'm agreeing with you, I think vocab needs to come first... because they are using geo-technical terms... engineering, core samples, erosion and things like that.

Christy decided that a particular page in the curriculum was good because it asked students to think about factors to consider when choosing an appropriate TarPul site. Christy suggested reviewing the vocabulary first in the lesson, and Ruth agreed after analyzing the curriculum with her. Both Ruth and Christy analyzed curriculum and made decisions together more often when planning a new lesson, compared to their first coplanning session where lessons were repeated from prior years without much revision.

Phase 4 – Independent planning (with support). All the mentors eventually let the STs lead the co-planning sessions as they moved the STs toward independent planning. This step in gradually releasing responsibility allowed the mentor to move into a role where they supported the STs through questioning. As the STs explained their plans, mentors asked STs questions to clarify the plans, suggest, get STs to envision, or probe the STs' thinking and get them to explain why. For example, in the second recorded co-planning session with Katie, Darcy asked, "Do you want them to focus on anything specific while they're reading?" to probe Katie to think deeper about what she

expected from students. In a second co-planning session with Sophia, Liz asks, "Why did you want to try book clubs? ... How are you going to assess book club?" to get Sophia to explain why – her reasoning for choosing book clubs, and also probing her to think about how she would assess them. In her fourth co-planning session Liz asked, "What do you think the objective is for the kids? Why are we doing this as opposed to just having a discussion?" After spending time modeling her own focus on objectives when planning, Liz wanted Sophia to consider the objective when planning, and she did so through questioning.

The mentors engaged in educative co-planning by working on long-term ST learning-goals while scaffolding ST learning about the important components of planning. Educative co-planning helped mentors gradually release the co-planning to the STs as they moved toward independence (Figure 1.2).

Mentors Intentionally Worked on Long-Term Student Teacher Learning Goals

While engaged in a gradual release of planning responsibility process and scaffolding the learning of the STs, some of the mentors also remained responsive to STs' ZPD and worked on long-term ST learning goals during co-planning sessions. These long-term goals were connected to how the mentors envisioned thoughtful practitioners should plan or the things they should consider when planning.

Todd had specific learning goals for Molly in mind as he mentored. He said in the first study session (9-30-15) that his intent for co-planning was,

for [Molly] to realize how much is going on behind the scenes... other than 'tomorrow we're going to teach this book because it's the next one in the author study'... There's a rhyme and reason to it... There's a lot going on with planning

besides just, 'Am I going to hit these strands, am I going to cover this, and where am I moving on tomorrow?'

In a written reflection (3-7-16) after co-planning session 3, Todd wrote "During this coplanning time I was hoping to address a couple different topics. I was hoping to talk about management during guided reading groups and her feelings toward small versus whole group instruction." In co-planning session 2, it was clear that Todd explicitly taught Molly in relation to this goal when he said,

The idea of guided reading group is you're working with them on a specific skill, and that the groups can change once you've worked on that skill... [In whole class book clubs] you get the students who do have the lower comprehension that can hang because they playoff from everybody else. But I don't know how much that's really helping them. I really want to change things and try something new this year.

In co-planning session 3, when Molly was taking over book clubs, with his ST learning goal in mind (management during reading groups), Todd asked questions such as, "When you're back here working with your individual groups, what are you going to have the rest of the class do?"

Brian was also intentional with how he was using co-planning sessions to work on Angie's learning goals. In February 2016, Brian wrote about one of the ST learning goals he was working on, "My main focus was to help [Angie] to think about differentiation, as well as continuing to engage the students in higher order thinking skills." Brian reflected in a study session (3-8-16) after co-planning session 3, saying, "I focused a lot of my attention on – or my questioning on differentiation because I know [Angie] has kind of

been trying to figure that stuff out. So, a lot of my questions were 'What are you going to do for the kids who this is going to take them two seconds to do and they're waiting for the next step?"

In addition to differentiation, Brian also focused on the goal of questioning for higher-order thinking. In co-planning session 3, Brian and Angie co-planned their ecosystem culmination project and discussed what kind of labeling students would do on their food web in the following conversation,

Brian: [Label] predator, prey, or both?

Angie: Yeah, because I think that would take that a step further and make them really think about 'this is eaten by this, but it also eats something else.' So, they would really have to analyze the web.

Brian: Ok, which are predator which are prey, which are both? Yeah, I think that would definitely take it to that inquiry level though too, because they are going to have to do a little more research.

In this exchange, Brian helped Angie think about higher order thinking skills students would need to complete the task.

Judy's learning goal for Michelle while co-planning focused on teaching Michelle to consider student learning needs – to understand what students know or don't know, what they need to know, and where they need to reach. Judy explains,

What I wanted her to learn, and what I think I said a lot was, 'When we get to this part we have to think about all these prerequisite skills [students] need to have before they [can] get here' ...[Michelle] spent most of her time in kindergarten/first grade so she's not aware of that (Study session 10-20-15).

In this statement, Judy demonstrated a focus on Michelle's learning needs and her goals for learning. Reflecting on a co-planning session, Judy explained how she explicitly instructed Michelle in regard to her learning goals.

I had my ST look over the subtraction pre-tests that we did to see where [students] were missing some things. And so today when I went over subtraction with [the students] [Michelle] said, 'You had all the things I saw that they were missing in there.' And I said, 'That's what happens every year. Those are the kind of [difficulties] they come in with every year, so I hit those' ... She needed to know, that's how I designed that lesson, because I knew from the last 20 years how kids have been coming in and those are the misunderstandings (Judy, study session, 10-20-15).

Judy intentionally created an opportunity for Michelle to analyze student learning, notice student misconceptions, and observe Judy teaching a lesson to address that data. Following the lesson, the mentor and ST met to discuss what Michelle learned and to coplan what would happen next.

Discussion

Planning is an extremely important part of teaching that has a profound influence on the learning outcomes in the classroom (Borko & Shavelson, 1990; Clark & Yinger, 1980; Sardo-Brown, 1990; Shavelson, 1983). Therefore, learning to plan well is crucial for ST education. University-based teacher educators spend time teaching preservice teachers how to plan in courses, but it isn't until the internship that the learner is able to begin considering all the complexities while learning to plan (Hammerness et al., 2005). Mentors use co-planning as a way to teach STs to plan and "think like a teacher" when

making decisions. Co-planning is integral to ST development as they work to understand the complexity of teacher decision-making (Feiman-Nemser & Beasley, 1997; Hammerness et al., 2005; Kennedy, 2006; Norman, 2011; Schwille, 2008).

Knowing how to teach STs to plan effectively does not always come naturally to mentors (Feiman-Nemser & Beasley, 1997; Norman, 2011). Many mentor teachers are not prepared to recognize their essential role as teacher educators, and their ability to teach children does not easily translate into an ability to educate STs in areas such as planning (Feiman-Nemser & Beasley, 1997; Norman, 2011; Schwille, 2008). Mentors need specific skills to guide STs to the goal of independent planning. Research on coplanning between mentor and beginning teachers such as STs is scarce. In this study, my findings illustrate key educative co-planning practices mentors can use to help STs learn what is important to think about and decide when planning. Mentors need to engage in co-planning sessions in specific ways that make the sessions more educative.

Through analysis of mentor and ST co-planning sessions, I examined how mentors assisted the performance of STs learning to plan. By examining mentor and ST actions, I analyzed specific ways educative mentors gradually released planning responsibility to STs by working on long-term ST learning-goals and scaffolding ST learning about the important components of planning. Since mentors in this study worked collaboratively in mentor study groups to develop their educative co-planning practice, the results from this study have important considerations for mentor preparation and development.

Knowing the Student Teacher and Mentoring Responsively

Although it has become common for teachers to think about their teaching in relation to student needs and teaching at a level just beyond what the student can do alone – called the Zone of Proximal Development (ZPD), not all mentors recognize that their STs also have learning goals, needs, and a ZPD to target (Wang & Paine, 2001). Teachers who are educative focus on helping STs work on pre-determined long-term teacher development goals and produce intentional growth-producing experiences to work on those goals (Feimen-Nemser, 1998; Stanulis & Bell, 2017). However, many mentors get lost in their pupils' needs and solving day to day problems, forgetting to tend to ST learning goals through educative mentoring practice.

Not all STs have the same needs or learn in the same way. To provide sensitive, accurate assistance in a ST's ZPD requires mentors to be in touch with the learner's knowledge, misconceptions, abilities, strengths, and needs. Mentors need to dedicate time to conversing with STs about their knowledge, misconceptions, strengths, and needs; and together they can set learning goals and action plans - or intentional learning situations in co-planning sessions (Stanulis & Bell, 2017; Stanulis et al., 2014; Tharp & Gallimore, 1988).

The findings from this study show the benefits of responsive mentoring – or mentoring based on ST learning goals in educative co-planning sessions. When mentors took time to identify ST learning goals in relation to developing as a thoughtful practitioner who could plan effectively, they were able to bring that knowledge into coplanning sessions and address learning goals by explicitly instructing, clarifying content, questioning, and thinking aloud (Tharp & Gallimore 1988).

Scaffolding Student Teacher Learning About and Through Planning

Helping STs learn to plan well as thoughtful practitioners means mentors need to scaffold ST learning through various educative mentoring moves designed to gradually release planning before releasing full planning responsibility (Bruner, 1985; Pylman 2016). Mentors need to move from (a) modeling decision-making, to (b) sharing decision-making with STs, to (c) authentically co-planning new material where expertise is coming from both planners, to (d) releasing the ST to independent planning while the mentor supports through questioning.

Modeling decision-making. In co-planning sessions, when mentors are simply telling the ST what they will do or providing and explaining resources, they are helping the ST teach that particular content without giving the ST decision-making processes to internalize for future use (Stanulis et al., 2018). In this study mentors modeled and taught the STs important components to think through while planning: (a) analyzing the curriculum, (b) focusing on student learning needs, (c) envisioning how students might respond, and (d) returning to the objective. The way the mentors were thinking aloud and making decisions could be internalized by the ST and used in future independent planning. (Tharp & Gallimore, 1988; Vygotsky, 1987; Wang & Paine, 2001).

Shared decision-making and authentic co-planning. When mentors in this study co-planned lessons they had done before, the opportunities for the ST to make decisions, think aloud, envision, and consider student learning needs were diminished. A continually successful lesson-plan or unit may not need new ideas, decisions, or change. The mentors needed to go out of the way to include STs in decision-making and ask for opinion/ideas. By contrast, when the lesson, unit, or activity was something the mentor

had not done before, or wanted to revise, the newness of the decision-making put the ST in a position to take on a lot more decision-making and thinking actions. These findings extend claims by Bruner (1968), Feiman-Nemser & Beasley (1997), and Tharp and Gallimore (1988), who argued that STs' learning results from his or her active *participation with* the mentor in the activity. If the goal of assisted performance is a gradual handover where STs eventually assume more decision-making responsibility and independence (Bruner, 1985; Wang & Paine, 2001), then what is being planned needs to eventually, if not often, be authentically something new to be decided on together. When the co-planning participation is authentically joint or collaborative, the STs are given more space to experiment, share their expertise, and design rich learning opportunities in the company of an experienced and knowledgeable other (Schwille, 2008; Smith, 2007).

Educative mentors need to be able to thoughtfully plan for their students, teach STs how to plan well by scaffolding learning in response to ST learning needs, and gradually release the ST to independent planning over time (Pylman, 2016; Stanulis et al., 2018).

How Do Educative Mentors Release Student Teachers to Independent Planning?

Students need teachers who plan as thoughtful practitioners by (a) considering student learning goals, (b) considering effective instructional strategies that can help students reach those goals, (c) considering students' backgrounds, experiences, and interests (d) evaluating curriculum to see if it could help reach those goals, (e) reflecting on their teaching practices in relation to student learning, and (f) reflecting on assessment information to inform future instruction (Bruner, 1968; Darling-Hammond et. al, 2005; Hammerness et. al, 2005). Ultimately, mentors need to guide the STs to a place where

they are able to lead planning sessions or plan independently while thinking through these important components of planning. As STs shift into a more lead role, mentors should step back and allow STs to make the planning decisions and provide support through questioning (Pylman, 2016). Mentor questioning is provided to guide STs to think about the components of planning they might not be considering at the time, and to prompt STs to defend their decision-making.

When the ST takes up these actions in a co-planning session, mentors can release the ST to independence in planning. This does not mean the ST will no longer need assistance, as all teachers are continual learners and benefit from mentoring. As new circumstances and challenges arise, STs may need mentor assistance again (Tharp & Gallimore, 1988).

Implications and Recommendations

Most teachers easily see their responsibility in planning lessons or units based on their students' learning goals, but for many mentor teachers, thinking about and planning learning opportunities around ST learning goals does not come naturally. Educative mentors who think about ST learning goals and prepare for co-planning sessions by thinking about what the ST needs to learn about and through planning, enact a role of teacher educator (Feiman-Nemser, 1998). However, not all mentors see themselves as teacher educators (Feiman-Nemser 1998), and mentor preparation and development are often needed to assist mentors as they learn new practices such as educative co-planning.

A teacher of planning requires mentors knowledgeable about planning, how STs learn to plan, how to teach planning and use co-planning as a site for learning, and their STs' specific learning needs (Norman 2011). Additionally, preparing a ST for

independence includes developing the skills of a lifelong learner who is able to monitor breakdown in understanding, and is resourceful in finding further assistance when no longer in the care of a mentor. Although mentors are teachers, this specialized knowledge doesn't always come naturally for many mentors, and not all co-planning sessions are as fruitful for ST learning as they could be.

Mentors need sustained preparation and development around educative mentoring practices such as co-planning to make the most of the learning time they spend with STs (Pylman, Stanulis, Wexler, 2017). The insights from this study suggest mentor preparation and development should include learning around:

- How to identify ST learning goals and what it means to mentor responsively
- The power of authentic decision-making over new material
- Scaffolding moves: i.e. thinking aloud, clarifying content, analyzing curriculum, envisioning, focusing on student learning needs, mentor questioning
- Gradually releasing decision-making while scaffolding
- Promoting an inquiry stance: the mentor and ST are both life-long learners, reflective, and using student data to identify student learning needs and plan

Further research is needed to investigate the best structures for mentor development, the ways in which universities and colleges can authentically collaborate with mentors to develop mentor preparation and development, and the value of educative mentoring practices (such as co-planning) from the perspective of the STs.

Since field experiences and learning to plan in the complex field are considered critical to teacher preparation (Darling-Hammond et al., 2005; Darling-Hammond &

Lieberman, 2012), and teacher preparation programs rely on mentors as ST educators, it seems logical teacher preparation programs should collaborate with mentors to design and provide mentor preparation and development. Given the current push for teacher preparation program evaluation, more focus has been placed on ST and beginning teacher outcomes (Darling-Hammond, 2006). A review of research by Hammerness and others (2005) suggests that beginning teachers can demonstrate more accomplished practice when they receive more purposeful preparation in the field. Mentors play a significant role in the preparedness of the future teachers and deserve the attention of support of teacher preparation programs. Can teacher education programs afford not to invest their effort in ST mentoring?

APPENDIX

Appendix

Semi-Structured Interview Protocols

- 1. How would you describe intern learning or learning to teach?
 - a. How do you know when it happens?
- 2. Think back to a time you engaged in a co-planning session with your intern. (Give prompt from something I heard recorded or in written reflection)
 - a. Describe what you were co-planning and why.
 - b. Who was going to teach the lesson after the co-planning?
 - c. In what ways, if any, did you prepare for the co-planning session and why?
 - d. What were you hoping the intern would get out of the session? (Were there specific things you wanted your intern to learn or consider?)
 - e. In what ways (if any) did you scaffold your support of the intern's learning in the co-planning session?
 - f. What happened? What do you think your intern learned from the session? Why do you think?
- 3. Think of another co-planning session you engaged in with your intern (Possibly a time that it didn't go well or as planned)
 - a. Describe what you were co-planning and why.
 - b. What happened?
 - c. How was this session similar or different to other co-planning sessions? (Did you have different learning goals for the intern, scaffold support differently, or release some more responsibility?)
- 4. When reflecting on or talking about the co-planning sessions in study groups, what (if anything) did you realize about the co-planning sessions with your intern?
 - a. What (if anything) did you realize about what you said, did, or learned in the co-planning session?
 - b. What (if anything) did you realize about what the intern said, did, learned in the co-planning session?
 - c. What (if anything) did you learn from other mentors sharing about their co-planning sessions?
- 5. What have you learned about how interns learn?

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CHAPTER THREE – ZOOMING IN ON ONE MENTORING PRACTICE: QUESTIONING

In the first manuscript (Chapter 2) I investigated how multiple mentors used coplanning sessions as a place to assist the performance of student teachers learning to plan and argued for key principles that need to be in place for co-planning to be educative: knowing the student teacher as a learner and mentoring responsively, scaffolding student teacher learning about and through planning, and gradually releasing to independent planning.

While gradually releasing co-planning responsibility (Pylman, 2016; Tharp & Gallimore, 1988), I found mentors often shifted their role from leading the co-planning sessions, to taking a step back and questioning student teachers as the student teachers led the co-planning sessions, explaining their plans. The mentors asked many questions during these co-planning sessions, and I began to wonder what kinds of questions the mentors should be asking during the co-planning sessions. Do all questions help the student teachers become better planners? Do all questions lead student teachers to think like more experienced teachers?

In the second manuscript (Chapter 4) I zoom in on one mentoring practice, questioning, and I analyze the questions six mentors ask during twenty-one co-planning sessions and work to understand what types of questions led the student teachers to become more thoughtful practitioners (Darling-Hammond et al., 2005; Hammerness et al., 2005; Hammerness, Darling-Hammond, & Shulman 2002). After leveling the questions mentors asked and classifying student teacher responses according to Bloom's (1956) taxonomy, insights into what mentors were asking and how often, and how student teachers were responding to various mentor questions began to surface.

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CHAPTER FOUR – LEVELS OF MENTOR QUESTIONING IN ASSISTED PERFORMANCE: WHAT SHOULD MENTORS ASK STUDENT TEACHERS WHILE CO-PLANNING?

Introduction

Mentor teachers open up their classrooms for student teachers (STs) to come in and learn about the profession of teaching; however, STs do not learn through observation alone. Mentor-ST conversations about teaching are important to the development of the ST's professional knowledge (Wang & Odell, 2002). Planning is a common and essential part of teaching (Ornstein, 1997; Shavelson, 1976; 1983). Richard Shavelson (1976) expressed the importance of planning, for "any teaching act is the result of a decision, whether conscious or unconscious, that the teacher makes after the complex cognitive processing of available information" (p.18). STs need opportunities to engage in planning, teaching, and reflecting as they develop into thoughtful decision-making practitioners (Grossman, Hammerness, McDonald, 2009).

Co-planning is a commonly used mentoring practice where mentors work alongside the STs, planning together, as STs learn to plan (Feiman-Nemser, 1998; Feiman-Nemser & Beasley, 1997; Schwille, 2008). In co-planning sessions, mentors have the opportunity to scaffold ST learning and prepare them for independent decisionmaking (Pylman, 2018; Stanulis et al., 2018). One way mentors scaffold learning is through questioning (Pylman, 2018). Yet, not all co-planning sessions and not all mentor questions prepare STs as thoughtful practitioners. After listening to mentor and ST coplanning sessions, I analyzed the types of questions mentors asked and the types of ST responses given. This analysis provided me a with a glimpse of what STs were gaining

from the interactions. I wondered: In what ways do the types of questions mentors ask STs during co-planning sessions influence ST growth as thoughtful practitioners?

The Thoughtful Practitioner

Research suggests experienced *thoughtful practitioners* have gained a certain teaching expertise (Berliner 1986, 1991; Carter, Cushing, Saber, Stein & Berliner, 1988; Hammerness, Darling-Hammond, & Shulman, 2002). Darling-Hammond and others (2005) and Hammerness and others (2005) refer to this expertise as "adaptive expertise" or "thinking like a teacher." Their descriptions of teacher expertise center around the teachers' ability to make informed instructional decisions based on reflection in practice and reflection on practice (Schön, 1983), meaning the thoughtful practitioner reflects on student response to instruction and changes methods of instruction accordingly for continual improvement. Thoughtful practitioners are metacognitive and think about how their teaching influences student learning (Hammerness, et. al, 2005).

As teachers plan, they reflect on practice (what has happened, how students have responded, what students have or have not learned), and also reflect in practice while envisioning how the lesson might unfold. While planning, thoughtful practitioners (a) consider student learning goals, (b) consider effective instructional strategies that can help students reach those goals, (c) consider students' backgrounds, experiences, and interests (d) evaluate curriculum to see if it could help reach those goals, (e) reflect on their teaching practices in relation to student learning, and (f) reflect on assessment information to inform future instruction (Darling-Hammond et. al, 2005).

Student teachers, as beginning teachers, are typically concerned about themselves and their teaching performance – their ability to control the classroom and what others think of them as teachers (Fuller 1969; Hammerness, et. al, 2005; Pitton, 2006). Teacher educators, such as mentor teachers, work to move STs away from naïve generalizations about their experience as the teacher performing toward more sophisticated understandings of the connections between what they chose to teach, how they teach the material, and what their students learned (Fuller 1969; Hammerness, et. al, 2005). Mentors who assist performance can help STs grow as thoughtful practitioners by not only encouraging them to report what they will teach, but also probing STs to explain when, where, how, and why they are using particular instructional approaches (Feiman-Nemser, 2001). All the considerations that go into planning instruction make teaching complex. Helping STs "learn to think systematically about this complexity is important. They need to develop metacognitive habits of mind that can guide decisions and reflection on practice in support of continual improvement" (Hammerness et. al, 2005, p. 359).

Questioning to Promote Thoughtfulness

If classroom teachers emphasize critical thinking or problem solving by relying on questions to stimulate the lesson (Ornstein, 1997), mentor teachers should also use questioning to stimulate critical thinking and problem-solving from their learners. Neenan (2009) found that coaches using Socratic questioning for guided discovery helped the learner develop more helpful perspectives and actions for problem-solving. Mentors can use questioning during co-planning sessions to support and probe the ST who is learning to make informed decisions (Pylman, 2018; Pylman, 2016). But what

kinds of questions should the mentors be asking during the co-planning sessions? Are all questions equally valuable and lead to high-order thinking by the ST? Although researchers (Clutterbuck, 2005; Costa, 1985; Lee and Barnett, 1994) have tried to give classify types of teacher or mentor questions, they did not address which type of mentor questions influenced higher-level thinking or thoughtfulness from the learner.

Good questioning leads the student to higher modes of learning (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Bruner, 1968; Costa, 1985; Ornstein, 1997). Arthur Costa's (1985) research on developing minds concluded that different types of questions result in different levels of thinking from the respondent. He found that there were three types of questioning that lead to three responses or cognitive behaviors from the learner. The first type of questions cause students to *input* data, encouraging them to name, describe, or recall data. The second type of questions teachers ask are to encourage students to *process* the data they have acquired. They are asked to make senses or meaning out of the data by explaining, organizing, comparing, or sequencing. Lastly, the third type of questions teachers ask require students to go beyond the concepts and principals they have developed and use their knowledge in new or hypothetical situations. In this manner, they are asking students to develop *output* as they are applying, hypothesizing, evaluating, designing, or defending.

Costa (1985) asserted, "Teachers have awesome power. Through careful and selective use of questions... they can elicit, invite, and cause students to perform these cognitive behaviors" (p. 128). Like Bloom et al. (1956), Costa (1985) saw the value in all levels of questioning, but there is a direct relationship between the verbal level of teachers' questions and the level of pupil thinking (Measel & Mood, 1972). If teachers

want divergent thinking from their students, they need to ask questions that ask for divergent thinking, not only cognitive memory questions (Costa, 1985).

Recent research suggests beginning teachers can demonstrate more expertise or accomplished practice when they are provided particular kinds of learning experiences (Darling-Hammond, 2000; Hammerness et. al, 2002; Hammerness et al., 2005). In this study I investigate whether the questioning support mentors give is an example of the type of learning experience that can develop STs as thoughtful practitioners.

Theoretical Framework

In their assisted performance theory, Tharp and Gallimore (1988) labeled six means of assistance to facilitate student understanding including: Modeling, contingency management, feeding-back, questioning, and cognitive structuring. Assisting performance of a ST toward a thoughtful practitioner using questions could include mentors modeling the kinds of questions a thoughtful practitioner would ask, providing feedback by using questions (i.e. "What do you think went well?), and asking the ST questions to guide their reflection on practice (Schön, 1983). Of particular interest to this study is the way mentors used questioning during co-planning sessions as assisted performance.

The last tenet and end-goal of assisted performance theory (Tharp & Gallimore, 1988) is for the learner, or ST, to gradually become independent and capable of the practices of teaching without assistance. The goals for the ST are to think as a teacher, to consider matters as a teacher does, to take part in the process of knowledge getting and decision-making (Bruner, 1968; Shavelson, 1976). ST performance once assisted by the mentor becomes assisted, guided, and directed by the learner herself. However, this does

not mean the performance is expert, and further reflection, analysis, learning, and at times external assistance may be needed (Tharp & Gallimore, 1988).

Teaching is a complex activity in which a teacher can grow steadily more proficient over the years by means of assisted performance, internalization, and selfassistance in life-long learning. Each means of assistance from a mentor has its place for advancing learners. Mentors providing assisted performance often alternate, combine, intertwine, or simultaneously use means of assistance as part of the activity of teaching and mentoring (Tharp & Gallimore, 1988).

Co-Planning as Assisted Performance

Mentors who assist ST performance and learning through educative co-planning get to know the ST as a learner and mentor responsively, scaffold ST learning about and through planning, and gradually release STs to independent planning (Pylman, 2018). The co-planning sessions become a fertile setting to not only plan great lessons, but to purposefully teach the ST about planning and teaching as a thoughtful practitioner.

Learning to plan effectively involves assistance and practice (Feiman-Nemser & Beasley, 1997). Co-planning invites STs to collaborate with mentors on authentic teaching tasks – planning instruction around central goals and concepts of effective teaching (Feiman-Nemser, 1998). Because co-planning is an authentic joint activity in which scaffolded support (Vygotsky, 1978) could occur, it is a place where assisted performance described by Tharp and Gallimore (1988) can flourish.

Often mentors say one way they know their STs have "got it" is when, while planning, the STs envision aloud what they think might happen, how students might respond, what issues might arise, and how they will adjust the plans to address them

(Pylman, 2018; Costa & Garmston, 1994; Kennedy, 2006). In order for STs to reach independence in planning and decision-making, mentors needed to use mentoring moves, such as questioning, to assist their performance while co-planning before gradually releasing to full responsibility as a thoughtful practitioner (Bruner, 1968; Pylman 2016; Stanulis et. al, 2018).

Methodology

Through this study, I sought to answer the question: In what ways do the types of questions mentors ask STs during co-planning sessions influence ST growth as thoughtful practitioners? To investigate this research question, I studied six mentor and ST dyads engaged in multiple co-planning sessions.

Context

The context and data collection for the project have been described elsewhere (Pylman, 2018). In this section, I briefly review the data sources and describe the analysis procedures specific to this study.

Internship. The internship is a component of this mid-western university teacher preparation program. It is a year-long field experience where the STs are placed in a classroom with a mentor teacher in their fifth year in the program. The STs previously graduated with a bachelor's degree in education and need to successfully complete the internship in order to receive a teaching certificate from the university. The STs increase their participation and responsibilities in the classroom as the year progresses, and they are supervised by university faculty.

Participants. This study included six mentor and ST dyads (Table 2.1) who were part of a mentor development project in which I was a researcher and facilitator (Stanulis

et al., 2018). All the mentors were experienced mentors who had mentored STs from other colleges/universities and/or had mentored for the current mid-western university previously. The mentors were selected because of their participation in mentor study groups (described below) where they worked on developing their expertise as educative mentors (Stanulis et al., 2018). All the mentors were from the same school district, in which 71% of students received free or reduced lunch; and student race ethnicity was 26% White, 39% African American, 19% Hispanic, 6% Asian, 10% Other (State Data, 2015). None of the mentors had planning time during the school day as was mandated by the district. The schools Todd, Ruth, and Judy taught in were STEM magnet schools.

Table 2.1Participants and the Study Group Sessions They Attended

Mentor	Student Teacher	School	Study Group
Todd	Molly	Myrtle Elementary (5th grade)	Myrtle
Ruth	Christy	Magnolia Elementary (4 th grade)	Redbud-Magnolia
Judy	Michelle	Magnolia Elementary (4 th grade)	Redbud-Magnolia
Brian	Angie	Redbud Elementary (5th grade)	Redbud-Magnolia
Darcy	Katie	Redbud Elementary (5 th grade)	Redbud-Magnolia
Liz	Sophia	Redbud Elementary (6 th grade)	Redbud-Magnolia

Mentor study groups. The mentors in this study were part of a university pilot program designed and facilitated by a university professor and two graduate students (including author). The purpose of this program was to support university field instructors and mentor teachers in learning about three educative mentoring practices (coplanning, observing and debriefing, and analyzing student work), to analyze mentoring practice, and to work together in a community to embrace an inquiry stance in learning to
teach (Stanulis et. al, 2018). Specific to co-planning, mentors were challenged in development sessions to verbalize what good planning entailed, what they needed to think about when planning, and ways they could teach effective planning to a learner. The six mentors in my study were also part of a larger research project investigating how twenty-three mentor teachers engaged in educative mentoring (Stanulis et al, 2018). Mentors attended six school-group sessions led by me as their facilitator, and two whole group sessions facilitated by our mentor leadership group. Between the school-group sessions the mentors tried out and audio-recorded educative mentoring practices and wrote reflections on their mentoring practice based on question prompts written by university facilitators.

My role as the study group facilitator for these particular teachers allowed me to be a participant observer (DeWalt, DeWalt, & Wayland, 1998) with insider access and knowledge to the mentor teachers' experience. As the facilitator, I led the mentor study group sessions according to an agenda co-created by a university professor, another graduate student facilitator, and myself. Sessions also included time for mentors to problem-solve with each other. My role as facilitator had the potential to increase my subjectivity in this study. Working to remain as objective as possible, I used multiple data sources to triangulate my findings. I also consulted a team of advising researchers to check my questions, methods, and data analysis for validity. This study was not intended to be an evaluation of the professional development or my ability to facilitate study groups, which would increase my stake in the outcomes. Rather, it was an investigation into how mentors question during co-planning sessions, which shifted the focus of the study away from my role as facilitator.

Data Collection

Data collection for this study included recorded mentoring practice sessions, mentor written reflections, and interviews. Collecting multiple data sources helped me triangulate my findings and strengthen the construct validity of the study (Yin, 2014).

Mentoring practice. I collected audio recordings of three to four co-planning session conversations from each mentor and ST dyad, for a total of 21 co-planning sessions across subject areas. I also collected mentor teacher reflections written after their co-planning sessions, responding to question prompts written by university program facilitators.

Semi-structured interviews. Toward the end of April, after the university pilot program was completed, I interviewed each mentor participant individually for 30-45 minutes, asking questions from the larger research project interview protocol (Stanulis et al., 2018). I also asked questions about the mentors' experiences co-planning, such as what they thought the STs learned from the co-planning sessions and their evidence to support their claims; how they prepared for co-planning sessions; and the specific ST learning goals they worked on in co-planning sessions (Appendix).

Data Analysis

In the first phase of analysis, I coded interviews and mentor written reflections where mentors were talking about questions they asked during co-planning sessions, and I coded the questions mentors were asking their STs. I then engaged in a second phase of analysis and provisional coding (Saldana, 2016) where I analyzed the questions asked during co-planning sessions according to Costa's levels of questioning (Costa, 1985; Costa & Garmston, 1994), Bloom's taxonomy (Bloom et al., 1956), Lee and Barnett's

(1994) types of reflective questioning, and Clutterbuck's (2005) types of questions used in mentoring (p. 158). For example, the question asked, "What do you find works, doesn't work - is there anything you would like to change?" was given Costa's level *3*, Bloom's taxonomy label *synthesis*, Lee and Barnett's label *purpose and consequence*, and Clutterbuck's label *reflective*.

Classifying questions and learner responses. Benjamin Bloom's (1956) taxonomy classifies cognitive tasks from low level knowledge, comprehension, and application goals to high level analysis, synthesis, and evaluation educational objectives. Bloom et al. used this classification system to illustrate the lack of high-level questioning in classrooms, and the same classification system was used in this study to analyze mentor questioning during co-planning sessions. Were mentors asking high-level questions or asking a majority low-level questions? Bloom's taxonomy levels were useful in analyzing both the mentor questions and ST responses. First, I used both Bloom's (1956) taxonomy and Costa's (1985) levels of questioning to create a hybrid that revealed four levels of mentor questioning (Table 2.2). Secondly, I used Bloom's taxonomy to classify the levels of ST responses to mentor questions. In this way, I could see if the type of mentor question influenced the ST response at a cognitive level. I speculated that if STs were asked high level questions, they would gain more expertise and express this new knowledge in high level responses.

In the third phase of analysis, with insight from Costa's levels of questioning and Bloom's taxonomy, I created a mentor question level system based on what mentors were asking or how they were asking questions in the data set (Table 2.2).

Questioning	Bloom/Costa	Aim of question	Examples of Mentor
Level	Verbs	(description)	Questions
Checking- in (1)	Knowing, Recalling	Does ST know her stuff? Mentor seeks to find out the ST's knowledge of content, students	What is the difference between mass and weight? What did you teach
		pedagogy, or what happened earlier	yesterday? How did the students respond? Do you understand?
Consulting (2)	Application, Comparing, Sequencing	Is ST able to apply knowledge to make plans? Mentor seeks to find out if the STs know what they are teaching, how, and when. Mentor makes suggestions and asks for a response from the ST.	What are you going to do with this group? How are you going to assess? How are you going to teach this differently to? When are you going to teach this? I thought we could what do you think?
Releasing (3)	Analyzing, Synthesizing, Hypothesizing	Is ST able to make decisions on her own and envision possibilities? Mentor asks STs to come up with ideas, create new plans by synthesizing what they know, make decisions, and envision what might happen or how students might respond.	What do you think we should do? What would you do differently? Have you thought about what would happen if? What will you do if students aren't understanding?
Probing (4)	Justifying	Does she know why she is making these decisions? Mentor asks STs to justify their decisions and reasoning by explaining <i>why</i> certain decisions were/are made.	Why did you choose to? Why will you have them write? Why didn't you want to?

Table 2.2Levels of Mentor Questioning

Each mentor question was labeled with a questioning level of 1 *checking-in*, 2

consulting, 3 releasing, or 4 probing. 56 mentor questions were labeled N/A and

disregarded because they were either off-topic, rhetorical, or were questions mentors were asking in order to clarify something for themselves. The purpose of this study was to find out if the type of mentor questions influenced ST thinking, so questions asked to influence mentor thinking were disregarded at this time.

To investigate how the mentor questions influenced the thinking level of the ST, in the last phase of analysis I labeled the ST responses to all the mentor questions according to Bloom's taxonomy (1956). I then cross-analyzed the level of mentor question (1-4) with the Bloom's taxonomy level of thinking for the ST responses (Evaluation, Synthesis & Evaluation, Synthesis, Analysis, Application, Comprehension, or Knowledge), Yes/No answer, I don't know (IDK), or the ST responded with a question. The frequency of these types of responses based on the level of the question is illustrated in Figure 2.1.



Figure 2.1 Comparing the Frequency of ST Responses by Question Type

Findings

It is not surprising that how a ST responds to a mentor's question is directly related to what the mentor asks; however, there is more to the story. After leveling the questions mentors asked and classifying ST responses according to Bloom's taxonomy, insights into what mentors were asking and how often, and how STs were responding to various mentor questions began to surface.

Mentor Question Levels Influence Student Teacher Response Levels

The aim and level of the mentor's question influenced the type of responses and thinking level of the STs. Level 1 checking-in questions, which asked STs to share knowledge and recall earlier activities or lessons, resulted in high instances of yes/no answers without elaboration. STs also answered these questions with responses in the lower levels of Bloom's Taxonomy such as knowledge and comprehension (Bloom et al., 1956). For example, in the following segment Judy, the mentor, asked Michelle a question to check on her science knowledge.

Judy: How is that water in gas form?

Michelle: Like evaporate, evaporation because there is water in the air. Mentors were checking in to see if the STs knew their stuff, and STs answered by showing they knew and could recall. There were only a few instances where STs expanded their responses and thinking by beginning to analyze the data they were recalling from a previous lesson or analyzing the curriculum.

Level 2 consulting questions, which asked STs to explain what they were teaching, how, and when, resulted in high frequencies of lower level responses such as knowledge, comprehension, and application (Bloom et al., 1956). For example, in the

following segment Ruth, the mentor, asked Christy to explain her social studies unit plans.

Ruth: We're talking about the Southeast region, and at this point, you've done the six different attributes that we've talked about, and then what's going to happen in your last five lessons?

Christy: It's actually the last four. They're going to do their newscast. They're going to have a certain aspect that they've focused on with the group, and then they have to write a script explaining what we've learned about.

Christy's response was simply telling what the students were going to do without explaining why or elaborating on her decision-making.

Sometimes when asking consulting questions, mentors made suggestions and asked for responses from the STs, which often resulted in high instances of yes/no answers without elaboration. For example, in the following segment, the mentor Darcy used a question to make a suggestion and Katie was left to either agree or disagree.

Darcy: What if they read in partners?

Katie: Yeah, that would be good.

There were a few instances of analysis, synthesis, and evaluation responses from the STs, but most often the responses remained in the application level of thinking. This finding makes sense, since consulting questions ask STs to explain what they are teaching, where, and when, and that is asking STs to *apply* their knowledge to plans.

Level 3 releasing questions, where the mentors asked questions in a way that released the decision-making to over to the STs and asked them to hypothesize or envision possibilities, showed a large increase in responses where STs were analyzing

and synthesizing - both high levels of thinking (Bloom et al., 1956). For example, in the following segment Liz, the mentor, asked Sophia how she thought students would respond to a colonial tax activity with M & Ms.

Liz: You haven't seen this done before, so what do you think their reaction is going to be?

Sophia: I definitely think that, depending on who our colonists are, some of the kids are going to be very stubborn about it and maybe refuse to give them up, which I think that they, at the end, will bring up some good discussion points because they're not afraid to speak their mind... They'll definitely have a lot of different ideas about why they were mad, how the colonists felt, and how the king probably felt...

Here, Liz knew how the students would likely respond as an experienced teacher who taught the lesson before, but she still took the time to ask Sophia to envision what might happen. Later, Liz built on this question when she asked Sophia how they might respond to student behaviors.

Level 4 probing questions, where the mentor asks the ST to explain *why* certain decisions were made, resulted in analysis, synthesis, and evaluation responses. These types of responses were high level thinking activities according to Bloom's taxonomy (Bloom et al., 1956). The distinct difference between these questions and the other three levels is that when STs were asked level 4 questions, they were unable to respond with simple yes/no answers, knowledge comprehension, or application responses (Figure 2.1). The level 4 questions appeared to push the STs to higher level, deeper thinking when answering. For example, in the following co-planning conversation, Liz asks Sophia to

consider why they are going to present this social studies lesson on unfair taxation during colonial times using a simulation instead of simply a discussion.

Liz: What do you think the objective is for the kids? Why are we doing this as opposed to just having a discussion like we did today? What do you think? Sophia: So that they can understand the repercussions of not paying their taxes. It kind of just put them in their shoes to see what the colonists felt like at that time, and maybe why the king had to do what he had to do, and what happened if you didn't do it, and kind of how it all played out. Who got more of the money back then? How it hurt the colonists that they didn't get as much as ... So, just kind of to understand why Americans were so upset at that time over what was going on.

In this segment, Liz asked Sophia to think about the reasons behind making an instructional decision to do a simulation activity. Sophia was able to defend the benefits of doing a simulation as compared to a discussion. Her reasoning and justification involved the highest levels of thinking on Bloom's taxonomy of cognitive activities. Nevertheless, level 4 probing questions were asked by the mentors least often, at only 3% (Figure 2.2).

What Levels of Questions Did Mentors Ask?

Twenty-one mentor and ST co-planning sessions were recorded for this study. During those sessions, the mentors asked 309 questions. Mentors spent a large majority (66%) of their questioning during co-planning sessions asking level 1 and 2 questions (Figure 2.2) and getting lower level thinking responses from the STs (Bloom et al., 1956).



Figure 2.2 Mentor Question Level Frequency. *18% of mentor questions during coplanning sessions were N/A, 16% were Level 1 (Checking in), 50% were Level 2 (Consulting), 13% were Level 3 (Releasing), and 3% were Level 4 (Probing).*

By contrast, only 13% of questions asked were level 3 releasing questions, and only 3% of questions asked were level 4 probing questions; where the mentor allows the ST to take on more responsibility for deciding, predicting, and justifying decisions which resulted in higher levels of ST thinking (Bloom et al., 1956). The data illustrates that mentors rarely get to the point of asking the ST to explain why, to justify their decisionmaking, which is an important skill for a thoughtful practitioner (Costa & Garmston, 1994; Hammerness, et. al, 2005; Shavelson, 1976; 1983).

Variance in Questioning Across Mentors

Mentors differed in how many questions they asked during co-planning sessions and in the diversity of question levels they asked (Figure 2.3).



Figure 2.3 Number of Mentor Questions by Level

Ruth, Darcy, and Brian asked a lot more questions during co-planning sessions overall, but they were dominated by level 2 consulting questions. Judy, Todd, and Liz asked less questions, but were more evenly diverse in the levels of questions they asked. Judy, Ruth, Brian, and Liz asked more level 3 and 4 questions than Todd and Darcy. Darcy's heavy use of level 2 questions, lack of level 4 questions, and minimal level 3 questions were indicative of how she used co-planning sessions – as a time to check Katie's plans and make sure she was prepared. Even though they asked a lot of level 2 questions, Ruth and Brian released decision-making to their student teachers often and asked more level 3 and 4 questions than Darcy. Their high volume of level 2 questions was a result of giving suggestions to the student teachers often and asking their opinions. This data illustrates that although all mentors asked questions during co-planning sessions, they varied in how often they asked guestions and the kinds of questions they asked.

Student Teachers Growing as Thoughtful Practitioners

Although mentors rarely asked level 4 probing questions, when they did ask those types of questions the STs were responding as thoughtful practitioners. For example, in her second recorded co-planning session when Judy asked Michelle, "Why did you decide to start with the marbles in the petri dish and then go to [students] actually acting like the molecules?" Michelle responded,

I think because we [me and the other ST in 4th grade] wanted [the students] to be able to see it first before they do it. Because I think it will be easier for them to act like the marbles, rather than to draw what the marbles would be like... So, we thought it was like, "Ok think about when we had a solid. We had ten marbles in there. Was there any extra space for more marbles? For another particle? Nope, we couldn't fit another particle so you can't put in another person." [Then] "Ok what did they do? Did they move? Did they move places? No. They stayed in one place, each particle, and they just vibrated. So how would you show that with your bodies?"

By probing Michelle to explain her decision, Judy was able to hear Michelle defend her decision and think aloud about what might be difficult for students and what they would need. Michelle was able to envision and rehearse how she would use the marble experience as an anchor she would point back to while engaging students in the 'acting as molecules' activity. Michelle was given an opportunity to engage as a thoughtful practitioner as she imagined how her teaching decisions would influence student learning.

Liz also asked Sophia a probing question in her second recorded co-planning session when she asked, "Why did you want to try book clubs?" Sophia responded with,

I like doing the novel studies for literacy, but I felt like after *Frindle* and after *Number the Stars* it was getting kind of repetitive with a lot of things they were doing. So, I wanted to give them a change of pace and let them be in charge of the activity this time instead of me telling them, 'This is what we're doing this day.' I thought they are the ones that get to have the discussion with each other instead of scripting it out for them like, 'Tell me this. Tell me that.' They get to come up with their own questions now and talk about it with the people in their groups, instead of a whole class discussion, because I feel like some kids don't like to share with the entire class. But when they're in a smaller group or they're reading a book that they actually really picked out, have interest in, they'll be able to share more ideas with each other.

Sophia's response illuminated for Liz that Sophia was thinking about benefits of an instructional change for the students. Sophia was able to reflect on past instruction and explain how this decision would lead to better student-led discussions. She envisioned how certain students might participate more when they are interested. Sophia was envisioning, defending, and talking like a thoughtful practitioner.

Todd also probed Molly about her decision to do book clubs with a variety of novels instead of the whole class reading one book. In the third recorded co-planning session Todd asked, "You said you definitely see the benefits of doing it this way, as do I. Can you think of any downfalls or negatives to it...? I was just wondering if you've had any thought of...?' Todd doesn't come right out and ask, "Why did you choose to do this?" but he was probing Molly to explain her decision by weighing the pros and cons. Molly responded,

I think that sometimes I really don't want to just sit there and call them and have them raise their hand. Like they need to just be able to talk freely. But there are a few who don't mind just sitting back and listening. And I don't want to put them on the spot, but I also want them to have a voice and to assess their comprehension...

Molly's response showed that she had a certain vision for how a discussion should go, and that she wanted students in her class to have equitable opportunity for voice. She also voiced her need to be able to assess student comprehension. She was simultaneously thinking about student responses and needs, as well as how she would know if they were learning. Molly was planning as a thoughtful practitioner.

Discussion

Mentors ask questions during co-planning sessions to (a) check-in to see if STs know what they need to know, (b) see if they are able to apply that knowledge to make good plans and consult appropriately, (c) release or allow STs to make decisions and encourage them to envision possibilities, and (d) probe to see if they know *why* they are making these decisions. However, mentors do not always ask the types of questions needed to achieve *all* these goals, and they ask certain types of questions more often than others. Although it is important for mentors to ask questions from all levels as it pertains to the ST's needs (i.e. if the ST doesn't understand the science content, the mentor should ask level 1 questions to check), mentors should not stay at level 1 or 2 questioning but should ask questions from higher levels. Bloom et al. (1956) and Costa (1985) agree that higher-order questioning and thinking leads to deeper learning.

The types of questions mentors ask greatly influences the thinking required of the STs and their responses, and certain types or levels of questioning are necessary to grow STs as thoughtful practitioners. To learn how to "think like a teacher" is asking productive questions about how learning is shaped by students, context, and teaching decisions (Hammerness and others, 2002). Mentors need to guide STs to think about this complexity when planning and teach STs to ask these questions of themselves when independently planning. However, in this study I found that mentors are not asking higher-level questions very often.

Why Aren't Mentors Asking the Why Questions?

Just as teachers press their students and ask them to explain *why*, mentors need to do the same with their STs when co-planning. Teachers who articulate their instructional decision-making become more expert in knowledge, efficiency, and insight (Costa & Garmston, 1994), three areas STs need expertise. However, mentors are not asking *why* questions very frequently. One possible reason might be that mentors do not see the co-planning time as a place for the ST to think, reason, and learn at higher levels. They might see co-planning time as simply a time to check on plans and make sure STs are set and well prepared. Another reason mentors are not asking the *why* questions might be efficiency. Mentors do not have a lot of time, and the more *why* questions they ask, the longer the co-planning sessions will take. Yet, teachers know that sometimes they need to sacrifice efficiency for deeper learner understanding.

Are Mentors Guiding Student Teachers to be Thoughtful Practitioners?

Mentors ask questions to make sure ST plans are made well, but also to gain insight into the knowledge of the ST as the mentor prepares the ST for teaching

independence (Pylman, 2018). Mentors are not simply making sure the ST is ready to teach that specific lesson in their classroom that day. Mentors need to use co-planning sessions to gradually release independence to STs so they are ready to make decisions in their own classroom someday (Pylman, 2018; Tharp & Gallimore, 1988).

Level 1 checking-in and level 2 consulting questions put the mentor in a role where s/he is heavily scaffolding the learning for the ST by checking plans, providing support, and giving suggestions. These types of questions are necessary, especially at the beginning of co-planning experiences; yet, mentors need to eventually provide less scaffolding over time. Mentors like Darcy, who are asking level 2 questions heavily and not asking many level 3 or 4 questions, could be having difficulty releasing decisionmaking to the student teacher. Level 3 releasing and level 4 probing questions shift the mentor's role to releasing the decision-making but also probing STs to envision how students might respond, think about what might not go well, and give justification for their decisions. Level 3 and 4 questions move the mentor from asking, 'Can she plan?' to, 'Does she know why she is planning that?' and, 'Is she able to envision possibilities and refine plans?' (Hammerness, et. al, 2005; Simon, 1980).

When mentors ask mostly level 1 and 2 questions, STs are missing higher-level thinking and learning opportunities (Bloom et al., 1956; Costa, 1985) that will better prepare them for critical-thinking and the decision-making skills of a thoughtful practitioner (Hammerness, et. al, 2005). Specific mentor questions can spark mental rehearsal, promote metacognition, and prepare the ST not only for this lesson, but also for future lessons (Costa & Garmston, 1994). The more time STs spend metacognitively reflecting on practice, envisioning, focusing on student understanding, and defending

decision-making *during* planning, the greater possibility of STs translating that thinking to on-the-spot situations where adaptive expertise or reflection-in-action needs to be made *while* teaching (Hammerness et. al, 2005).

STs exposed to level 3 and 4 questions eventually internalize mentor questions, automatically asking themselves, "What are my objectives? What do I think will happen? How will I know students are learning?" The purpose of questioning is to get the ST to the higher levels of thinking of a thoughtful practitioner – defending decision-making – because students do not need teachers who just teach curriculum because they were told to or choose activities because they are fun. Students need thoughtful practitioners who (a) consider student learning goals, (b) consider effective instructional strategies that can help students reach those goals, (c) consider students' backgrounds, experiences, and interests, (d) can evaluate curriculum to see if it could help reach those goals, (e) can reflect their teaching practices in relation to student learning, and (f) can reflect on assessment information to inform future instruction (Darling-Hammond, et. al, 2005; Hammerness, et. al, 2005).

Lastly, mentor teachers can reflect-in-action without reflecting on their reflectionin action, making their knowing-in-practice more explicit to the ST (Schön, 1983). Said in another way, mentor teachers can probe STs by asking questions, but it is also important for mentors to reflect on and explain *why* they are asking those questions of the ST. This way the ST learns what is important to think about and why when planning.

Implications and Further Research

Questioning is an integral part of good mentoring (Feiman-Nemser, 2001). However, similar to classroom teachers, asking higher-level questions does not come

naturally to mentor teachers. Remembering to ask questions as a mentor is the first step in gradually releasing the ST to teaching independence, since it is very easy for the knowledgeable mentor to tell and suggest instead of asking STs to analyze, synthesize, decide, and justify. The levels of mentor questioning in this study have the potential to translate into practical advice for mentor teachers regarding questioning practices during co-planning sessions and other mentoring opportunities. A practical significance of the findings from this study is making explicit the ways levels of questions can be used to scaffold ST learning during co-planning sessions. The framework developed here can provide a guide for mentor teachers to increase their repertoire of questioning skills and serve as a heuristic for them to shift their questioning from remaining at low-level to including more high-level questioning.

Mentors need to develop the various levels of questioning they can use to move their STs forward as thoughtful practitioners. Mentors need time for collaborative professional development (PD) where they can learn about, practice, and reflect on questioning levels and their influence on ST learning. Teacher preparation programs are in a unique place where they have a connection to and investment in the mentors working with their STs, and could provide such PD. Because mentors are busy both teaching and mentoring, it is also important that building principals recognize the need for mentors to have release time for both co-planning and mentor PD.

A hopeful outcome from using high-level questions in co-planning sessions is that student teachers will become more thoughtful practitioners and thus better planners when released to their own classrooms. Nevertheless, longitudinal research is needed to learn whether mentor teacher questioning makes a difference in beginning teacher planning

practices after they are teaching in their own classrooms. Further studies are also needed to investigate mentor PD programs working with mentors on questioning, and the influence on mentor practice and ST learning. Planning is not static, but it involves reflection on the past and envisioning the future. This study focused on questioning during co-planning sessions, but future studies are also needed to investigate mentor questioning not only during co-planning sessions, but also during and after lessons.

Finally, this study showed that learning the details about mentor teachers' questioning practices and ST responses required hearing what STs said in relation to mentor questions, which has methodological implications for future research. It is important to examine ST responses to mentoring practices, not simply focus on what mentors are doing. This type of analysis is difficult, as one cannot strip what mentors or STs say from the context in which it happens or from how mentors and STs engage with each other in different ways. Yet this close attention to how STs respond, think, and learn in relation to what the mentor asks, can help us understand the ways in which mentors can scaffold ST understanding as they work toward planning and teaching as a thoughtful practitioner.

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CHAPTER FIVE – WRITING ABOUT MENTORS *FOR* MENTORS: EXPANDING ACCESS TO EFFECTIVE MENTORING PRACTICES

Many researchers and practitioners acknowledge there is a gap between educational research and practical application (Biesta, 2007; Broekkamp & van Hout-Wolters, 2007; Englert & Tarrant, 1993; Kennedy, 1997; McIntyre, 2005; Stevens, 2004; Vanderlinde & Braak, 2010). Innovative research remains in scientific journals instead of in the hands of the practitioners who need the information (Englert &Tarrant, 1993; Kennedy 1997). Stevens (2004) attributes the disconnect to the fact that once research authors get an article published in a prestigious academic journal, they do not take the time to relate their findings to the practitioners who need the information the most. Stevens (2004) goes on to point out that publishing in 'practitioner' journals is devalued as less scholarly, and therefore not a priority of researchers. Consequently, findings are not translated for consumption by practitioners (Stevens, 2004).

Mentor practitioners are also isolated from educational research on mentoring. Mentoring is a second job for teachers, and often takes a lesser priority than teaching students. Therefore, mentors do not often take the time to read academic research articles on effective mentoring practices. Instead, mentors rely on any development provided to them through the universities or district. Secondly, mentors are also isolated from mentor communities of practice. Mentors do not always have access or time to converse or collaborate with other mentors to learn from each other, share insights or challenges. Unlike teachers, sometimes there may be very few – or only one – mentor in a school building. This kind of isolation for mentors means they rarely have access to examples of great mentoring practices.

My work with mentors in collaborative study group communities (Pylman, 2018; Stanulis et al., 2018) has been a first attempt to break mentor isolation and give mentors access to conceptions or examples of effective mentoring practices. In addition to this work, I also want to disseminate my findings on educative co-planning to a larger group of mentors by publishing in a practitioner journal. The proceeding manuscript (Chapter 6) is a practitioner piece written about mentors for mentors as an attempt to further expand access to effective educative mentoring practices. REFERENCES

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CHAPTER SIX – SCHEDULING IS JUST THE TIP OF THE ICEBERG IN CO-PLANNING

Effective teaching involves planning, instruction, and reflection. Novice teachers (both student teachers and beginning teachers) benefit from mentoring in all three of these areas as they learn to focus their teaching on student learning goals and needs. As teachers plan, they engage in a process of envisioning how the plans might unfold (Kennedy, 2006). They imagine what they want to happen (goals, learning, content, skills); the steps they need to take to achieve that goal (instruction, activities, engagement, time management); the possibilities for what could happen (student understanding, behavior, pacing); what could go wrong (misconceptions, confusion, behavior issues, pacing or engagement issues); and often rethink steps to achieve the goal (revising plans, scaffolding more, differentiation, adjusting pacing, adding or deleting content). So much of the envisioning and thinking involved in planning is below the surface, hidden from observers like novice teachers. The process of envisioning takes time to learn and often novices need guidance in thinking through everything involved in planning before they can become independent, effective planners.

Co-planning, where the mentor and novice meet to envision and make instructional decisions together, can be a fertile site for teachable moments and novice growth (Feiman-Nemser & Beasley, 1997). However, the process and content of coplanning sessions vary – as does the opportunities for novices to participate, learn about the practice of teaching, and analyze decision-making during co-planning sessions (Feiman-Nemser & Beasley, 1997; Schwille, 2008).

Does Efficient Co-Planning Limit Novice Learning?

Brian is a fifth-grade teacher in an urban public school. He is a teacher leader in his school and enjoys mentoring both beginning teachers and student teachers. I worked with Brian across a school year to understand how he approached and enacted mentoring. Brian spoke of the value in taking the time to co-plan with novice teachers to work on their learning goals as teachers when he said, "We're not just coming up with lessons for next week, but we're also thinking of 'Hey - how are we moving *you* forward, how are we getting *you* into more of a leadership role?"

Darcy, a sixth-grade teacher in the same school, mentored a student teacher named Katie. Darcy emphasizes modeling in her mentoring: "I think I model a lot of things that [Katie] could use [in] actual lessons or [with] discipline, or ways to plan a week so that it's not the same." I worked with both Brian and Darcy as they worked to develop their mentoring practice with other mentors in a study group that met once a month during the school year (Stanulis et al., 2018). Neither teacher had planning time available during the school day and were limited to planning before and after school with their student teachers.

In my experience working with mentors in U.S. elementary schools, it is uncommon to see mentors like Brian who intentionally plan for the learning needs of novice teachers while co-planning. Darcy exemplified a more typical mentoring approach when co-planning that I see often from mentors working with student teachers. Darcy's co-planning sessions consistently took the form of scheduling. Instead of planning a unit or lesson while focusing on Katie's learning goals, Darcy used her time 'filling in the boxes' on the schedule for the week in all subject areas. Darcy talked with Katie about

what to teach and *when* without many conversations about *how* to teach and *why*. Her time planning was efficient and a whole week was sketched out by the end of the session, but Katie's learning was limited. In Darcy's words, "I didn't do a very good job of zeroing in on one lesson and just making that the conversation... But, we'd usually kind of look through the week, pick some specific lessons, and work on what to anticipate, what things to change, what [materials] to prepare." The key question is - In which coplanning approach would the novices grow and learn most as a teacher?

The purposes for planning can include planning an event, a weekly or daily schedule, mapping a year, units, lessons, workshop time, or small group instruction. For each purpose of planning, the teacher engages in thought that considers a multitude of concerns specific to that purpose (Kennedy, 2006). However, in Figure 3.1, notice that scheduling is just the tip of the iceberg when providing opportunities for a novice teacher to learn. The more focused the planning session on a single unit or lesson, the more concepts mentors will be able to teach and discuss with the novice. Thus, novices will have more opportunities to learn about all that goes into planning.



Figure 3.1 Variations in Co-Planning and Opportunities for Novice Learning

Recognizing mentor teachers can grow beyond traditional mentoring relationships that focus on emotional support and survival (Bradbury, 2010), Sharon Feiman-Nemser (1998) coined the term "educative mentoring" which prioritizes reflection and continued novice growth through their work with experienced veteran teachers. An educative mentor (a) attends to novice concerns and questions while staying focused on helping the novice work on pre-determined long-term novice teacher development goals, (b) creates intentional growth-producing experiences, (c) fosters a disposition of sustained inquiry into teaching practice and student learning, and (d) cultivates skills and "habits of mind" of an effective teacher (Dewey, 1971; Feiman-Nemser, 1998). For example, instead of providing copies of lesson plans and telling the novice what she usually does, an educative mentor thinks aloud about standards, curriculum, and uses knowledge of students to co-plan with the novice teacher - all while considering the learning goals of the novice teacher.

Following traditional mentoring as support, traditional co-planning sessions often involve spending time talking through the weekly or daily schedule or critiquing the novice teacher's independently-created plans while assuming the novice will learn to plan through independent practice and feedback (Schwille, 2008). Limiting co-planning sessions to the traditional type of co-planning is problematic because the novice is not simply learning what to do for that particular block of time but learning how to plan for any classroom by making informed instructional decisions using knowledge about students.

If the goal of mentoring is to help novice teachers grow into independent decision-makers who simultaneously consider student learning needs and envision possible scenarios during a lesson, then the traditional co-planning model of scheduling is limited. Traditional planning or "scheduling" is based on an assumption that novice teachers need only learn how to follow curricular pacing guides, teach what is in the book, and try to 'fit it all in' in the time they have. Scheduling limits the opportunities for novice teacher decision-making based on student learning needs that is vital to quality teaching, and leaves the novice learning just the tip of the iceberg in planning. There is so much more to the 'co-planning iceberg' beneath the surface that needs to be explored!

Mentors like Brian start from a very different perspective on planning than mentors like Darcy. Brian believes the goal of planning is to figure out how to plan lessons and units by (a) knowing what the students need to learn, (b) considering the specific needs of students based on prior assessment, (c) deciding the best ways to engage

and challenge students to meet learning goals (d) and envisioning how students might respond. Although co-planning either lessons or units can be used to teach the intern many of the same important aspects of planning and decision-making, it should be noted planning a lesson allows more time for in depth conversation about *why* since not as much content needs to be planned in a single planning session. However, just because a mentor co-plans a lesson or unit instead of scheduling, does not mean the planning is automatically educative. Mentors need to intentionally prepare how they will engage novice teachers in co-planning sessions.

How Can Mentors be Educative in the Limited Time They Have?

"I'd listen to some of the probing questions other people were asking and I was like 'I don't think I did that very well at all'..., but I think I would have done a better job if I had written it down. And I should have probably had at least three questions I would ask her." – Darcy (interview)

If you consider that mentors have limited time and that not all co-planning sessions are educative, the time spent co-planning needs to be as efficient as possible without hindering the novice's learning. One way to make the most of co-planning time together is for mentors to prepare for co-planning sessions ahead of time. Mentors need to know going in what they are going to teach the intern in the co-planning session and why. The elements of educative co-planning described in the acronym ICEBERG (Table 3.1) can be used by mentors to plan beforehand what they will discuss during educative co-planning sessions and guide mentors to go deeper below the surface to explore more concepts and decisions with the novice while planning.

Table 3.1Mentors Can Use ICEBERG to Prepare For and Guide Educative Co-Planning Sessions

I	Intentional
C	Clarify content
E	Explain 'why'
B	Break for questions
E	Envision aloud
\mathbb{R}	Return to the
	objective
G	Gradually release
	decisions

Intentional

An educative mentor considers ahead of time the novice's professional learning goals and laces those goals into the co-planning sessions. For example, when reflecting on one of his co-planning sessions with Angie, Brian said,

When we got down to looking at the planning... my main focus was to help [Angie] to think about differentiation as well as continuing to engage the students in higher order thinking skills... I was challenging [Angie] to really dig into the content and help to understand the importance of differentiation.

Brian used a co-planning session around a single lesson in a science unit on ecosystems to not only plan for the lesson, but also teach Angie about differentiation and higherorder thinking.

Clarify Content

Often novice teachers struggle with concepts and content they are new to teaching. Educative mentors spend time explaining content and clarifying misconceptions novices may have in co-planning sessions. Additionally, mentors can also use coplanning time to talk about misconceptions students may have with content, an important part of the envisioning process of planning.

The following excerpt is a session where Brian and his student teacher, Angie, were co-planning a culminating lesson on ecosystems.

Brian: Do we want them to use the definitions for predator/prey, all those things you had in there?

Angie: Like the tertiary consumer?... That would be hard if you get way far into it.

Brian: Yeah, but at least some producers that are in that area.

Angie: Yeah, I think they should –

Brian: In the food web, they're all consumers except for the base level.

Angie: I think it might be interesting to sort out who is only a prey, who is a

predator and prey, and who is only a predator - classify those.

Brian made sure to clarify the concept of the food web with his student teacher,

specifically that all except the base level of the web were consumers, while

simultaneously envisioning that students might be confused on how to label predator and prey.
Explain the 'Why'

Depending on who is leading the co-planning session and who is doing the teaching, the novice or mentor should explain aloud why she is making certain instructional decisions about what or how to teach (Pylman, 2016). In the following example, Brain is co-planning a vocabulary lesson with Angie and trying to figure out how to help kids understand the activity.

Maybe we can even model that or... like if we see kids talking about it, maybe we could say, "Hey, would you mind writing that down and then doing it in front of the class so they can see you talking about it?" Because I think that they like to perform in that regard. If we can get them to be the ones that - "You can totally teach everybody this because that was so awesome what you did there," and really build them up. Then give them that power to be in front of the kids, maybe they'll pay a little more attention when kids are up there instead of us.

Brian is not only brainstorming ideas for how to better teach the vocabulary activity, but he is explaining *why* he thinks it would be a good idea for students to model for each other.

Break for Questions

If the mentor is leading the co-planning session and going to teach the lesson, the novice should stop the mentor and ask questions that prompt the mentor to explain why. For example, *Why do you do it that way? Why do you use that book to teach...?* If the novice teacher is leading the co-planning session and teaching the lesson, then the mentor should be asking probing questions to encourage the novice to explain why she is making certain decisions (*Why do you want the students to write three paragraphs?* Brian: *What*

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are the comprehension skills that we're working with here?), to envision what might happen (Brian: What are some possible problems that you could see with that?), and think through organizational or management concerns (How are you going to group the students? When and where will they turn in their work? Brian: If you are going to grade it, how are you going to grade it? Just by effort? By a rubric?)

Envision Aloud

A staple of teacher planning is envisioning what might happen in a lesson and how students might respond. An educative mentor works to voice the envisioning process aloud. For example, Brian envisions aloud with Angie, "Some of the kids... they finish superfast because they get it and they know what they're doing. Maybe at those points, we can just start saying, 'Why don't you make a T-chart and put synonyms on one side and antonyms on the other?'" If the novice is leading the co-planning session and plans to teach, the mentor encourages the novice to envision aloud. For example, Angie envisions a problem students might have, "I feel like if we tell them the whole project, I can imagine a few of them right now already freaking out. So maybe just give them the next step as they're ready."

Return to the Objective

Planning backward - or thinking about the end goals (or objectives) the students will need to meet at the start of the planning process - is a common planning strategy for effective teaching (Wiggins & McTighe, 2001). In educative co-planning sessions mentors or novices backward plan by stating the objective(s) of the lesson – *what do we want students to know and/or be able to do at the end of this lesson/unit?* Additionally, the mentor and novice keep returning to those objectives when making decisions about

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activities and assessments. *Does this align with (or measure) what we want students to know and be able to do?* For example, when co-planning the culminating activity on ecosystems, Brian points back to the objectives, *"Then, we're looking to see that they understand the purpose of food webs, or food chains, or the passing of energy from living organisms within an ecosystem. The important information that we would need to have in there is..."*

Gradually Release Decision-Making

There comes a time in most mentoring relationships where the novice teacher needs to take on more responsibility and become independent. The mentor needs to prepare the novice for independence by gradually releasing responsibility to the novice while planning. During this time, instead of telling the novice what to do, the mentor may let go of the control and simply make suggestions while letting the novice choose – sharing the decision-making. Some mentors describe it as "letting the intern experiment" in their classrooms. For example, in a mentor study group session Brian said it was important to ask novice teachers "what do you think, or what might you try, or how might you start? And just kind of give them that opportunity to take a risk." When co-planning, both Brian and Darcy often deferred to their student teachers to make decisions (Brian: *I guess I'll ask you. What are some of the ideas that you have for this?* Darcy: *If you want to show [students] this a totally different way, that's okay.*)

Conclusion

Educative co-planning has a purpose beyond the lesson itself. Educative coplanning also considers the novice teacher's learning, and how to prepare that novice to thoughtfully plan and teach independently. Teachers spend a lot of time planning or

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envisioning in their heads how they will enact their teaching, a process often invisible to others. It is vital that mentors learn to move their thinking and envisioning aloud in coplanning sessions so novices are able to learn from them. Co-planning lessons and units, rather than scheduling, allows for more concepts to be voiced and considered aloud while planning. Additionally, using ICEBERG as a guide to prepare for co-planning sessions will promote educative co-planning worthy of the mentor's and their mentee's time. REFERENCES

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