



Developing a Professional Learning Community among Preservice Teachers

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This action research study examined the development of a professional learning community (PLC) among 20 preservice secondary teachers as they met regularly during a semester-long, field-based education course to share artifacts of learning from their professional portfolios. The PLC model described by Hord and Tobia (2012) served as a framework for the implementation of this collaborative approach. The findings indicated that some aspects of the preservice teachers' PLCs worked well while others did not. The participants enjoyed meeting with classmates, offering emotional support, and sharing their experiences from the university course and cooperating teachers' classes. However, they struggled with focusing attention on their high school students' learning, selecting a PLC leader, managing their time, and offering constructive feedback to other group members. The results suggest that the Hord and Tobia model of PLCs is useful and deserves further consideration from teacher educators working with preservice teachers.

Keywords: preservice teacher education, professional learning communities, secondary education

Leading scholars are calling for teachers to become more collaborative in the way they learn, work, and grow professionally. Lieberman and Mace (2006) advise educators to abandon isolationist behaviors and embrace learning “from and with their fellow teachers” throughout their careers (p. 227). Emphasizing the rationale, Darling-Hammond (2006) explains, “Preparing teachers as classroom researchers and expert collaborators who can learn from one another is essential when the range of knowledge for teaching has grown so expansive that it cannot be mastered by any individual” (p. 305).

If collaboration is to become the norm, then preparation programs must socialize preservice teachers early in their careers to this preferred way of operating. One method for teaching teachers to collaborate is to establish professional learning communities (PLCs), which have the potential to teach novice educators about the power of collaboration and even to change the profession as a whole. McLaughlin and Talbert (2001) elaborate, “Building learning communities into the workload of American high school

teachers is fundamentally a problem of re-culturing the profession—changing the ethos of teaching from individualism to collaboration, from conservatism to innovation” (p. 125). Through learning about and experiencing collaboration during the preparation period, preservice teachers can avoid having to learn, unlearn, and relearn what teaching and learning look like (Klein, 2008).

The benefits of PLCs for practicing teachers is well documented (Fullan, 2001; Hord, 2004; McLaughlin & Talbert, 2006; Senge et al., 2000; Servage, 2008; Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). PLCs remove physical and psychological barriers of isolation and create opportunities for colleagues to engage in ongoing, job-embedded, and personalized professional development (DuFour, DuFour, & Eaker, 2008). Teachers who participate in a PLC advance in three specific ways: They add to their knowledge base (Andrews & Lewis, 2007), they improve their delivery of instruction (Little, 2002), and, more importantly, they facilitate increased student learning (Wiley, 2001). If

PLCs help practicing teachers, would they have the same positive effect on preservice teachers?

The purpose of this action research study was to investigate the implementation of Hord and Tobia's (2012) model of PLCs with a group of preservice secondary teachers in a field-based teacher preparation course. After setting professional goals, the 20 participants formed smaller five-member PLCs and met four times during the 15-week semester to share artifacts of learning from their portfolios. The PLCs served as a framework the participants could use to analyze their experiences and support one another as they learned to become teachers. Guiding this investigation were the following research questions: What is the nature of preservice secondary teachers' engagement with PLCs in a field-based education course? What are preservice teachers' perceptions of PLCs? What happens when Hord and Tobia's PLC model is applied during the teacher preparation stage?

Review of Literature

This study is positioned at the intersection of three areas in the scholarly literature: PLCs with preservice teachers, PLCs at the secondary level, and PLCs based on the Hord and Tobia (2012) model. The following sections showcase key empirical research in the three areas and explain the important parts of the Hord and Tobia PLC model.

Preservice PLCs

At the heart of the study in this article are PLCs comprised of preservice teachers. A review of the literature uncovered three such studies (Gemmell, 2003; Kent & Simpson, 2009; Rigelman & Ruben, 2012). In her doctoral dissertation, Gemmell (2003) followed a cohort of 10 graduate-level preservice teachers who participated in a peer-coaching PLC model over a two-semester period. The participants first learned about peer coaching and pedagogy as part of their university coursework and then taught in their mentors' classrooms, videotaped lessons, reflected on learning, and shared insights with classmates in a PLC. The study found that "peers served as both a sounding board and a reality check as interns' thinking processes became more rigorous, complex, and reflective" (Gemmell, 2003, p. 138). In addition, the preservice teachers appreciated the emotional support and the professional reflective interactions with classmates. Providing explicit instruction on giving and receiving feedback was recommended as a way to improve the collaborative learning.

In a published study, Kent and Simpson (2009) examined a PLC that developed over a two-semester period among undergraduates who were preparing to become elementary teachers. The study focused on a PLC model that emphasized mentoring. Unlike the previous study, in which participation in the PLC was required, this

study looked at preservice teachers who volunteered. They met each week with a university supervisor to reflect on their experiences, learn strategies related to effective teaching, and connect learning theories and methodologies to classroom practice. The study found that the preservice teachers were "excited by the opportunity to learn through reflecting on their experiences, gaining from the experience of others, and preparing for the first time they will have their own classroom and can call themselves a 'real teacher'" (Kent & Simpson, 2009, p. 703). In addition, the university supervisor played an instrumental role in mediating the experience for the PLC participants.

In another published study, Rigelman and Ruben (2012) organized a cohort of elementary preservice teachers in highly structured PLCs in their field-based setting. Namely, the teacher candidates were divided into four- to five-person Critical Friends Groups (CFG) and learned specific CFG protocols that guided their reflective dialog. The study found that the preservice teachers valued the feedback from their colleagues, felt confident in their abilities to teach, and acknowledged the importance of collaboration in their ongoing professional development.

In summary, these research investigations were similar to the study presented here in that all focus on preservice teachers who participated in a PLC while completing a field experience in a local school. The differences, however, are more pronounced. First, the PLCs in the Gemmell (2003) study and the Rigelman and Ruben (2012) study were structured around widely accepted approaches: peer coaching and Critical Friends Groups respectively. On the other hand, the PLC in the study described here was structured loosely around the development of portfolio goals, artifacts, and conferences. Next, participation in the Kent and Simpson (2009) study and in this study was voluntary; in all others, required. Finally, the three studies above involved preservice teachers at the elementary level; in the current study, at the secondary level.

PLCs in Secondary Schools

In addition to PLCs with preservice teachers, scholarship in the field of secondary education provided guidance for the current study. A review of the literature yielded four related studies that described the implementation of PLCs by practicing secondary teachers. Linder, Post, and Calabrese (2012) investigated the implementation of PLCs developed around teacher-selected topics. When teachers met, they discussed journal articles related to the PLC topics and shared curricular activities created for their courses. The study showed that the participants valued three PLC components: "studying a selected topic in depth, having the assistance of a university faculty member, and selecting, implementing, sharing and discussing results of

activities with each other” (Linder et al., 2012, p. 18).

As in the previous study, Nelson, LeBard, and Waters (2010) investigated secondary mathematics and science teachers who implemented PLCs. The researchers identified three aspects to making PLCs successful: a collaborative inquiry cycle to guide the work, deep conversations among teachers, and a focus on student work.

Although the PLCs in these studies were successful, others were not. Craig (2013) described secondary teachers who participated in a principal-mandated PLC. Her study showed that the natural, informal sharing of ideas between teachers decreased. Similarly, in an earlier study, O’Malley (2010) discovered that PLCs did not thrive when administrators took an active role. PLCs thrived when administrators relinquished some authority and new teachers took responsibility for growing professionally.

In summary, these studies also share similarities with the study presented here. The published studies indicate that participants prefer to select the focus of the collaborative work, receive an appropriate amount of assistance, and assume ownership of the PLC process. These aspects were incorporated into the implementation of the PLCs in this study. The major difference is that participants in the published literature often use student work as a focus of the PLC. Participants in this study did not; they shared artifacts of learning, such as lesson plans, observations of other teachers, and materials developed as part of the course requirements.

Hord Model of PLCs

Two studies appear in the scholarly literature that employ the Hord model. Maloney and Konza (2011) developed PLCs using the model with a group of elementary teachers in Australia. The researchers determined that the five dimensions of the model succeeded to varying degrees. Namely, the PLCs were somewhat unsuccessful in the two areas of shared practice and shared values and vision. A few teachers did not perceive the PLC as a priority, and some teachers dominated the conversations, thus squelching the contributions of the quieter teachers.

In another study, Wells (2008) studied six high schools in the early phases of PLC implementation. The researcher administered a survey based on the Hord model to distinguish the implementation levels of the various PLC concepts by teachers after one year of training. The survey results indicated four implementation levels: isolated analyzers (worked in isolation and focused on student learning), collaborative learners (collaborated and focused on student learning), isolated planner (worked in isolation and focused on teacher learning), and collegial managers (collaborated and focused on teacher learning).

In summary, these studies, as well as the one presented here, implemented the Hord model. A

difference is that the two studies mentioned above implemented an earlier version (Hord, 1997), while the study in this study implemented a more recent version (Hord & Tobia, 2012). In this latest iteration, Hord and Tobia view PLCs as a way to strengthen the professional part of a teacher’s work. Educators are professionals because they possess the ability to engage in “continuous learning and improvement, around both subject matter and instruction” (Hord & Tobia, 2012, p. x).

Conceptual Framework

The researcher of this study purposely selected the PLC model of Hord and Tobia (2012) for two reasons. First, Shirley Hord is a noted scholar in the field and has published journal articles and books on PLCs throughout her career (Hord, 1997, 2004, 2009; Hord & Tobia, 2012). Second, the model is research-based. Working with fellow staff members at the Southwest Educational Development Laboratory in the 1990s, Hord “reviewed the knowledge base on effective professional learning communities and visited schools where PLCs were reported to exist” (Hord & Tobia, 2012, p. 25). From the analysis emerged a model with five dimensions: supportive and shared leadership, shared values and vision, intentional collective learning and application of learning, supportive conditions, and shared practice. Each dimension is explained below. Tobia later joined Hord and updated the model by placing a greater emphasis on teacher professionalism (Hord & Tobia, 2012).

Supportive and Shared Leadership. An integral part of a successful PLC is the support that the principal or person in charge provides the group. The administrator shares leadership, power, and authority by inviting the members of the PLC to share their ideas and participate in the decision-making process (Hord & Tobia, 2012). The leader exudes confidence and a sense of security in his/her own leadership abilities, supports the participants and their work, and avoids dominating the group’s interactions. The leader is responsible for creating a continuous learning environment for the participants (Hord, 1997).

Shared Values and Vision. Improving student learning is the ultimate goal of a PLC. Teachers working collaboratively cultivate an unwavering commitment to student learning, and this vision is consistently implemented in the work of the teachers and administrators (Hord & Tobia, 2012). Educators in PLCs regularly examine the faculty’s expectations for student learning, study best practices to meet expectations, and hold colleagues accountable for student learning results. Intentional Collective Learning and Application of Learning. Teachers in PLCs intentionally collaborate in order to gain new knowledge and apply it to their instruction. The term intentional implies that the learning is purposeful. After identifying a significant problem in the school, teachers unite, study related information together, and develop common plans to address the

problem. The process yields empowered, self-directed professionals who take charge of their own learning. Teachers embrace the collaborative approach because they know it will translate into high-quality instruction for their students (Hord & Tobia, 2012).

Supportive Conditions. Supportive conditions play an integral role in the success of PLCs. Hord and Tobia (2012) divide this dimension into two categories: physical conditions and relational conditions. Physical conditions are logistics and physical requirements for teachers working together, such as time and place to meet and material and human resources. Teachers need time to plan instruction together, observe one another's classrooms, and share feedback. Relational conditions refer to the human capacities that encourage a collegial atmosphere for collective learning. Participants in the PLC develop rapport; build trusting, supportive, and caring professional relationships; and utilize effective communication skills when sharing, disagreeing, and resolving conflicts (Hord, 2009).

Shared Practice. The PLC dimension of shared practice "involves the review of a teacher's behavior by colleagues and includes feedback and assistance to support individual and community improvement" (Hord & Tobia, 2012, p. 26). Teachers can share their practices informally by simply telling colleagues about instructional activities they have developed and taught or formally by inviting colleagues to visit their classes and observe lessons in progress. In addition to the actual sharing of practice, the feedback after the discussion or observation is important. Feedback consists of open and candid conversation aimed at creating a transparent atmosphere. Feedback improves the individual and the organization (Hord, 2009).

Method

The researcher, who also authored this manuscript, received written approval from his university's institutional review board and from the participants to conduct this qualitative, descriptive action research study in his college course. The study examined 20 undergraduate preservice teachers seeking licensure in a variety of content areas at the secondary level. The preservice teachers maintained professional portfolios, met regularly to share their artifacts and reflections with one another, and developed PLCs based on the Hord and Tobia (2012) PLC model.

Action research methodology was chosen because "action research is a distinctive approach to inquiry that is directly relevant to classroom instruction and learning and provides a means for teachers to enhance their teaching and improve student learning" (Stringer, 2008, p. 1). Often associated with K-12 teachers, action research can be used by university professors as a research methodology even though some scholars claim that it disrupts the separation of pure research and teaching. As Cochran-Smith and Lytle (2009) note, "We

found that something different results when one's professional work is the research site and one's own emerging issues and dilemmas are the grist for systematic study" (p. 100). These researchers continue, "The insider status of the researcher is regarded as an asset to be capitalized on and mined, given the emic perspective, the unique insight, and the longitudinal viewpoint the researcher brings to the topic of study" (Cochran-Smith & Lytle, 2009, p. 101). Even though action research is discounted by some scholars, it informs university professors' teaching practice.

The action research cycle outlined by Stringer (2008) guided the steps of this research study. The researcher first designed the study by focusing on his teaching, the feedback shared by his students, and reading the literature on PLCs, portfolios, and teacher preparation. He then formulated a research question and developed appropriate data collection instruments to gather the data. Throughout the study, he analyzed the data and recorded the findings. At the conclusion of the study, he used the findings to make improvements to the next iteration of the course. The researcher maintained rigor throughout the study by faithfully implementing the original plan without making any deviations, carefully collecting and analyzing the data, and seeking objective input from two colleagues not directly involved in the study. Issues of validity are discussed in the section below on trustworthiness.

Researcher

For this study, the author assumed two roles. First, he was the professor who taught the education course and observed the participants teaching lessons in the cooperating teachers' classes. Mentoring preservice teachers in schools has been part of his university responsibilities for the past thirteen years. In his second role, he was the qualitative action researcher who designed the study, collected and analyzed the data, and wrote this manuscript. In short, he had to carefully balance his roles as professor and researcher. Simultaneously, he had to support his students to ensure their learning while remaining detached and objective to maintain the study's integrity.

His past experiences positively biased him toward PLCs. When he was a high school teacher fifteen years ago, he and his colleagues in the foreign language department formed an informal PLC. They voluntarily met each week during lunch to share instructional strategies that they had developed and to discuss the impact of their instruction on student learning.

Setting

The participants attended a large public university located in the southwestern United States and classified as an Emerging Research Institution and a Hispanic Serving Institution. The education department at the university follows the Professional Development School (PDS) model of teacher preparation (Teitel, 2004). The teacher licensure program for secondary education

Table 1
Study Participants by Group, Professional Goal, and Licensure Area

Participant	Professional Goal	Licensure Areas
PLC Group 1		
William	Technology	English
Olivia	Technology	English
Jack	Technology	Social Studies and Mathematics
Sophie	Diversity	English and Business
Emily	Curriculum and Instruction	Special Education
PLC Group 2		
Ethan	Curriculum and Instruction	Social Studies
Elizabeth	Curriculum and Instruction	Social Studies
Oliver	Classroom Management	Social Studies and Physical Education
Joshua	Literacy	Mathematics
Samantha	Literacy	Special Education
PLC Group 3		
Madison	Diversity	Physical Education
Noah	Diversity	Physical Education and Mathematics
Cooper	Diversity	Physical Education and Business
Lisa	Diversity	Social Studies
Abigail	Curriculum and Instruction	Spanish
Hannah	Technology	Special Education
PLC Group 4		
Thomas	Classroom Management	Physical Education and Business
Chelsea	Classroom Management	Physical Education
Mark	Classroom Management	Physical Education
Sarah	Classroom Management	English

Table 2
Timeline of Events

Week	Event
1	Introduction to the course and teambuilding activities
2	Lessons on PLCs, portfolio assessment, and reflection
3	Selection of professional goals
4	First PLC meeting – Participants formed PLC groups and shared goals
8	Second PLC meeting – Participants shared portfolio artifacts
11	Third PLC meeting – Participants shared more portfolio artifacts
15	Fourth PLC meeting – Participants shared completed portfolios with PLC group and researcher

typically lasts three semesters and requires preservice teachers to spend the first semester at the university, the second in a high school PDS, and the third student teaching at a non-PDS high school campus. This study was conducted during the second semester of this field-based sequence. Preservice teachers were at the PDS two days a week for eight hours each day, spending four hours with the professor learning pedagogy and four hours with cooperating teachers assisting with instructional responsibilities in their classes.

The study was situated in a large, urban PDS that had had a ten-year partnership with the university. The campus population was diverse in terms of ethnicity, socio-economic level, and native language. According to the state's data management system, the student composition of the approximately 2700 students attending the high school the year of this study was 70 percent Latina/o, 20 percent African-American, and 10 percent White. Twenty percent of the students were English language learners.

Participants

The 20 participants were fairly homogeneous, being mostly White undergraduates in their early twenties—75 percent White and 25 percent Latina/o. Fifty-five percent were female while forty-five percent were male. The participants were more heterogeneous in terms of their licensure areas. Some participants were pursuing one teaching license; others, two. Table 1 provides an overview of the participants by the PLC group they formed, their professional goals, and their licensure areas. Information about professional goals will be explained later in the procedure section. All names are pseudonyms.

Timeline of Events

The participants received ongoing support from the researcher during the study. For example, he taught them explicit lessons that focused on PLCs, portfolios, and reflections early in the semester; reviewed upcoming assignments during class; and fielded questions in person and via e-mail about the assignments. After selecting professional goals, the participants met in their PLCs four times during the semester. Table 2 provides an overview of the major events in the study.

Procedure

Hord and Tobia's (2012) model served as a guide for the study. The researcher attempted to implement the model as faithfully as possible throughout the study. The following section explains how the model was implemented in accordance with the published literature. Included in the implementation process were the model's five dimensions: supportive and shared leadership, shared values and vision, intentional collective learning and application of learning, supportive conditions, and shared practice. During Week 1, the participants received an overview of the education course in the PDS and completed several teambuilding activities to create a positive learning environment. These activities fostered the supportive relational conditions required in the Hord and Tobia (2012) model. During Week 2, the researcher taught several lessons that introduced the ideas of PLCs, portfolio assessment, and reflection. As part of the instruction, participants read and discussed PLC articles written by Hord. The purpose of these activities was to facilitate the participants' understanding of the PLC model.

At the beginning of Week 3, the participants studied a list of seven possible professional goals that had been predetermined by the researcher and chose one to focus on for the remainder of the semester. The seven professional goals corresponded to the major themes specified in the official curriculum that the professors in the department had developed and approved. The goal areas were curriculum and instruction, assessment, classroom management, diversity, literacy, technology, and professionalism. The goal served as the participant's semester-long inquiry (Cochran-Smith & Lytle, 2009), which addressed the dimension of intentional collective learning and application of learning in the Hord and Tobia (2012) model.

After the participants had selected an individual goal and submitted it to the researcher in writing, they began thinking about the fellow participants with whom they wanted to form a PLC. The entire class discussed the advantages of various choices, such as working only with people who shared the same licensure area, working only with people who shared the same goal, or working with a mixed group with various licensure areas and goals. Table 1 above shows that participants varied in the types of PLC groups they formed. Two of the groups had five members each, one group had six members, and one group had four members.

At the beginning of Week 4, the participants held their first PLC meeting. This step corresponded to the shared practice dimension of the Hord and Tobia (2012) model. The participants initially worked on their own to form groups of four to six classmates of their own choosing. Using their portfolios as focal points of their conversations, the newly formed groups initially met for 45 minutes to get more acquainted with one another on deeper personal-professional levels. They explained why they had selected their professional goals and brainstormed ways they could document their learning in their particular goal areas.

As the participants talked in their newly formed PLC groups, the researcher moved unobtrusively about the room and from group to group listening briefly to the conversations and recording in his research notes a few of the comments and his observations of the groups' interactions. He refrained from interjecting his comments into the groups' conversations. Once the meetings finished, the participants debriefed as a whole class and responded to follow-up questions that expanded their thinking about professional goals and about ways to document meeting their goals.

During Week 8, after a month of working independently toward reaching their goals, the groups met again for 45 minutes for their second PLC meetings. Participants shared artifacts that depicted growth in the goal areas and prepared written reflections explaining what they had learned. The researcher again remained silent, moving from PLC to PLC, listening to the

comments, and recording observations in his field notes journal. After the meetings the participants wrote reflections on what they had experienced, what they had learned from their fellow participants, and what changes they could make to improve the PLCs. During Week 11, the participants held their third PLC meetings, following the same procedure they had used for the second meetings.

At the end of the semester during Week 15, the PLCs met a fourth time. For this final PLC, the groups met at different times, and the researcher attended each group's meeting. He asked them to share their completed portfolios with all artifacts. The difference between this fourth meeting and the three previous ones was that he attended and took a more active role by asking questions after the participants had finished their discussions.

Data Sources

Throughout the study, data came from four sources: (1) written documents produced by the participants, (2) one-hour telephonic interviews with key informants, (3) the official course curriculum and assignments, and (4) researcher field notes. The written documents included the following items prepared by each of the 20 participants: four portfolio artifacts, four reflections, four post-PLC meeting reflections, and a final reflection at the end of the semester on the entire contents of the portfolio. The written documents also included 12 total sets of minutes taken by a member of each PLC during the meetings. The minutes recorded key ideas and comments shared by the participants. Taking written minutes was chosen over audiotaping the meetings in order to minimize the fear that one's comments were being recorded word for word. The minutes captured the essence of the conversation and attempted to document the participants' points of view. Written documents served as a data source because they allowed participants the freedom to choose their own words, which uncovered new emergent topics and revealed complexities among ideas in the research (Lujan & Day, 2010).

The researcher conducted semi-structured telephonic interviews at the end of the semester with five key informants. The individual interviews lasted 60 minutes and were audiotaped and transcribed by the researcher. The purpose of the interviews was to gather more in-depth information about the PLCs from the participants' perspectives. Semi-structured interviews allowed the researcher to probe for details and spontaneously change the line of questioning and gave participants the opportunity to share their perspectives (Lujan & Day, 2010).

The official course curriculum and assignments provided data for the study. The curriculum included the course syllabus and readings associated with PLCs and the assignment that introduced the participants to the idea of PLCs. This last document served as a type of support for the participants throughout the process because it

explained the step-by-step process to follow in a PLC. It also contained background information about PLCs, the rationale for the project, the questions to answer in the written reflections, and the general guidelines for the PLC meetings.

Researcher field notes were the fourth data source. As the PLCs met, the researcher circulated among the groups and listened to their comments. He recorded some of the participants' comments and his observations of their interactions, along with his ideas and ongoing analyses of the experience. Bailey and Guskey (2001) recommend that leaders take a non-participatory and facilitative approach during conferences.

Data Analyses and Trustworthiness

A deductive approach was utilized to analyze the data systematically. Since the number of studies in the area of preservice teacher PLCs was limited, the initial analysis was kept as broad as possible. First, the researcher read through the data to "gain a sense of the whole" (McMillan & Schumacher, 2001, p. 464) and generated tentative topics using open coding. He drafted memos to record the reflections and tentative ideas about his discoveries and to focus his coding (Corbin & Strauss, 2008). As he coded the raw data, he looked specifically for topics that related to each dimension outlined by Hord and Tobia (2012). This constant comparative method (Glaser & Strauss, 1967) was repeated until all related ideas and subcategories were identified and a clear picture of the situation emerged. The researcher continued reading, re-reading, comparing and contrasting, interpreting the sources, and collecting data until saturation was reached and the topics were refined into the categories.

To ensure trustworthiness, the researcher triangulated the data by cross-validating the sources and finding regularities in the data (Denzin & Lincoln, 2000). When a theme appeared at least three times in the four data sources, it was labeled as a major theme and included in the findings section. Themes mentioned once or twice were classified as minor themes and were omitted. To strengthen the aspect of trustworthiness, the researcher created an audit trail to record the analytical steps, the techniques, and the conceptual chain of logic that was followed (Drew, Hardman, & Hosp, 2008). Furthermore, he audiotaped and transcribed the interviews with the key informants, producing five hours of audiotape and 25 pages of transcription. Afterward, he member checked the data with each interviewee to ensure accuracy. The researcher also asked two colleagues to review the data and manuscript as a way to confirm the findings.

Findings

The data analysis revealed that some aspects of the PLCs worked well while quite a few aspects did not. The participants enjoyed meeting with classmates, offering emotional support to one another, and sharing their experiences from the university course and

cooperating teachers' classes. With regard to the negative aspects, some participants did not readily buy into the idea of a PLC in the beginning although they did for the most part later in the study. Some who liked the idea of a PLC tended to focus on themselves rather than on their high school students' needs. Many groups struggled with issues of identifying a leader or facilitator in the group, providing feedback to other group members when sharing portfolio artifacts, and managing their time in the PLC. In the following sections the findings are elaborated and organized according to Hord and Tobia's (2012) PLC model.

Supportive and Shared Leadership

According to the data, the participants struggled to select leaders. The PLC assignment for the first meeting directed each group to choose a person to facilitate the meetings and record the minutes. During the telephone interview, Elizabeth identified Samantha as the leader because she recorded colleagues' comments and kept the group working at an efficient pace. Joshua, a member of the same PLC, recalled the situation differently. He claimed to be the "de facto" group leader because he had the most dominating personality and he had volunteered to share first. These differing viewpoints suggested that group members did not clearly know who was in charge.

Even though the groups felt unsure about leadership roles, most participants were cordial to the person ultimately chosen. One of the four groups, however, did not function well. In a post-conference reflection, Emily described her experience as the leader and scribe in her group. When she tried to move the discussion along, she received some resistance from her colleagues. She wrote, "I tried to find a way to participate in a meaningful way by keeping track of time, but my colleagues weren't very receptive to this role and it turned into a very negative experience." The negativity led her eventually to change PLCs.

The participants commented in their final reflection that they liked the fourth or last PLC meeting the best. Elizabeth explained why a more knowledgeable person should serve as the leader. She stated:

You [the researcher] should mediate all of the meetings because you know all of it already and we're still learning. You know the principles of education and it's nice to have somebody there who has experience and can relate to us or question us. You will ask us questions to make us think, rather than questions that someone asks that we don't know. It was nice to talk to you during the last conference. It was refreshing to have someone guide us through it.

The findings suggest that the participants were eventually able to select a leader and act cordially to the person, but they would have preferred to work with a leader who had

more experience and credibility.

Shared Values and Vision

The participants apparently misunderstood the purpose as well as the process of PLCs. Although the participants had read and discussed the importance of PLCs to K–12 student learning, they were unclear about the reasons for meeting. In his telephone interview, Joshua acknowledged that the researcher had stressed the importance of the PLCs through his comments and explanations in class and through his grading system, but Joshua wished the researcher had emphasized more the real-world importance of teachers building communities. The value of PLCs did not become clear until “later in the semester.”

Furthermore, the low number of artifacts submitted during the first conference suggests either confusion or a lack of buy-in by the participants. Only 55 percent (11 of 20) of the artifacts were submitted during the first conference, but 85 percent (17 of 20) were submitted during the third. When asked to explain their reasons for not completing the assignment, the majority of participants responded, “I forgot.” Finally, a further analysis of the artifacts shared revealed that the participants had focused more on their own problems than on their students’ learning. An analysis of the PLC minutes confirmed that the conversations focused primarily on problems the participants encountered during the lesson, not on their students’ learning.

Progress, however, still did occur over the course of the semester. Twenty-five percent (5 of 20) of the participants wrote about the importance of their high school students’ learning in their reflections at the end of the semester. Noah wrote, “The main goal is that it is not about improving my own knowledge, but the main goal should be about the students.” By participating in the reflective and interactive PLC discussions, the participants were beginning to shift their focus from themselves to their students.

In addition to the confusion about the purpose of the PLCs, the participants were unclear about the process. Samantha was confused about what to do during the PLC meetings. To address that issue in the future, she suggested better modeling of expected behavior during the PLCs. She wrote:

You [the researcher] might show us how you would exactly prefer that we go about it because I think that we were put into those groups and told to share about your artifact and what you do and then you wanted everyone to give feedback. I think that people didn’t know how to do that for a large part, so maybe modeling it or being very specific on ways to give feedback so people know.

The participants would have liked to have the researcher directly teach them about PLCs and the ways to interact with others in the group.

Intentional Collective Learning and Application of Learning

The participants demonstrated their intentional collective learning by setting professional learning goals for the semester. They each selected a goal from a prescribed list that corresponded to the major concepts outlined in the university’s official course curriculum. An analysis of the goals revealed that five participants chose classroom management; five, diversity; four, curriculum and instruction; four, technology; and two, literacy. No one chose assessment or professionalism. When asked to explain their goal selection, the participants offered a variety of reasons for their choices. Some participants based their decision on prior experience. Madison chose diversity because, “My high school was not very diverse, and I do not feel prepared to teach in a diverse environment.” Participants recognized that their backgrounds were different from the current school context in which they found themselves, and they viewed the PLCs as a way to expand their knowledge of schools. Personal beliefs about teaching influenced some participants’ decisions. After selecting diversity as her goal, Lisa commented, “All children come from different backgrounds and we need to understand how to teach them using appropriate methods.” Personal beliefs were particularly influential when it came to classroom management. Mark said, “If you don’t have classroom management, then you can’t give the students the time they deserve.” The participants viewed involvement in PLCs as an opportunity to refine their beliefs about students and teaching.

At the end of the semester the participants reflected on their learning and named a new goal to pursue in the future. An analysis of the goals revealed that six participants picked classroom management; five, technology; four, curriculum and instruction; one, diversity; one, professionalism; and three, no response. The participants who completed the assignment cited their growing awareness of the principles of teaching as the reason for selecting the new goals. In summary, the PLC provided a framework the participants could use to set goals, reflect on their experiences, and strive toward future areas of growth as educators.

Supportive Conditions

The participants encountered problems regarding the structural conditions for implementing a PLC, primarily related to the issue of time. The amount of time for each meeting, 45 minutes, was too short. Thomas and Olivia wrote respectively in their post-PLC reflections, “We need more time,” and “We did not have enough time to discuss all our insights.” The participants felt rushed.

The groups also struggled with their management of the allotted 45 minutes. Emily wrote in a post-PLC reflection, "I attempted to remind my colleagues that we can't spend all our time on one person, but it did not go over well. Two colleagues hogged most of the time while the others split four to six minutes." Lisa proposed a possible solution when she wrote, "There might be too many of us because we ran out of time." Decreasing the number in each PLC would afford more time.

Another related problem was the time of day when the PLCs occurred. The first meeting took place during the middle of the morning; the second, at the end of the day. Meeting at the conclusion of a long, busy day caused problems because the participants were tired and wanted to go home rather than stay and talk as evidenced by Mark, who wrote, "It was at the end of the day, and the conversations were quick." Conducting PLC conferences at the beginning or in the middle of the day may be more effective.

Furthermore, the composition of the PLCs was a problem for some participants. Although they decided with whom they would work, some participants noted that the group composition was not ideal. It seemed that each person preferred a different type of group composition. Some wanted PLCs comprised of colleagues with same goal; some wanted colleagues with the same licensure area; some wanted colleagues with the same licensure area and goal; and some expressed no preference at all. The participants could switch groups if they wanted, and one did.

Even with these problems, some structural conditions aided the PLCs. The participants were comfortable with the location of the meetings. They arranged their desks in small circles in the rooms where they met. The participants also valued having Internet access, which allowed them to share electronic documents easily with fellow group members.

The participants encountered very few problems with the relational conditions. For the most part, the participants treated one another respectfully during the PLCs. When asked in the post-conference reflections about what had worked, the participants mentioned the positive nature of the interactions. After the first conference, Cooper wrote, "Our conference ran very smoothly. We stayed on topic and built great rapport with each other, which leads to an open discussion."

In all reflections, only two negative comments surfaced. Jack wrote after the second PLC meeting, "Emily needs to be removed from our group." In her reflection, Emily provided more insights into the group dynamics. She tried to keep the conversation moving forward, but the other participants did not like her nudging. The researcher tried to help Emily resolve the conflict by discussing various solutions. Hoping to empower her, he encouraged her to do what was best for

her professional growth. Emily met with the same group for the third conference but switched groups for the fourth one.

Shared Practice

Conversations played a positive role in the PLCs. The participants learned pedagogical information in discussions with classmates. Throughout the semester the participants studied many topics such as lesson planning, test development, classroom management techniques, and modifications for special education learners and English language learners. When they met in their PLC groups, they talked about their understanding of these concepts. According to the participants' reflections, the abstract ideas became more concrete and real after the lessons and PLC meetings. Ethan wrote that preparing to talk with his PLC members forced him to think carefully about his understanding of lesson planning. He had to consider what he was going to say during the meeting.

In addition to gaining new information, the participants deepened their understanding of the pedagogical ideas by listening to others' perspectives. Each PLC group member had a slightly different understanding and unique way to apply the information to his/her content areas. Samantha commented, "There are many facets to teaching and we all approach them from different angles. When we combine our approaches and insights, it can help us to make our instruction more effective."

During the PLC meetings the participants were supposed to focus on their portfolio artifacts and their students' learning; however, they interjected personal stories of problems they were facing in their cooperating teachers' classes. As scribe, Joe recorded in his group's minutes the problems that were discussed. The list included some issues with high school students talking about inappropriate topics, refusing to complete work, feigning sickness, and texting on their cell phones. Similar important and instructive side conversations appeared in all groups' minutes.

Although the participants regarded PLC conversations positively, they experienced a few negative aspects when interacting with group members. Giving feedback was a challenge because it was either shallow or non-existent. Ethan elaborated:

As far as constructive criticism, there could have been more. I never heard any constructive criticism. I wonder if it's a matter that everyone is on the same page and into everybody else's ideas or if there is some sort of inhibiting factor about being critical. Everyone throughout the semester was aware of that dynamic. People in their 20s, 30s and 40s who are getting ready for a job realize on some level that constructive criticism among peers is helpful. If we're getting ready for a job and career, then we can be a little harsher,

but give honest opinions without hurting others' feelings.

The participants struggled with giving and receiving feedback because they did not know how and why to give feedback.

Discussion

The findings from this study add to the literature on PLCs by offering concrete advice for teacher educators who want to implement Hord and Tobia's (2012) PLC model with their preservice secondary teachers. Successful as well as unsuccessful aspects of implementation emerged from the data.

Successful Aspects of Implementation

Preservice teacher PLCs gave the novices opportunities to engage in instructive and supportive conversations with colleagues who were at the same career stage. These conversations were beneficial because preservice teachers were able to verbalize their thinking about pedagogical concepts, ask questions to clarify misconceptions, and deepen their understanding of ideas. The findings in the study affirmed the power of professional conversations, which is well-documented in the literature for both in-service and preservice teachers. Working with experienced teachers, Clark (2001) explained that a professional conversation is "not only a satisfying end in itself, but also a medium of support, advice, sense making, and encouragement for teachers to continue to learn how to serve their students" (p. 7). Likewise, Kent and Simpson (2009) in their study of PLCs in teacher preparation programs found that student teachers wanted to share their experiences with others in groups.

In addition to learning pedagogical information, the conversations provided important emotional support, which emerged as a prominent recurring theme and appears to be a new contribution to the field of preservice teacher PLCs. Granted, other scholars, such as Hord and Tobia (2012), have discussed the relational support needed among teachers in PLCs; however, the idea of emotional support was particularly valued by the preservice teachers in this study. Novices early in their careers have to learn large amounts of new information in a fairly short amount of time and apply it in unfamiliar classroom settings. As a result of the pressure, they often doubt their abilities and feel anxious and insecure. They are "swimming in a sensory overload with new co-workers, a new physical environment, and new students. Survival is the metaphor that is often used to depict the new teacher experience" (Kim & Roth, 2011, p. 6). Meeting in PLCs allowed preservice teachers in this study to share their fears, console one another, see that they were not alone, and receive encouragement.

Hopefully, these novices will develop these types of support systems when they are practicing teachers. Studies examining beginning teachers during their induction years show that emotional support from

mentors and colleagues yields increased job satisfaction, greater commitment to the profession, and higher retention rates (Ingersoll & Strong, 2011). Beginning teachers remain in the profession when they "feel supported and are buoyed by a professional culture that encourages professional interaction" (Kardos, 2004, pp. 139–140). PLCs might be a way for teacher educators to help preservice teachers begin developing support systems.

Unsuccessful Aspects of PLC Implementation and Implications for Teacher Educators

The Hord and Tobia (2012) PLC model was implemented in a loosely structured way around professional goals and portfolios. Following this approach, problems surfaced in four areas, all of which are discussed in the following section. Possible solutions based on research are offered to scholars who want to implement this PLC model in the future.

First, although the ultimate goal of a PLC is to focus on K–12 students' learning (DuFour, DuFour, & Eaker, 2008; Hord & Tobia, 2012), preservice teachers tended to focus on their own teaching. It was not surprising that the novices in this study centered on themselves. The structure of the course inhibited a shift of focus from self to the high school students. The preservice teachers spent only eight hours total per week in their cooperating teachers' classes and taught three short lessons. As a result, they felt a weak commitment to their students' learning because they were not fully immersed in the high school classes. Fuller's (1969) classic study of the stages of teacher development concludes that preservice teachers are naturally predisposed to focusing on themselves. Fuller suggests that giving them experiences with K–12 students will remedy the situation and move them from self-centeredness to student-centeredness. Fuller's advice would indicate that the act of teaching itself may address this issue in preservice teacher PLCs. Another solution that could help them focus more on their students is to require them to collect student data from pre- and post-assessments administered during their lessons in their cooperating teachers' classes and use this information as the focus of their PLC conversations. Using assessments in that way would orient their conversations in the PLCs to examining their students' learning and researching best practices to improve student learning (Hord & Tobia, 2012).

Giving and receiving feedback was another area that did not work well in the preservice teacher PLCs. The participants in the study were respectful of colleagues and tended to avoid confrontation. Consequently, a culture of politeness appeared to yield few benefits. In her dissertation, Gemmill (2003) advised teacher educators to teach students how to give and receive feedback. Likewise, this study confirmed previous research by affirming that the novices did not know how to give or

ask for feedback. They had not yet learned this pedagogical technique. Early in the process, teacher educators should explicitly teach novices how to give and receive high-quality feedback. Perhaps following specific protocols, like those used in the preservice PLC study by Rigelman and Ruben (2012), would ensure that feedback is given in a professional and consistent way.

Identifying leaders in the preservice teacher PLCs posed problems. For the most part, the groups functioned satisfactorily because the group members were cordial, polite, and respectful to one another and because they were at the same point in their careers. Previous studies show that beginning teachers value working with peers and seek out such collaborations because they gain as much as they give in such interactions (Gellert & Gonzalez, 2011). Working with more experienced teachers and administrators is also beneficial. In their research, Hord and Tobia (2012) found that in-service teachers in successful PLCs worked closely with their administrators to learn leadership skills and develop a “personal and professional comfort level” sharing the decision-making process (p. 101). The principal modeled appropriate leadership and then shared decision making with teachers. As found in the studies on PLCs in secondary schools (Craig, 2013; O’Malley, 2010), teachers and their administrators must find an appropriate balance when sharing PLC leadership responsibilities. Moreover, preservice teachers need to know how to select a leader among their peers when working in a shared leadership setting. The participants in this study stated that the fourth portfolio conference, the meeting led by the researcher, ran more smoothly because there was someone clearly in charge. Therefore, the approach for this fourth conference should be used for the first conference. A more experienced person, such as a professor, can model and scaffold as preservice teachers learn about leadership and PLCs. The process of selecting a leader from the peer group should also be taught.

Finally, time affected the success of the PLCs. The participants in this study reported that they wanted more than the allotted 45 minutes. To give all participants more time to share artifacts and discuss their learning, teacher educators need to set aside an hour or more for the meeting or else reduce the number of group members from five to three or four. Technology, including online discussion boards or blogs, might help resolve the issue of time. Studying the implementation of PLCs with practicing teachers, Lujan and Day (2010) also found that the meeting time must be sacred and treated as a high priority.

Limitations and Unanswered Questions

The study’s findings should be considered in light of several limitations. First, the duration of the study was a limiting factor. Ideally, a longitudinal study lasting from the preservice stage through the induction stage

would yield a clearer picture of the role of PLCs in teacher development. This study spanned one semester in order to identify the steps that teacher educators must take to introduce preservice teachers to a collaborative way of working with colleagues. The goal was to avoid requiring teachers early in their careers to learn, unlearn, and relearn information (Klein, 2008). According to the data, as time progressed, the participants better understood the purpose and process of the PLC and also shifted their thinking from themselves to their students.

Second, the findings of this case study may not be generalizable to other contexts. This study focused on 20 participants in one particular school. With all qualitative studies, readers must decide the applicability of the results to their specific context. The study was intended to generate ideas and possibilities for scholars to replicate in other settings.

Third, since this study was exploratory by nature, open-ended data collection instruments were used. Therefore, future studies should take formal steps to determine the degree to which participants embrace the PLC idea. Coincidentally, Shirley Hord collaborated with fellow researchers to develop the Concerns-Based Adoption Model (CBAM), which measures how teachers perceive and implement a new idea and how facilitators adjust their interventions to advance the change process successfully (Hall & Hord, 1987). CBAM includes written surveys, observation protocols, and structured interviews that assess the stages of concerns, levels of use, and implementation process of the new approach. These assessments cannot be administered retroactively to the participants because the study described here has ended. However, based on the collected data, it appears that most participants reached the middle levels of these measures. In other words, the participants did not fully embrace the PLCs, but they did not fully reject them either. Researchers in future studies may want to examine each participant’s experience more closely using CBAM to identify the specific changes that must be made when implementing PLCs.

Besides the questions related to CBAM, this study generated additional unanswered questions that could be pursued in future research studies. For example, what is the earliest point that PLCs can be implemented in a teacher preparation program? Can teacher educators implement PLCs in courses that do not include a field component in K–12 settings? Finally, how can preservice teachers be taught to give constructive feedback? It seems that the study raised more questions than it found answers.

Conclusion

Research shows that PLCs help practicing teachers to increase learning for their students and create collaborative settings for professional development. Based on the findings of this study, developing PLCs with preservice teachers shows glimpses of promise. Although

many problems surfaced when PLCs were implemented with preservice teachers, these difficulties can be minimized by teacher educators designing future PLCs. Thessin and Starr (2011) state, "As schools and districts race to implement PLCs to provide teachers with time to collaborate, they are also realizing that learning how to work in teams does not just magically happen. Districts must be deliberate in their efforts to teach teachers how to collaborate" (pp. 49-50). Likewise, teacher preparation programs, in addition to teaching pedagogical information, must introduce PLCs to preservice teachers in the early stages of their careers. With some modifications, the Hord and Tobia's (2012) model is a good starting point for developing PLCs among preservice secondary teachers.

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