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Analyzing the Reported Professional Learning of Ninth-Grade Teachers Participating in an Interdisciplinary Team

Glynnis J. Childress
Montclair State University

ANALYZING THE REPORTED PROFESSIONAL LEARNING OF NINTH-GRADE TEACHERS PARTICIPATING IN AN INTERDISCIPLINARY TEAM

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Glynnis Childress

Montclair State University

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Glynnis Childress

Candidate for the Degree:

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[redacted]

Dr. Scott Herness
Vice Provost for Research and
Dean of the Graduate School

Date Jan. 10, 2022

Dissertation Committee:

[redacted]

Dr. Emily Hodge
Dissertation Chair

[redacted]

Dr. Kathryn Herr

[redacted]

Dr. Reva Jaffe-Walter

[redacted]

Dr. Suzanne McCotter

ABSTRACT

ANALYZING THE REPORTED PROFESSIONAL LEARNING OF NINTH-GRADE TEACHERS PARTICIPATING IN AN INTERDISCIPLINARY TEAM

by Glynnis J. Childress

Interdisciplinary teaming has been a hallmark of the middle school philosophy for over 30 years and consists of a multitude of benefits for teachers, ranging from job satisfaction to communal support. Yet, interestingly, there is little research on the benefits of interdisciplinary teaming at the high school level, even with an increased focus on teacher collaboration and Professional Learning Communities (PLCs). Thus, the purpose of this practitioner action research study was to examine the reported professional learning of ninth-grade teachers participating in an interdisciplinary team. The interdisciplinary team consisted of seven secondary level English, science, math, and social studies teachers, including me. During this two-year study (2017–2019), the interdisciplinary team functioned as a PLC and met twice a month: once for the required PLC time and a second time in a voluntary format. Two research questions guided my study: How do we create space for an interdisciplinary team at the high school level? What types of teacher learning and student support may result from creating space for high school teachers to work in an interdisciplinary team setting? Throughout my two findings chapters, I utilized the "Grammar of Schooling" by Tyack and Tobin (1994) as a conceptual framework and Social Learning Theory by Brown and Adler (2008) as a theoretical framework. Both of these frameworks provided useful lenses in understanding the archaic structures of schooling and the organic and innovative collaborative practices of people working in groups. Initially, I found it difficult to replicate a traditional interdisciplinary team model. But despite the institutional barriers, the interdisciplinary team collectively learned from one another,

contributed to conversations, offered suggestions and resources, and, most importantly, advocated for ninth-grade students.

Keywords: interdisciplinary teaming, professional learning communities, high schools, transition to high school, grammar of schooling, social learning theory

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DEDICATION

This dissertation is dedicated to my loving parents, John and Carmelina, my supportive and encouraging husband, Troy, and to my little love and son, Russell.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: INTRODUCTION

> Two people are better than one, because they get more done by working together. If one falls down, the other can help him up. But it is bad for the person who is alone and falls, because no one is there to help. If two lie down together, they will be warm, but a person alone will not be warm. An enemy might defeat one person, but two people together can defend themselves; a rope that is woven of three strings is hard to break (ECC 4:9-12 New Century Version).

This biblical verse is from the book of Ecclesiastes in the Old Testament. The ancient Hebrew text was written to share wisdom about life, work, and relationships with the reader. In essence, King Solomon's message underscores the fact that two people working collaboratively are more effective than if they are working separately. Indeed, the practice of laboring and working together fruitfully in a collaborative setting has been evident and well documented throughout history. This ancient verse stands as an effective reminder that teamwork is often better than working alone (Longman, 1998).

In contrast to a community that labors and works together, teachers have historically worked in isolation, rarely benefiting from the practice of collaboration (Johnson, 2015; Lortie, 1975; Sergiovanni, 1994; Stacy, 2013). Even today, teachers regularly report having limited opportunities during the school day to spend time with their colleagues, leading to difficulties in effectively collaborating with each other (Collinson & Cook, 2001; Duffield, 2013; Ostovar-Nameghi & Sheikhahmadi, 2016; Taylor, 2013). Interestingly, a range of strategies for promoting collaboration has arisen in the past ten years or so. One important strategy is teacher-led professional development aimed at collaborative professional learning (Stacy, 2013). Although these initiatives tend to be relatively short lived and focused on new curriculum

implementation or a particular teaching strategy (e.g., using Bloom's taxonomy) or school goal (e.g., enhancing reading comprehension across disciplines), one approach that is more sustained and implemented primarily at the middle level is interdisciplinary teaming. Yet interdisciplinary teaming is not widely implemented in high school settings (Murata, 2002).

Throughout my 17 years of teaching experience at both the middle and high school levels, teacher collaboration has been both evident and absent, depending upon my placement. During my tenure at the middle school level, I actively collaborated in an interdisciplinary team. I benefited both professionally and personally by being part of a collaborative unit. On a daily basis, I would meet with my team to discuss pedagogy, students, school initiatives, and life. For this reason, I believe interdisciplinary teaming benefits teachers both pedagogically and relationally.

In 2015, I was reassigned to teach at the high school level. Being a fairly new teacher to the school, I found that the professional opportunities to collaborate with colleagues offered an interesting and sometimes frustrating experience. During my first year at the high school, I often felt isolated when planning lessons, writing assessments, understanding my students, and learning the curriculum. Additionally, there were no opportunities to common plan, collaborate, and meet with other teachers who shared similar students. Reflecting upon my experiences at the middle and high school levels, I viewed the opportunities for collaboration in middle school as rewarding but discouraging at the high school level. Despite—or perhaps because of—the lack of collaboration and difficulties during my first year teaching high school, I began to wonder how a middle level interdisciplinary team structure might translate to the high school level.

In addition to potential benefits for teachers, I also wondered if a team structure in the ninth grade might benefit students. The transition from eighth to ninth grade can be a difficult

academic and social journey for students. This transitional time period encompasses a multitude of internal and external changes. For example, incoming ninth-grade students experience external challenges such as facing a more competitive academic environment with an increase in anonymity (Roeser et al., 2002). Internally, this transitional time period often causes socio-emotional problems such as anxiety and stress for incoming ninth-grade students (Hertzog et al., 1997; Kennelly & Monrad, 2007). Coupled with the increased importance placed on peer acceptance and relationships, ninth-grade students often experience an increase in social and emotional changes (Cauley & Jovanovich, 2006). The incoming high school experience is remarkably different compared to the smaller and more nurturing middle school environment. As such, it is clear that the transition from eighth to ninth grade is difficult transition, but the implementation of an interdisciplinary teaming structure in the ninth grade might alleviate some of the external and internal challenges.

Purpose of Interdisciplinary Teaming

The concept of interdisciplinary teaming has been an integral part of middle school education for over 25 years. Interdisciplinary teams consist of teachers from different subject areas collaborating to plan, instruct, and evaluate students in smaller learning communities within the context of the school (Boyer & Bishop, 2004; Clark & Clark, 1994; Robbins & Searby, 2013). Similarly, interdisciplinary teaming enables teachers to experience less isolation and more shared resources and responsibilities (Dickinson & Erb, 1997; Hindin et al., 2007; Sandholtz, 2000). For example, interdisciplinary teams offer teachers the chance to collaborate on shared instructional units, which allows students to make connections to other academic disciplines (Bishop & Harrison, 2021; Epstein & Mac Iver, 1990).

Interdisciplinary teaming has been interpreted and implemented in various ways over the past decades and has been a structural hallmark of many secondary level schools since the 1960s (Clark & Clark, 1992; Cook & Faulkner, 2010). An essential aspect of interdisciplinary teaming involves teachers working as a community of professionals and discussing pedagogical and methodological concepts, lessons, and strategies within and across their subject areas (Havnes, 2009). Having collegial relationships among teachers can improve school culture and create an environment of shared knowledge and innovative practice (Shah, 2012). In short, when teachers participate in collaborative opportunities such as interdisciplinary teaming, it arguably enables them to access opportunities to collectively share and discuss pedagogical strategies, experiences, and innovations.

Likewise, creating a supportive environment was an integral attribute to the successes of my middle level interdisciplinary team experience. The relational conditions of the team focused on the development of a collegial environment rooted in collective learning. Collegial relationships can best be defined as "relationships between members of the same occupation who have a sense of belonging together and identify with others in a common undertaking" (Reinken 1998, p. 6). For example, collegial relationships can be intimate and close and be based on similar experiences, shared beliefs, and understandings. Collegiality develops when members have opportunities to relate and bond with one another. As a result, professional cultures of collegiality ascribe to a community that collectively understands the norms, values, beliefs, dispositions, and attitudes that exist within interdisciplinary teams.

Another significant aspect of collaboration within interdisciplinary teams is opportunities to common plan. Common planning time is a specific period of the day in which teachers meet to plan curriculum and assessments, share instructional strategies, plan team events, address student

needs, and speak with parents (George & Alexander, 2003; McEwin & Green, 2011; Mertens et al., 2010). Research conducted by Mertens and colleagues (2013) noted that high levels of common planning resulted in higher student achievement, improved work climate, and increased opportunities for professional growth for teachers. Additionally, interdisciplinary teams involved in common planning are able to interact more frequently, share experiences, and develop supportive relationships (Mertens et al., 2010; Mertens et al., 2013). The relational aspects of teaming are crucial for teachers as well as students. When effective teams partake in common planning (e.g., collaborate on interdisciplinary units), teachers are more committed to the academic successes of students (Dever & Lash, 2013).

Opportunities for interdisciplinary teachers to collaborate, support each other, and common plan create ideal spaces for middle school teachers. There is much research evidence supporting the impact of interdisciplinary teams at the middle school level on students (Arhar, 1990; Flowers et al., 2000; Moolenaar et al., 2012). Yet there is little research on the benefits of interdisciplinary teaming at the high school level.

Interdisciplinary Teams as Professional Learning Communities

Although professional development (PD) opportunities for teachers often take the form of daylong sessions that are not tailored to individual needs (Borko, 2004), some types of collaborative PD structures can serve as effective spaces for educators to collectively collaborate and individually develop. Traditional PD is not always enough, and teachers "need to have one-to-one and group opportunities to receive and give help, and more simply, to converse about the meaning of change" (Fullan, 2007, p. 139). Interdisciplinary teams as well as professional learning communities create spaces for teacher collaboration. The concept of teacher collaboration can best be defined as a "systematic process in which teachers work together to

analyze and improve their classroom practice" (DuFour, 2004, p. 3). By offering a space for teachers to facilitate professional development, teachers can examine their own strengths and learn from their colleagues (Reeves, 2004). For example, one professional development program, Professional Learning Communities (PLC), has been widely implemented in education as a method of bringing about change and encouraging teacher collaboration (Teague & Anfara, 2012). Under some conditions, PLCs promote collaborative spaces where educators work "collectively and purposefully to create and sustain a culture of learning for all students and adults" (Hipp & Huffman, 2010 p. 12). Additionally, PLCs offer opportunity for shared governance, which fosters an environment of community to increase student achievement and school improvement (Brown et al., 2018; Wilson, 2016). Hence, PLCs can provide an ideal space for collaborative learning.

Ongoing job-embedded learning opportunities for educators are often modeled and structured in PLCs. DuFour and colleagues (2013) define PLCs as "an ongoing process in which educators work collaboratively in recurring cycles of collective inquiry and action research to achieve better results for the students they serve" (p.10). Researchers such as Hord and Tobia (2012) developed models to implement successful PLCs. By concentrating on teacher professionalism, Hord and Tobia's (2012) PLC model focuses on small communities of learners that "constantly support one another's profession growth" (p. 18). This research-based model includes five dimensions: supportive and shared leadership shared values and vision, intentional collective learning and application of learning, supportive conditions, and shared practice. Both interdisciplinary teaming and PLCs offer ideal structural spaces for educators to work together independently toward collective goals.

Contextualizing Interdisciplinary Teaming

Many current educational reforms promote the idea of teachers working as a community of professionals to discuss pedagogical and methodological concepts. In 2009, for example, the United States Department of Education implemented Race to the Top, a competitive federal grant designed to encourage and monetarily reward educational reforms at the state level. Advocates for Race to the Top claimed that paying increased attention to analyzing the results of student performance on tests would improve teaching practice, which would in turn result in greater collegiality and professional development among teachers (Hourigan, 2011). For example, one particular section of Race to the Top, titled Great Teachers and Leaders, highlights the need to "Provide effective, data-informed professional development, coaching, induction, and common planning and collaboration time for teachers and principals that are, where appropriate, ongoing and job-embedded" (p. 10). As such, the rewarded Race to the Top states were charged with demonstrating positive and effective professional development reflective of teacher collaboration.

In 2012, the New Jersey Department of Education (NJDOE) unanimously passed the Teacher Effectiveness and Accountability for the Children of New Jersey Act (TEACHNJ) to raise student achievement and improve instruction. Additionally, TEACHNJ outlines the requirements and outcomes for teacher evaluations. In order to effectively implement TEACHNJ, the NJDOE created the AchieveNJ teacher evaluation policy. While AchieveNJ has a large focus on value-added measures and may be counterproductive to teacher collaboration in some ways, AchieveNJ also provides school districts with the necessary support structures and details to ensure implementation of TEACHNJ (NJDOE, 2014). For example, AchieveNJ created the Collaborative Teams Toolkit to provide school districts with strategies and methods to

implement a shared learning and working environment (NJDOE, 2015). According to the Collaborative Teams Toolkit, Strategy 1.1: Time for Collaboration focuses on the scheduling of collaborative team time in schools by providing resources on how to (1) organize staff into teams to discuss students in common and their instructional approaches, and (2) find time for teams to meet and collaborate by prioritizing collaborative team meetings over other meetings/activities (NJDOE, 2015). As such, NJDOE is committed to promoting and enhancing the collaborative learning opportunities for teachers to improve instruction by providing time to share resources and instructional strategies. The reality is that current policies and platforms merit inquiry in the need for a more effective and stronger sense of collaboration. While some might see TEACHNJ's emphasis on value-added test scores as being counter to teacher collaboration, the legislation also underscores the importance of collaboration. Additionally, in 2017, the NJDOE updated their professional development goals for teachers to include collaboration. The goal stated that each teacher must be a "member of a collaborative professional learning team" (NJDOE, 2017). Current policy initiatives have aspects that encourage collaboration that focuses on the needs of the teachers, the types of support structures, and the final outcomes.

Purpose Statement

The purpose of this study is to explore and analyze the types of professional learning that teachers experience when participating in interdisciplinary teams. There are two purposes for this study that align with the research questions: (1) the process of developing an interdisciplinary team at the high school level, and (2) the types of professional learning and activities that the interdisciplinary team engaged in and experienced. In essence, I wondered if teaming that is focused on teaching and learning would translate into new pedagogical knowledge and action. Wells and Feun (2013) suggest ideal teaming environments need opportunities to learn and work

together on skills. I am especially interested in analyzing these reported experiences within this particular approach to collaboration because collaboration among teachers is often described as if it were a "natural" and "easy" thing to achieve when in reality things can be quite different. I am particularly interested in focusing on interdisciplinary teaming at the high school level because much of the research pertains to teaming at the middle school level. Yet, high schools seem to be ideal contexts for facilitating teaming because often times students struggle with attendance, academics, and dropping out during the first two years of high school, and teaming offers a proactive approach to address these issues (Teaming, 2013). However, the historic structure of high schools with specialized, department-focused layouts (sometimes called "the grammar of schooling" [Tyack & Tobin, 1994]) creates minimal opportunities for interdisciplinary collaboration and teaming, which is necessary to support students during the transition from eighth-to-ninth grade.

Conclusion

For this reason, I am conducting a practitioner action research study in which I create and participate in an interdisciplinary team at the ninth-grade level. It should be noted that my study does not mirror a traditional interdisciplinary team because this team shared only a smaller subset of students. The reason for the small sample size of students is because of the antiquated structure of my high school, administrative turnover, and lack of support, all of which will be addressed in later chapters. In Chapter Two, I discuss the literature on interdisciplinary teaming, specifically highlighting the importance of the eighth- to ninth-grade transition. In Chapter Two, I also will discuss the theories framing this research study. Chapter Three will outline my methodological approach to this research study, specifically focusing on the use of practitioner action research, the context, data collection, procedures, positionality, and trustworthiness. In

Chapters Four and Five, I will present my findings by focusing on both of my research questions and frameworks. Chapter Four uses Tyack and Tobin's (1994) grammar of schooling concept to focus on the first research question: "*How do we create space for an interdisciplinary team at the high school level?*" Chapter Five will focus on the second research question: "*What types of teacher learning and student support may result from creating space for high school teachers to work in an interdisciplinary team setting?"* using Brown and Adler's (2008) Social Learning Theory. Finally, in Chapter Six, I will summarize the key findings of my research and discuss recommendations for future research to teacher education and practitioners. I will reflect on my role as an insider studying and working with other insiders as well. In Chapter Six, I will also explain the current state of the interdisciplinary team and my current role.

CHAPTER TWO: LITERATURE REVIEW

This literature review is divided into four sections, which together lay the groundwork for why an investigation of teaming at the high school level is a critical area of research. First, I describe the research literature on interdisciplinary teaming and then provide an overview of the contextual information about teacher collaboration. In the second section, I define Professional Learning Communities (PLCs) as related to interdisciplinary teams and highlight a PLC model as a way to encourage teacher collaboration. In the third section, I examine the literature pertaining to the professional learning of teachers participating in interdisciplinary team settings and how this learning influences teachers' pedagogical practices. In the last section, I address the literature on the significance of the eighth- to ninth-grade transition as well as programs in place to promote academic success and personal growth.

Interdisciplinary teams, or *teaming* for short, is largely a pedagogical strategy in which two or more teachers from different content areas or disciplines collaboratively teach a cohort of students (Bishop & Harrison, 2021; Haverback & Mee, 2013; Mertens & Flowers, 2004; Seabury & Barrett, 2000). For example, an eighth-grade interdisciplinary team might consist of four core teachers (social studies, English, math, and science) who collectively teach a selected group of students throughout the school day. Typically, the number of shared students on a four-person team ranges from 100 to 120 students (Alspaugh & Harting, 1998), although Ellerbrock and colleagues (2018) note that teams can serve as few as 40 or as many as 190 shared students. Teaming embodies a multitude of benefits for teachers, including positive personal and professional growth, communal support, and increased job satisfaction rates (Fairman & Mackenzie, 2015; Flowers et al., 2002; Husband & Short, 1994; McLaughlin, 1993; Shah, 2012). For example, in some U.S. middle schools, teachers are divided into interdisciplinary teams

expressly for the purpose of working together to improve classroom practice across all content areas (Flowers et al., 2000; Moolenaar et al., 2012). Unsurprisingly, too, teachers working in interdisciplinary teams have reported an increase in professional dialogue and sharing of resources and ideas (Cook & Faulkner, 2010; Newmann & Wehlage, 1995; Wilson, 2007). As such, it is easy to argue that collaborative opportunities such as interdisciplinary teaming offer teachers real and rewarding contexts within which to work and learn from one another.

In addition, collaborative opportunities such as interdisciplinary teaming can be an important contributing factor in teachers' professional learning. Interdisciplinary teams comprise teachers from different subject areas working together to plan, instruct, and evaluate students through a variety of content, instructional strategies, and learning resources (Clark & Clark, 1994; Hamm et al., 2021). Understanding the components and purpose of meaningful collaboration is essential for seeing how interdisciplinary teams can contribute to teacher learning (Warren & Muth, 1995). When teachers have more opportunities to collaborate, research suggests this has a positive impact on pedagogical practices (Haverback & Mee, 2013; Senn et al., 2019).

Definition of Professional Learning Communities

To reiterate, the purpose of this study is to explore and analyze what types of professional learning teachers report when collaborating in interdisciplinary teams. This type of collaboration is often modeled in Professional Learning Communities (PLCs) when they are composed of teachers, representing different content areas, who teach at least some of the same students. The focus on PLCs within the context of the structural format of an interdisciplinary team was to afford the teachers the space for authentic PLC activities, which are described next. Hord and Tobia (2012) outline one particular PLC model that encourages educators to reflect on their

teaching practices and mindset in a community of learners. The purpose of Hord and Tobia's model is to create small communities of learners that "constantly support one another's professional growth" (p. 18). This research-based model includes five dimensions: supportive and shared leadership, shared values and vision, intentional collective learning and application of learning, supportive conditions, and shared practice.

Supportive and Shared Leadership.

An integral part of a PLC is the designated leader, who provides support to the group. By focusing on sharing the leadership responsibilities within the context of the PLC, participants are able to share ideas and decisions (Hord & Tobia, 2012). Supportive and shared leadership centers on the effectiveness of school leaders to implement successful strategies and changes to the professional culture of the PLC. Additionally, leaders develop and create a variety of new programs and practices to become integral parts of a professional learning environment. King (2002) suggests that leaders should make student achievement a high priority by helping teachers with instructional practices and collaborative time. King further asserts the benefits of professional learning by stating that:

> To develop this community, instructional leaders provide regular opportunities for educators to work together on issues of teaching and learning. They allocate time during the school day for conversation and study about effective practices. They model their commitment to their own professional learning by participating in small groups of colleagues who give and receive feedback on their performance (p. 62).

Creating a PLC where teachers have time to work together in creating, planning, discussing, and implementing is an important task of leaders.

Shared Values and Vision

Another important part of a PLC is developing a shared vision around improving student learning through teacher collaboration. Teachers who are committed to working collaboratively to improve student learning often model similar values and visions (Hord & Tobia, 2012). Within the scope of the PLC, teachers collaborate to acquire new knowledge and pedagogical practices. The concept of learning as purposeful and meaningful is often associated with having similar values and vision. Martel (1993) defines the vision of the PLC as a focus on "the quality of life, quality of work, quality of learning—in short, a total quality focus" (p. 24). Similarly, Bond (2013) describes shared values and vision as the collective understanding of teachers to unite, study, and develop collaborative plans to address the stated concern.

Supportive Conditions

Developing a supportive environment is an integral attribute of a successful PLC. Within the Hord and Tobia (2012) model, supportive conditions can be divided into two categories: physical conditions and relational conditions. The physical conditions revolve around the logistics of the PLC (e.g., meeting time, place, materials, and resources). One particular condition that impacts PLC is time or the lack of time. According to Watts and Castle (1993), "time, or more properly lack of it, is one of the most difficult problems faced by schools and districts" (p. 306). With little time for meeting and working more hours, teachers often lack effective opportunities to collaborate with colleagues.

Shared Practice

Hord and Tobia (2012) define shared practice as opportunities for teachers to review, evaluate, and provide feedback and assistance within the PLC. Similarly, Little (1990) describes shared practice as joint work in which teachers "share responsibility for the work of teaching, collective conceptions of autonomy, support for teachers' initiative and leadership with regard to

professional practice and group affiliations grounded in professional work" (p. 519). During the PLCs, teachers act interdependently, collectively sharing pedagogical practices, visiting classrooms, creating instructional materials, and, most importantly, providing feedback to each other. Opportunities to provide open and beneficial feedback influence teachers pedagogically and improve the quality of the PLC.

Interdisciplinary Teaming within PLCs Structures

As previously discussed, interdisciplinary teaming is a pedagogical strategy and organizational structure that promotes collaboration to address students' needs. Interestingly, PLCs also serve as essential components to the organizational structures that emphasize teacher learning to promote student success. Thus, interdisciplinary teaming as well as PLCs are action-oriented and create ideal structures to integrate curriculum, analyze data, examine student work, and increase achievement. For example, the structural component of interdisciplinary teaming provides opportunities for teachers to discuss curriculum, analyze school and student data, plan interdisciplinary units, and provide supports for all students (AMLE, 2010; Jackson & Davis, 2000; Mertens et al., 2010). PLCs offer teachers the opportunity to collaborate and learn from one another to increase student learning and teacher knowledge in a structural format such as an interdisciplinary team setting (DuFour et al., 2013; Hord & Tobia, 2012). Terry et al. (2018) concluded that PLC collaboration enabled teachers to step out of their comfort zones and try new instructional strategies in their classrooms. Furthermore, interdisciplinary teams and PLCs provide supportive structures for teachers to share beliefs and practices, create supportive conditions, and reflect on instructional practices.

Interdisciplinary teams and PLCs both showcase qualities of pedagogical and supportive structures. In terms of collaboration and shared practice, the studies reviewed here reported that

participating teachers experience professional learning by means of constructing learning materials (e.g., common planning). Additionally, within the interdisciplinary structure, teachers emphasized the opportunity to professionally grow through collaborative practices. Thus, it is not at all surprising that the kind of fellowship teachers reported as beneficial involved some form of collaboration, professional learning, and social bonding.

Collaboration and Shared Practice

The practice of collaborating and sharing is one of the most often reported types of professional learning (Cook & Faulkner, 2010; Ellerbrock & Kiefer, 2014; Havnes, 2009; Main, 2008; Reed & Groth, 2009; Strahan & Hedt, 2009; Wilcox & Angelis, 2012). The structure of an interdisciplinary team, bringing potentially disparate individuals together, serves as a learning medium for teachers to collaborate and share practice. Several studies highlight particular aspects of collaborating and sharing practice that played a key role in interdisciplinary teaming activities (e.g., developing and sharing lessons, assessments, and common/collaborative planning time).

In a case study of two Kentucky middle schools, Cook and Faulkner (2010) found that interdisciplinary teams provided a space for teachers to share ideas, units, assessments, and lessons with one another. For example, during the common planning time portion of the interdisciplinary meetings, teachers reflected on practice and sought to improve "their instruction and assessment techniques to provide instruction that was relevant and engaging for the students" (Cook & Faulkner, 2010, p. 10). Additionally, in a study of an eighth-grade interdisciplinary team conducted by Ellerbrock and Kiefer (2014), teachers participated in common planning time to plan "engaging and meaningful educational experiences" for their students (p. 233). Another study of four middle school teaching teams in Australia noted that all

the participating teams planned collaboratively (Main, 2008). As such, common/collaborative planning became an integral component of interdisciplinary teaming, resulting in students benefiting academically and teachers developing a greater appreciation for professional learning through collaboration.

The wider research and conceptual literature suggest interdisciplinary teaming ideally creates a space for teachers to meet collaboratively to discuss and share pedagogical practices. This literature review looked for patterns of shared practice as it pertains to sharing resources, making pedagogical decisions, and planning lessons. For example, an interdisciplinary teacher team of two lower secondary schools in Norway developed a shared practice by establishing "a common ground for their joint enterprise through focusing on the content and process of classroom activity" (Havnes, 2009, p. 167). In another example, a sixth-grade interdisciplinary team was selected to pilot a program called Professional Teaching and Learning Cycle, which focused on collaboratively planning, sharing, and assessing effective lessons to align with state standards. During one interdisciplinary meeting, Reed and Groth (2009) reported how a sixth-grade teacher embraced shared practice by seeking the help of another team member to plan a "lesson with a literacy strategy" (p. 16). This statement is an example of sharing pedagogical practices with colleagues. In a case study of two middle school teachers, Strahan and Hedt (2009) analyzed patterns of professional growth and productivity through interdisciplinary teams. The teachers reported sharing practices and pedagogical strategies in the planning and implementation of an interdisciplinary unit. For example, one teacher concluded, "I love the resources that the literacy program has brought. Just being able to have another support team that you can talk through lesson plans, that is how I tend to do things" (Strahan & Hedt, 2009, p. 10).

Finally, in another study, teachers shared responsibilities and collaboratively made decisions pertaining to interdisciplinary projects (Wilcox & Angelis, 2012).

Supportive Communication

Research studies suggest that teachers often model supportive communication to interdisciplinary team members (Bickmore & Bickmore, 2010; Cook & Faulkner, 2010; Ellerbrock, 2012; Wilson, 2007). In a mixed-method study, Bickmore and Bickmore (2010) investigated two middle school new teacher induction programs. Interestingly, the new teachers were also members of interdisciplinary teams. Regarding supportive communication, the researchers focused on the conversations during team meetings that provided new teachers with novel strategies and ideas to implement in the classroom. For example, one new teacher reported how the team collaboratively provided her with suggestions to help two failing students. Clearly, the supportive communication in the Bickmore and Bickmore (2010) study of interdisciplinary teams provided new teachers with guidance and support during the induction process.

In a previously mentioned case study, Cook and Faulkner (2010) found interdisciplinary team members engaged in high levels of supportive communication. For example, a seventh-grade teacher reported, “I think the communication is very, very strong among us, and I think because of that it has provided safety nets for the kids, and it has been good for us” (p. 7). This example illustrates that teachers recognize the need for dialogue in teams to create a shared understanding of students and team members.

In a study of high schools (grades 6 to 12), Ellerbrock’s (2012) multisite case study examined 67 interdisciplinary team teachers across three different high schools. Supportive communication was found to be an integral part to the interdisciplinary teams. For example, teachers reported different kinds of supportive communication “moves” or strategies that they

found useful within their teams. This included discussing frustrations with one another, nurturing better team teacher-student relationships and providing a sense of "security and connection to a group," eliciting advice about pedagogy and students, and aiding in the "development of a true sense of community" (p. 46–47). Overall, Ellerbrock found an increase in teacher communication fostered a support network among teachers, which, in turn, encouraged their professional learning.

In an action research study of 24 preservice middle level educators, Wilson (2007) investigated the ways in which these prospective teachers participated in simulated interdisciplinary teams for a semester course. Traditionally, teacher preparation programs are designed to prepare and guide preservice teachers to work in school settings (Bond, 2013). For example, according to Hollins (2011), teacher preparation programs develop a "process of learning to work collaboratively in a teacher community [that] begins in preservice teacher preparation programs where candidates are organized into cohorts" (p. 402). As such, Wilson's (2007) action research findings focused on three patterns, one of which was supportive communication. For example, one preservice teacher reported that one advantage of interdisciplinary teaming is "to have fellow educators to be in constant touch" with each other (Wilson, 2007, p. 7). When supportive communication is present, the authentic learning opportunity (e.g., interdisciplinary teams for preservice teachers) creates a communal learning experience. In summary, teachers in interdisciplinary teams demonstrated grounded interactions through positive and meaningful conversations focusing on supportive communication to foster interpersonal relationships.

Affective Dimensions and Social Bonding

It is not surprising that affective attitudes and social bonding were also evident in three studies: Cook & Faulkner (2010), Ellerbrock (2012), and Ohlsson (2013). For the purpose of this literature review, affective attitudes pertain to teachers showing mutual trust and care towards each other. Cook and Faulkner (2010) focused on patterns of interdisciplinary teaming that improved teacher morale. One particular pattern, common planning time during interdisciplinary team meetings, provided opportunities for teachers to socially bond. For example, a first-year teacher reported, "I think the main benefit is that it [interdisciplinary teaming] adds to a family-like cohesion of the team members, so that we're friendly in the hallway, more open to sharing of ideas" (Cook & Faulkner, 2010, p. 7). In another study, Ellerbrock (2012) studied how interdisciplinary teams fostered caring relationships with one another. Teachers reported creating a family atmosphere, uniting together to help one another, and encouraging teacher cohesiveness.

Researchers indicate that family-like, affective dimensions, mutual trust, and social bonding are beneficial attributes in interdisciplinary teams. Ohlsson (2013) conducted a multi-case study on understanding teachers' team learning processes. The research design was part of a development project to compare the teamwork, atmosphere, and dialogue of three teacher teams (A, B, and C) across three schools in Sweden. When researching the different teams, Ohlsson highlighted that both Team A and Team B expressed mutual trust, safety, and willingness to support each other. Likewise, Teams A and B described having administrative support, which strengthened their opportunities to collaborate, thus resulting in positive team cohesion. On the other hand, Team C was "not involved in a team-building process" and partially collaborated but did not fully embrace a mutual trusting and supportive team cohesion (Ohlsson, 2013 p. 302).

Clearly, teachers are more willing to be effective team members when the environment is safe and supportive (Wilson, 2007).

In summary, research reports that professional growth and productivity as it relates to collaboration and shared practice are evident in interdisciplinary teaming structures. The concept of sharing collaboratively in interdisciplinary teams was demonstrated through grounded interactions with positive and meaningful conversations. Similarly, interdisciplinary teams developed affective dimensions and bonds through social interactions. These particular studies embrace the belief in graciously caring for each other's burdens in a cohesive manner. By creating a collective community, individuals learn because they participate in the process (Thomas & Brown, 2011). Finally, teachers in interdisciplinary teams also experienced a collective community steeped in learning and participation. Clearly, professional learning happens when interdisciplinary teams participate, trust, and communicate with one another.

Eighth- to Ninth-Grade Transition

Studying teaming is important at the high school level not only because teams may fulfill important professional learning functions for teachers but also because the middle-to-high school transition is a difficult time for students academically, emotionally, and socially. The transition from eighth to ninth grade has been linked to decreases in self-esteem, poor academic performance, and increased levels of stress and school adjustment (Alvidrez & Weinstein, 1993; Holcomb-McCoy, 2007). Many school districts have implemented several different types of strategies and programs to help the transition, including summer bridge programs, freshmen orientation, shadowing programs, academic and emotional support programs, and college and career field trips (Cauley & Jovanovich, 2006; Corner & Rogers, 2020; Dedmond, et al., 2006; Ellerbrock, et al., 2015). Interestingly, many of the school-based initiatives at the ninth-grade

level do not incorporate collaborative and/or interdisciplinary teaming structures. Clearly, the progression from eighth to ninth grade is an arduous and stressful journey associated with a lack of connectedness and high dropout percentages; however, school-based initiatives might alleviate some of the difficulties.

Lack of Familiarity and Connectedness

A growing body of research highlights the importance of positive social and emotional adjustment for students transitioning to high school. When students enter high school, they are introduced to a larger and more complex environment. Grossman and Cooney (2009) categorize the educational environment changes that new ninth graders encounter as larger physical space, increase in student population, and changes in schedules and routines. These environmental changes can create barriers for students with regards to connectedness and familiarity to high school. Additionally, students are also exposed to many different types of teachers with varying degrees of expectations and teaching styles when transitioning to high school (Ganeson & Ehrich, 2009). In a study of 107 ninth graders, Reyes et al. (2000) investigated the impact of high school transition on completion outcomes. With regards to school perceptions, students reported feeling less support and care from teachers and administrators compared to their middle school experiences (Reyes et al., 2000). All of these new environmental, physical, and relational changes impact students.

High Dropout Rate for Ninth-Grade Students

Many societal factors have contributed to the high levels of dropout rates for ninth-grade students. In the United States, more ninth-grade students academically fail and/or drop out than in any other grade (Abbott & Fisher, 2012; Habeeb, 2013; Haney et al., 2004; Mac Iver, 1990). Nationally, nearly 30% of all freshmen do not graduate from high school (Bangser, 2008).

Additionally, the number increases in low-income school districts to 40% for ninth-grade students (Erickson et al., 2013). The number-one indicator for a child's success or failure in schools is his or her own socioeconomic status. In 2019, of the 11.6 million school-aged children in the United States, 16% were living in poverty (National Center for Education Statistics). This recent growth in children living in poverty has negatively affected students' academic achievement (Villegas & Lucas, 2002). Furthermore, students who come from disadvantaged and minority communities have a greater likelihood to show lower performance on achievement tests, fall into lower tracks, repeat grades or drop out of school, and will become less likely to enroll and graduate from college (Campbell et al., 2000; Coutinho & Oswald, 2000; De Witte et al., 2013; Harvey & Anderson, 2005; Lee, 2002; Lucas, 2001; Swanson, 2003;).

Additionally, students living in poverty have a higher chance of dropping out of school. One report found that high school students living in low-income families were five times as likely as their peers from high-income families to drop out (Chapman et al., 2011). Moreover, Chapman and colleagues state that Black and Hispanic students have higher dropout rates (4.8% and 5.8%, respectively) than white students do (2.4%) (p. 6). Many contributing factors within and outside the school impact student dropout rates. For example, Hale (1998) notes that students who experience the school setting as unsupportive are more likely to drop out. Despite this, progress has been made in schools to help alleviate the socio-emotional, academic, and high dropout rates for ninth-grade students.

Examples of Teaming in the Ninth Grade

Several high schools have experimented with implementing a team structure as a way to address the difficulties of the eighth- to ninth-grade transition. The Talent Development model was developed in 1994 by researchers at Johns Hopkins University with the goal of reforming

low-performing high schools. A hallmark of the model was to focus on ninth-grade academies through the implementation of interdisciplinary teaming with the hopes of reducing student isolation and high dropout rates. Ninth-grade students are clustered into learning communities of 125 students in their own wing and share the same teachers. By 2005, 80 high schools across the country implemented the Talent Development model (Valdero, 2005).

Kemple and Herlihy (2004) conducted a three-year study of the Talent Development model across five urban district high schools. The study measured student attendance, credits earned, and promotion rates of students from three years prior to the implementation of the Talent Development model to three years after. The results of this study indicate that students who participated in the Talent Development model showed significant improvement in attendance, credits earned, and promotion rates. For example, promotion rates in Talent Development schools increased 6% after implementation of the model; during the same period, pre-Talent Development model student promotion rates decreased by 4% (Kemple & Herlihy, 2004). A possible explanation for this might be that implementation of interdisciplinary teaming at the ninth-grade level offered students opportunities to academically succeed in a smaller learning environment.

At Lincoln High School in Lincoln, Nebraska, all ninth-grade students are placed on interdisciplinary teams. Each team consists of 60 to 100 students who share the same teachers and have an assigned administrator and school counselor. Educators meet weekly to discuss, plan, and review student data to ensure consistency among ninth-grade teams (Abbott & Fisher, 2012). Student data is collected every five weeks so that team members can analyze student academic performance and attendance rates. The data is used to help team members create and refine individual student success plans.

Another example of teaming at the ninth-grade level is in the Oakland Public Schools. This 10,000-student urban school district in northern California utilizes freshmen houses or interdisciplinary teams to group all incoming at-risk students. All of the at-risk students are enrolled in accelerated courses and placed on teams in which teachers closely monitor their progress and academic growth (Abbott & Fisher, 2012). Team members participate in weekly meetings to common plan, discuss classroom practices, and collect student data. Additionally, teachers observe one another, collect student work samples, offer constructive feedback, and collectively discuss ways to improve pedagogy. With regards to professional development, Oakland Public Schools developed a mentoring program for ninth-grade teachers in the areas of improving instructional practices and pedagogy. Such examples offer evidence of the benefits of teaming at the high school level and provide insight into some of the structures and/or practices that may mitigate some of the difficulties of the eighth- to ninth-grade transition.

This section has provided a brief summary of the literature relating to interdisciplinary teaming. The literature presents evidence from a wide range of professional texts and empirical studies, which indicate the growing need for professional learning structures such as interdisciplinary teaming. Both the historical and contemporary literature shed light on the professional and collegial benefits of interdisciplinary teaming. Additionally, the use of a PLC model provides a structure of collaborative inquiry where teachers can "work together to identify common challenges, analyze relevant data, and test out instructional approaches" (David, 2009, p. 87).

In conclusion, the difficulty of the eighth- to ninth-grade transition for students warrants an investigation of teaming at the high school level. Collectively, educators who develop and

embrace interdisciplinary teaming at the high school level have a strong possibility of providing better support for students and teachers.

Conceptual and Theoretical Frameworks

To explore what type of teacher learning occurs while participating in an interdisciplinary team, I am drawing on a conceptual framework—the grammar of schooling—and on a theoretical framework—social learning theory. After a brief description of both frameworks, I will explain each on in depth. These two frameworks both provide a lens for understanding the learning resulting from teachers operating in collaborative formats and the process of team formation and development in this particular context. These frameworks provide me with an innovative and creative approach to explore the types of professional learning that occurs in a collaborative structure and the process of forming an interdisciplinary team at the high school level.

The first framework guiding this study is the grammar of schooling, a concept developed by historian David Tyack based on his understanding of institutional theory. Additionally, the conceptual framework of grammar of schooling provides a historical overview of the deeply embedded structures in the American educational system. Through the use of the grammar of schooling, I was able to process how the decades-old approach to organizing schools has not only handcuffed teachers from experiencing different approaches to teaching and learning but also hampered students from benefiting from new approaches. For my research study, the implementation of the grammar schooling as a framework highlighted the structural barriers in high school that deter teacher collaboration across different disciplines.

Throughout my research journey to understand the types of learning occurring in collaboration, I discovered that individuals develop both professionally and personally when

working together in social contexts. As such, the theoretical framework, social learning theory, aligns with my first research question and focuses on collaborative learning and personal growth in social situations. Social learning theory offers a useful framework to analyze how teachers engage with and learn from each other through the interactions they have on interdisciplinary teams at the high school level.

The Grammar of Schooling

In seeking to implement a middle school-type of team structure at the high school level, one important theoretical perspective that could shape this study is what Tyack and Tobin (1994) call "the grammar of schooling." This term highlights the decades-old approaches and unchanged characteristics of schooling in general, though elementary, middle, and high schools have each come to have their own taken-for-granted practices (or, a distinct grammar of schooling at each level). Tyack and Tobin's important 1994 piece focuses on elementary and high schools, and looking across both levels, they define the grammar of schooling as the "standardized organizational practices in dividing time and space, classifying students and allocating them to classrooms, and splintering knowledge into subjects" (p. 454). Classrooms filled with rows of desks, teacher-led instructions, and traditional grading systems are all institutional pillars of the grammar of schooling. Throughout the history of education, new and innovative approaches have made some significant inroads, but the grammar of schooling continues to dominate the landscape of education. Public school systems for the most part have remained stagnant in their approach to teaching and learning (Cuban, 2020; Labaree, 2021; Mehta & Datnow, 2020; Tyack & Tobin 1994).

This study examines what happens when practices that have become institutionalized as a taken-for-granted part of middle schools are placed in high schools. In other words, I investigate

how the grammar of schooling for middle school collides with the grammar of schooling for high school. Therefore, I first briefly outline the taken-for-granted elements of the grammar of schooling at the secondary level, which has remained relatively unchanged for over a century. Then, in the next section, I describe how middle schools and middle school philosophy developed, creating a distinct and unique grammar of school for middle schools.

At the high school level, one common structure is for teachers to be assigned to specialized departments, with students moving from class to class collecting Carnegie units of academic credit—these two elements have been commonplace for decades (Tyack & Tobin 1994). The grammar of schooling at the secondary level continues to persist because of the standardization of stagnant organizational practices. Another antiquated practice is that of grouping and classifying students into various academic abilities and subject areas. The sorting and shifting of students emerged as a cornerstone piece in the grammar of schooling at the secondary level in the Progressive Era. These institutional attributes of the grammar of schooling have become the established features and customary practices of what society deems as "real schools" (Labaree, 2021; Tyack & Tobin 1994).

In the following section, I describe the core features of middle school philosophy. Next, I provide a historical overview of how middle schools were created and developed to have their own unique set of taken-for-granted characteristics (i.e., a grammar of schooling distinct to middle school). Finally, by highlighting several important middle-level position papers, I will describe the historical roots of interdisciplinary teaming and how it became a key part of the grammar of schooling for middle school.

The Grammar of Schooling and Development of Middle Schools

The middle school concept, also historically known as the junior high school, began during the early 1900s as an answer to a variety of historical factors and societal changes. Institutions of higher education, educational reformers, and psychologists collectively advocated for changes in education to meet the needs of young adolescents between the ages of 10 and 14 (Lounsbury 1960; Tyack & Cuban 1995). The structural format for grade configuration changed with the development of junior high schools. Students in the junior high model attended a 6-3-3 configuration with six years of elementary school, three years of junior high and three years of high school.

Initially, the junior high concept focused on being a preparatory school for high school, with students being tracked for either college-bound studies or vocational training (Powell, 2015). Even though the junior high concept focused on supporting young adolescents through enriched curriculum, vocational studies, and personal guidance, there was little difference between the structural formats of junior high schools and high schools. For example, some persistent problems with junior high schools were subject-centered curriculum, inadequately prepared teachers for young adolescents, teacher- and textbook-driven classroom structures, and the tracking of students (Anfara & Waks, 2000; Cuban, 1992; Leipold, 1953). These problems resembled the traditional hallmarks of the grammar of schooling, and, as a result, the junior high school concept remained a scaled-down version of traditional high schools.

Another historical and societal turning point for education was the development of the Great Society under the Johnson administration during the 1960s, which ushered in numerous legislations and policy initiatives aimed at improving societal inequalities. One particular reform was the Elementary and Secondary Act of 1965, which focused on creating equal access to education for students. Unfortunately, middle school-aged children did not receive much

attention in this legislation (Schaefer et al., 2016). Prior to the Elementary and Secondary Act of 1965, William Alexander, known as the "Father of the Middle School," gave a groundbreaking speech in 1963 at Cornell University. In his speech, titled "The Dynamic Junior High School," Alexander initially sought to describe the benefits of junior high schools but realized the benefits were difficult to enumerate. In actuality, Alexander found that junior high schools had become stagnant institutions patterned after high schools (McEwin, 1992). During his Cornell address, Alexander proposed the following: a reorganization of schooling from the traditional 8-4 and 6-3-3 plans to meet the needs of young adolescents, an implementation of new innovative approaches to teaching and learning (i.e., teaming), and educational programs to support students from the beginning to the end of school (McEwin, 1992; Smith & McEwin, 2011). As such, Alexander's Cornell address is often credited as the beginning of the middle school movement.

Throughout the 1970s and 1980s the middle school concept began to change how young adolescents were educated. Additionally, the development of middle school philosophy in the 1970s and 1980s challenged aspects of the traditional grammar of schooling. For example, middle school leaders and scholars advocated for curriculum development that focused on the cognitive and affective development of young adolescents; flexible scheduling and close classroom proximity; teaming of students and teachers; and advisory, nonacademic, and exploratory class periods (Jackson & Davis, 2000; McEwin & Greene, 2011; Powell, 2015). These programs enabled middle schools to develop their own identity and create a clear distinction between the middle and high school experiences for students. As such, the middle school movement during the 1970s focused on defining what unique characteristics would separate middle schools from high schools.

One innovative practice that emerged but did not become widespread was the concept of interdisciplinary teaming. The concept of interdisciplinary teaming in the middle schools was in contrast to the grammar of schooling mentality of high schools, which group their teachers by content in departments. As noted, interdisciplinary teams consist of teachers from different subject areas collaborating together to plan, instruct, and evaluate students in smaller learning communities within the context of the school (Boyer & Bishop, 2004; Clark & Clark 1994; Robbins & Searby, 2013). In 1977, Brooks conducted a comprehensive study of the middle school movement and found that only 15% of schools used interdisciplinary teams in sixth grade, 12% in seventh grade, and 11% in eighth grade (Brooks, 1978). Brooks' study concluded that utilization of interdisciplinary teaming was not a widely used practice in middle schools (Merenbloom, 1979). As such, interdisciplinary teaming became a cornerstone of middle schools and a key feature of the grammar of schooling for middle school during the 1980s even though development had begun in the 1930s.

The historical roots of interdisciplinary teaming can, as noted, be traced back to the core curriculum model of the 1930s. The core curriculum model implemented curriculum integration through common planning and block scheduling (Arhar, 1992). Additionally, the Pontoon Transitional Design model of the 1960s and 1970s also emphasized integrated curriculum through flexible scheduling, common planning time, and teacher collaboration (Clark & Clark, 1992; Georgiades, 1969). It should be noted that the Pontoon Transitional Design model was just one particular design of interdisciplinary teaming and not widely implemented across secondary schools in the United States. Interestingly, there are various systematic processes by which collaboration can be carried out, and various forms of collaboration have been historically implemented under the umbrella of interdisciplinary teaming. For example, integrated

curriculum is a key dimension of interdisciplinary teaming that describes the situation where teachers deliberately join together across disciplines to collectively discuss and plan pedagogy and practice (Malik & Malik, 2011). Likewise, flexible scheduling encompasses a variety of options (e.g., block scheduling) that incorporate time for teachers to meet (Daniel, 2007), which is also a key component of interdisciplinary teaming. As mentioned earlier, one particular cornerstone of interdisciplinary teaming is common planning time. Common planning time is defined as a specific period of the day in which teachers meet to plan curriculum and assessments, share instructional strategies, plan team events, address student needs, and speak with parents (George & Alexander, 2003; Kellough & Kellough, 2008). Thus, common planning time can encourage teachers to collaborate on lessons, assessments, and units because space and time are provided to openly discuss, listen, and share with one another. All of these conditions or moves contributed to the foundational structure of interdisciplinary teams in U.S. schools in the 1960s and early 1970s.

During the 1980s through the 2000s, the implementation of interdisciplinary teaming continued to develop and be promoted by middle school leaders and scholars. In 1989, the Carnegie Council on Adolescent Development published *Turning Points: Preparing American Youth for the 21st Century*, which argued, "Teachers need time to form themselves into smoothly functioning teams. They need time to express ideas, talk about students for whom they share responsibility, describe their successes to other teachers, and seek counsel from colleagues on solving problems" (p. 55). As such, the use of interdisciplinary teaming increased throughout secondary level schools in the United States. For example, in 1992, middle level school leaders reported 57% of their schools implemented interdisciplinary teaming (Mertens & Flowers, 2004). Additionally, by 2000, "80% of middle level leaders reported that some form of teaming"

was used in their schools (Hansen, 2009, p. 35). In summary, these reformers were advocating for more opportunities for interdisciplinary teams to create a small community of learners.

In 2006, the National Association of Secondary School Principals (NASSP) further supported interdisciplinary teaming in *Breaking Ranks in the Middle: Strategies for Leading Middle Level Reform*, outlining nine strategies to improve interdisciplinary teaming. One particular strategy highlighted the need for schools to create interdisciplinary teams that focus on common planning time "to help organize and improve the quality and quantity of interactions between teachers and students" (p. 8). Moreover, the NASSP report stressed that teachers need structured planning time to align curricula across disciplines and address the personal, social, and developmental needs of students. Furthermore, in 2010, interdisciplinary teaming was significantly addressed by Lounsbury (2010) with the Association for Middle Level Education's (AMLE) landmark position paper titled, *This We Believe: Keys to Educating Young Adolescents*. This paper identified the need for interdisciplinary teams to feature "Daily or regular common planning time that integrates the curriculum, analyzes assessment data, examines student work, discusses current research, and reflects on the effectiveness of instructional approaches being used" (p. 32).

Similarly, in 2021, AMLE followed up with the fifth edition of their position paper titled *The Successful Middle School: This We Believe*. This report highlights the fact that successful middle schools need to incorporate organizational structures (i.e., interdisciplinary teaming) to foster purposeful learning and meaningful relationships. To foster the long-term student-teacher relationships, AMLE cites that interdisciplinary teaming needs to "serve as the foundation for a strong learning community (Bishop & Harrison, 2021, p. 51). Based on the recommendations of these four reports, many middle schools began to adopt common planning time initiatives within

the structure of interdisciplinary teams (Anfara et al., 2013). These reports clearly stress that schools should aim to enhance curricular practices and understanding of students' academic and personal needs through collaborative practices like interdisciplinary teaming.

Conclusion

Throughout the 20th century, middle schools established attributes of their own grammar of schooling, such as common planning teams, interdisciplinary teaming, advisory periods, and grouping of students. Periodically, the grammar of schooling has encountered progressive-minded reforms to combat the rigid structure of education. For example, blended schools, team teaching, multiage groupings, and social justice embedded curriculum have all made some inroads into educational settings and garnered media attention. Unfortunately, these innovative reforms have not been widely accepted in traditional school settings, likely because of how certain institutionalized structures and practices are as part of the grammar of schooling (Cuban, 2020; Mehta & Datnow, 2020). The durability of the grammar of schooling continues to persist today, and because these structures are so taken for granted as part of schooling, any change to these structures, such as creating a team structure within a high school, is likely to be difficult, met with resistance, and face a number of barriers.

Social Learning Theory

Interdisciplinary teaming affords teachers a space in which to socially interact and exchange ideas in a supportive environment. Social learning theory, developed by Brown and Adler (2008), provides an innovative way of understanding learning when compared to more traditional conceptions of learning. Social learning theory is based on the "premise that our understanding of content is socially constructed through conversations about the content and through grounded interactions, especially with others, around problems or actions" (p. 18). This

social learning perspective draws directly on Vygotskian theory and focuses attention on the ways in which individuals socially interact during the learning process—which may or may not be tied to a particular task or project (Brown et al., 1989; Brown & Adler, 2008; Brown & Gray, 2008; Lankshear & Knobel, 2011; Thomas & Brown, 2011). Contrary to the learning theory of constructivism, where individuals actively engage and create their own knowledge, social learning theory posits the idea of spreading knowledge through some type of shared practice. Brown and Gray (2008) describe that within a community, the act of shared practice is "trusting the meaning of one another's words and actions" (p. 23). In other words, shared practice is a type of action that transfers knowledge from one person to another within some type of collaborative environment.

For Brown and colleagues, learning often occurs when we least expect it, but it does require regular and ongoing opportunities to pool knowledge and to talk about ideas from different angles. Within the framework of social learning theory, there is no assigned traditional leader; rather, any member of a group who has knowledge or experiences on a particular topic may take on the role of a mentor. Thomas and Brown (2011) describes mentors as individuals who guide the learning by "listening empathically and reinforcing the intrinsic motivation (p. 51). Therefore, within a group structure, new knowledge is shared among members, and mentors help guide the transferring of knowledge. Additionally, group members also become what Thomas and Brown (2011) describe as *peer amplifiers* of knowledge. A peer amplifier is someone who helps to increase someone's learning by "providing numerous outlets, resources and aids" (p. 51). With regards to my study, different participants periodically acted as mentors and peer amplifiers, depending on the topic of discussion. As such, participants in my study interchangeably contributed to the learning process within the group setting by encouraging and

teaching one another about new information, sharing resources and experiences, and providing successful situational examples.

Whereas learning in a constructivist model is singular in format, social learning theory presents a collective experience. Thomas and Brown (2011) refer to the collective as individuals who are actively engaged in the learning process. Generally, collectives are "people who share values and beliefs about the world and their place in it, who value participation over belonging, and who engage in a set of shared practices" (p. 56–57). Interestingly, in the collective structure "people belong in order to learn" (p. 52). This type of learning is in contrast to the passivity of communities in which people learn in order to feel a sense of belonging. As in the case of my study, the participants of the interdisciplinary team sought some sort of togetherness, which transpired in new learning experiences. Thus, the use of social learning theory to examine the types of learning within an interdisciplinary team at the high school level is grounded in the notion that teachers are participating and actively engaged in helping ninth-grade students.

In developing their understanding of social learning, Brown and Adler (2008) drew on a range of studies, including Richard J. Light's (2004) landmark study of college students at Harvard University. By compiling more than 1,600 in-depth interviews, Light discovered that students in small study groups benefited directly from the social interactions that took place within these groups and were "far more engaged and far better prepared, and they learned significantly more" than did students who worked independently (p. 52). This example showcases that learning acquisition does not need to be an individual activity.

In short, this social view of learning exemplifies the belief that learning is socially constructed by means of participating in conversations or working together on a shared task. By simply being a part of a study group, students learn from their environment and encounters.

Brown and Adler (2008) would define these types of interactions as the *demand-pull* approach to learning. Within the demand-pull approach, learning shifts the focus to "enabling participation in flows of action, where the focus is both on 'learning to be' through enculturation into a practice as well as on collateral learning" (p. 30). Thus, Light's work can resemble teachers learning within an interdisciplinary teaming environment.

Related to social learning theory, Lave and Wenger's (1991) work on Communities of Practices (CoPs) is also rooted in Vygotsky's work on the social nature of learning. Wenger, McDermott, and Snyder (2002) describe CoPs as "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p. 4). Simply put, people who share similar interests and interact regularly in a social context construct knowledge. As applied to this study, teachers on an interdisciplinary team are afforded opportunities to meet regularly, which may facilitate their opportunities to learn from each other. Building upon social learning within group constructs, Jarche (2010) explores social learning within the workplace. To begin with, he describes learning as happening naturally through social exchanges and modeling behaviors. That is, learning happens within groups, and "how the group is connected is more important than any individual node within it" (p. 36). Jarche also highlights that social learning and sharing knowledge contributes to individuals becoming better practitioners. Within the social learning model, there is a clear connection between what practitioners learn within collaborative environments and opportunities to bring their learning into practice.

For this research study, using social learning theory is not enough to analyze how interdisciplinary teams working in collaborative formats learn from one another. Whereas social learning theory describes the learning process in social contexts, the grammar of schooling

focuses on the organizational structures that define schools. As such, the use of conceptual and theoretical frameworks detailed the ways in which people work in collaboration and the types of structures and institutional pillars of schooling.

CHAPTER THREE: METHODOLOGY

The purpose of this practitioner action research study was to examine the types of professional learning we as teachers experience when participating in an interdisciplinary team at the high school level. The questions that guided my study were: "*How do we create space for an interdisciplinary team at the high school level? What happens when we do?*" In other words, given the structural challenges for collaborative work in high schools, what types of learning and collaboration may result when we create space for teachers to work in an interdisciplinary team setting? The "we" I am referring to in my study include me and the other members of the interdisciplinary team. This qualitative practitioner action research study included participant interviews and recorded team meetings. I was a practitioner (teacher) in this action research study but I was also a researcher. The duality of my roles enabled me as a teacher to also take on the role of a researcher. With regards to my own learning, I was able to understand my ninth graders through the lens of the other team members. Our shared experiences, struggles, and insights about our shared students made a profound difference in understanding our professional learning within the context of an interdisciplinary team at the ninth-grade level.

In the following section, I first describe practitioner action research and why this method is beneficial for my study. Second, I explain the context of my study, including district, school, and participant demographics. Third, I describe the data collection process and methods as well as how I analyzed the collected data. In the fourth section, I discuss my positionality and trustworthiness, with a particular focus on my role as a participant and researcher. Finally, I discuss the limitations and significance of this study.

Methodological Approach

For the purpose of this study, a practitioner action research design aligns perfectly because I am a teacher-researcher collaborating and studying with other teachers. A key component of this study was to collaborate with teachers to learn from one another and discuss ways to support ninth-grade students. As such, the methodical approach for this study is a practitioner action research model. Because I was acting as an insider, practitioner action research offered an opportunity for me to conduct research at my own site (Anderson et al., 2007). For my study, I use Anderson and Herr's (2009) definition of practitioner action research:

> Action research that is initiated by practitioners, often called practitioner action research, is engaged in the purpose of professional or organizational development/learning. This ongoing professional and organizational learning, it is hoped, will ultimately result in better teaching and learning in schools.

Additionally, for this study, practitioner action research is applicable because a group of teachers voluntarily came together to set agendas, discuss student concerns, and jointly plan solutions to problems. Practitioner action research is one strand of action research, and the common characteristics of action research focus on collaborative work to promote improvement through a reflective and systemic process (Creswell, 2008; Herr & Anderson, 2005; Stringer, 2007). Herr and Anderson (2015) noted that "action research is inquiry that is done *by* or *with* insiders to an organization or community, but never *to* or *on* them" (p. 3). Thus, an action research study is appropriate for my study because the "research is oriented to some action or cycle of actions that organizational or community members have taken, are taking, or wish to take to address a particular problematic situation" (Herr & Anderson, 2005 p. 3–4). Furthermore, the positionality of action research enables the researcher to have an insider perspective in a collaborative

environment "with others who have a stake in the problem under investigation" (Herr & Anderson, 2005, p. 4). Therefore, as an interdisciplinary team we created a space for inquiry to reflect on our practice and expertise and brought about a change through newly obtained knowledge.

I am interested in the reported professional learning of *we* as a team; thus, a practitioner action research study enabled me and the other team members to collaborate within a reflective and systematic process while participating in a Professional Learning Community (PLC). As previously mentioned, interdisciplinary team structures as well as PLCs involve some type of practitioner action:

> Members of PLCs are action oriented: They move quickly to turn aspirations into action and visions into reality. They understand that the most powerful learning always occurs in a context of taking action, and they value engagement and experience as the most effective teachers. (DuFour et al., 2013, p. 12)

Sagor (2009) noted that PLCs offer a perfect avenue for educators to conduct professional inquiries through action research. As such, by participating as an interdisciplinary team within a PLC structure, we as teachers engage as promoters for action.

I studied other insiders who were members of a PLC that modeled an interdisciplinary team. Prior to the creation of the interdisciplinary team, I was a teacher of ninth-grade students who shared similar sentiments with other ninth-grade teachers pertaining to students' difficulties when transitioning from eighth to ninth grade. Even though I created and studied the team, I was an active participant in the group, and my participation influenced my interactions with our shared ninth-grade students. Given that the purpose of this study was to better understand the types of professional learning that teachers encounter when participating in an interdisciplinary

team (i.e., in collaboration) at the high school level, practitioner action research was the best fit. Cochran-Smith and Lytle (2009) note in their book on practitioner research that:

> Action research in education is commonly used to describe collaborations among school-based teachers and other educators…. The efforts of action researchers center on altering curriculum, challenging common school practices and working for social change by engaging in a continuous process of posing, data gathering, analysis and action. (p. 40)

Practitioner action research as described by Cochran-Smith and Lytle (2009) discusses the notion of challenging school practices (similar to those included in Tyack and Tobin's (1994) grammar of schooling) to make changes.

Practitioner action research can also influence and improve personal lives of individuals, organizations, and communities (Stringer, 2007). Additionally, practitioner action research offers an emancipatory aim for researchers to focus on "improving and empowering individuals in schools, systems of education and school communities" (Creswell, 2008, p. 583). A key component to practitioner action research is collaboration among and with others (Cochran-Smith & Lytle, 2009). The team members in this study all share experiences as teachers of ninth graders and the various academic, social, and emotional issues facing ninth graders. According to Freire (1970), "The pursuit of full humanity, however, cannot be carried out in isolation or individualism, but only in fellowship and solidarity" (p. 85). The concept of working together for the greater good and challenging traditional structures is a hallmark of action research. With regards to my study, action research enables participants to act as contributors and insiders as teachers of ninth graders. Additionally, *we* as a team, collaboratively work together to decide on what problems to address. We do this by becoming active in the research to make positive changes for others (Park, 2001). As such, action research is an approach to research in which

"inquirers advance an action agenda for change" (Creswell & Poth, 2018, p. 25), and this practitioner inquiry fulfilled that mission.

Context and Participants

The study was conducted during the 2017–2019 academic years at Carlton High School (CHS) in the School District of Oakwood (pseudonym), New Jersey. The district serves more than 6,800 students in nine schools, including six elementary schools, two middle schools, and one high school. CHS is the only high school in the district and serves a total enrollment of 1,913 students. At the time of the study, the CHS student population was 45% Black, 44% White, 6% Hispanic, 4% Asian, and 1% two or more races. Additionally, about 25% of the students at CHS are considered economically disadvantaged and qualify for free or reduced lunch.

At the time of the study, CHS's staff consisted of 147 full-time teachers. In year one of the study there were five participants (including me) representing social studies, English, math, and science. It should be noted that the team consisted of two math teachers because of the large number of students taking various math courses. In year two, the number of participants changed to seven teachers (including me). I decided to add an extra history teacher and an English teacher to ensure more students in common. Throughout the two years, we were a group of four female teachers and three male teachers, with extensive teaching experience ranging from 12 to 46 years at the start of the study. All participants were white, which is not representative of the majority of the students we served at CHS.

I used the term *team* to discuss the teachers as a group and *participant* or *member* for each individual teacher. The participants for this study range in years within the education profession and predominantly taught ninth-grade students at CHS. Additionally, all participants taught at least two sections of college preparatory/academic courses. The "college

preparatory/academic" course label describes the title of a lower-track class in which there are many students categorized as being in general education; some students assessed as reading below grade level; and other students categorized as receiving special education services, including students with 504 and Individualized Education Plans. It was important that the participants in the study taught college preparatory/academic classes because the study involves teachers who shared students classified as at-risk. Here, *at-risk* is defined as students who are "predisposed to fail or voluntarily drop out of school" (Agada, 2001, p. 81). To determine which students may be in danger of failing or dropping out, we looked at students' grades prior to entering high school. If students received grades lower than a C in two or more core content areas, had below-average New Jersey Assessment of Skills and Knowledge scores, and were identified by the middle school teachers of our selected students as performing below grade level, we considered them to be at-risk.

For this study, I informed the participants that each of them would have a pseudonym to protect their privacy. Some of the participants selected their own pseudonyms, and I created the other names. Interdisciplinary team participants' subject area, grade level, and experiences are l in Tables 3.1 and 3.2.

Table 3.1

Interdisciplinary Team Members: Year One

Pseudonym	Subject	Grades	Experience
Glynnis	History	9, 10	18 years MS & HS
Ernest	English	9, 12	39 years HS

Samuel	Math #1	9, 11	46 years MS & HS
Sally	Math #2	9, 10	15 years HS
Janet	Science	9, 12	14 years MS & HS

Table 3.2

Interdisciplinary Team Members: Year Two

Pseudonym	Subject	Grades	Experience
Glynnis	History	9	18 years MS & HS
Jim	History	9, 12	18 years MS & HS
Ernest	English #1	9, 12	39 years HS
Tara	English #2	9	12 years MS & HS
Samuel	Math #1	9, 11	46 years MS & HS
Sally	Math #2	9, 10	15 years HS
Janet	Science	9, 12	14 years MS & HS

Jim. Jim is a 9th- and 12th-grade social studies teacher. He has over 18 years of experience teaching both social studies and math at the middle and high school level. Additionally, he serves as head men's tennis coach at a local university.

Ernest. With over 39 years of experience both nationally and internationally, Ernest brings a wealth of knowledge and understanding of students from diverse backgrounds. He has taught only at the high school level and has significant experience with the co-teaching model.

Tara. Prior to 2018, most of Tara's teaching experience was at the middle school level. She teaches ninth graders exclusively and has experience in the interdisciplinary teaming model.

Samuel. Samuel is currently a mathematics teacher teaching 9th and 12th graders. He has over 46 years of experience as a teacher, dean, staff developer, and assistant principal. Additionally, he has won numerous awards, including Teacher of the Year, and has authored four books on education.

Sally. Sally has 15 years of experience teaching mathematics exclusively at the high school level. She teaches 9th- and 10th-grade students.

Janet. Before teaching 9th and 12th grades in New Jersey, Janet taught middle school science in Oklahoma for 13 years. She has a wealth of experience with the interdisciplinary teaming model.

Data Collection and Procedures

In order to successfully analyze what happens when teachers collaborate in interdisciplinary teams at the high school level, I conducted a practitioner action research study. For this practitioner action research study, I developed and participated in an interdisciplinary team at CHS. Prior to contacting participants, I started the recruitment process with the approval of Montclair State University's Institutional Review Board (IRB). First, I selected teachers for the study who primarily taught ninth grade, represented a variety of content areas, and had a common teacher collaboration period. Although it was not realistic to expect that team members would teach all of the same students in a large suburban high school, I selected team members according to whether that teacher taught at least five students in common with other team members. Further, it was important that the shared students were those who were considered to be at-risk prior to entering high school, given the focus on the team as a way of supporting potentially struggling students during the eighth- to ninth-grade transition. Next, I created a teacher-recruitment letter (see Appendix A) that detailed the purpose, description, commitment, and benefits of the study. All of the teachers I approached agreed to be part of the team.

Unfortunately, prior to the 2017–2018 academic year, one of the participants resigned and another participant did not have any students in common with the other team members. As a result, I quickly recruited two new teachers during professional development summer days before the start of school. Both teachers immediately agreed because they wanted to be a part of a PLC that involved ninth-grade students.

For year one (2017–2018), the interdisciplinary team consisted of five ninth-grade teachers (English, social studies, science, and two math). Also, in year one, the interdisciplinary team of teachers had at least five students in common who were considered to be at-risk prior to entering high school. In year two (2018–2019), I invited two more teachers to the team. However, due to scheduling challenges in year two, the interdisciplinary team shared 39 students in various dyads and triads of teachers (very few students are shared across all five teachers). The interdisciplinary team met as often as possible during the scheduled weekly collaboration period and met once a month during the district-required Professional Learning Communities (PLCs) meeting time.

Data Sources

As previously mentioned, acting as both a participant and researcher gave me the opportunity to have an insider's perspectives with other insiders (i.e., other participants). All of the interdisciplinary team meetings also known as PLCs were recorded for analysis on the types of teacher learning and collaboration. The interdisciplinary team meetings took place once a month during the scheduled PLC time in my classroom and also periodically at another predetermined time, which was voluntary. During the first year, the interdisciplinary team met as a whole group to informally discuss our shared students, concerns, and/or other lighthearted

conversation topics. Most of the time, these informal meetings were fluid in nature and moved from topic to topic, depending on which participant drove the subject matter.

The meeting structure for year two was different in design. Because I added two more participants to the interdisciplinary team and the types of shared students changed (i.e., the team did not collectively share a single group of students), I created dyads and triads of participants who shared smaller subsets of students. In the dyads and triads, participants recorded their meetings and shared the recordings with me. I transcribed and analyzed the data from years one and two to see what reported teacher learning occurred in their own interdisciplinary teams. In addition to the transcribed meetings, the interdisciplinary team also created their own definition of teaming and used Google Classroom for resource sharing and communication purposes.

Because I conducted a practitioner action research study, a variety of data collection methods enabled me to "focus on the voice and everyday experiences" of my team members (Young, 2006, p. 501). Various types of data collection can be implemented when conducting practitioner action research (e.g., focus groups, participant observation and field notes, interviews, reflective journals, questionnaires, and surveys) (Greenwood & Levin, 1998; McNiff & Whitehead, 2006; Stringer, 2007). However, for this study I focused on three data collection methods: interviews, participant observation (team meetings), and a reflective journal. The use of multiple data sources allowed me to triangulate my findings, helping to ensure the accurate and valid results of the reported professional learning of teachers who participated in an interdisciplinary team. Wiersma (2000) describes triangulation of data as a process of cross-validation to compare information and corroborate findings.

Interviews

An integral part of this practitioner action research is to allow participants to describe and explain their situations (Stringer, 2007). The use of interviews highlighted the participants' views, ideas, and experiences of being members of an interdisciplinary team. In an informally structured format, I asked my colleagues about their experiences, understandings, and implementation of this interdisciplinary high school team. Consistent with the theoretical framework of social learning theory, I planned to code these interviews for instances in which teachers reported learning from their colleagues and the nature of that learning (e.g., about students, content, or instruction. See Appendix B for the interview protocol.) Though interviews are not always included in participatory action research studies, I conducted two sets of interviews with participants during the first year of data collection as a way of better understanding how their prior experiences and beliefs might shape their participation on the team. It should be noted that interviews were not conducted with the two new participants during the 2018–2019 school year.

Participant Observations

Acting as a teacher-researcher as well as a participant on the interdisciplinary team, I observed and wrote field notes (Emerson et al., 2011) during the interdisciplinary team meetings and monthly PLCs. Creswell and Poth (2018) note that the participant as observer involves the researcher as an active participant at the site. I coded my field notes for explicit instances of teacher learning, type of learning, and general topics of conversation. Additionally, I was interested in the exchanges between teachers around any instances of collaboration or uptake of ideas across the team. For example, throughout the team meetings, I noted exchanges between

teachers when discussing various strategies used in the classroom to help students, ways in which teachers deliver content, and resources teachers use to frame their lessons.

Reflective Journal

The final part of my data collection was to keep a reflective journal. The use of a reflective journal became an integral part of my research process. According to Ortlipp (2008), "keeping and using reflective research journals can make the messiness of the research process visible to the researcher" (p. 704). During my first year of data collection, my reflective journal focused on social interactions and team meetings. For example, after our initial team meeting I noted the following:

> Today was our first meeting as an interdisciplinary team. We spent time introducing ourselves since one of our team members is new to the building and a few of us have never really spoken to each other. It is crazy to think that I spend almost 190 days a year with a group of people and rarely have an opportunity to share about my teaching, my students, and me. After introductions I displayed a list of our common students, and we went around in a circle to offer initial insights, questions, and possible concerns for our students. Mental note: next time keep a timer on how long each teacher can speak. One particular team member loves to tell stories and eats up much of the time!

This was particularly evident in my reflective journal entry from August 2018 after I found out my team did not have the requested number of students:

> After two months of emailing, meeting in person, and talking on the phone with three different administrators, I have been given the runaround as to why my interdisciplinary team does not have a certain number of common students. After multiple administrative changes, I am now forced to research the schedules of each of my students and create a

list of common students. I am feeling frustrated and discouraged about truly being able to have an interdisciplinary team in place for the start of the school year.

This example sheds light into the different obstacles I have encountered as a researcher and team member.

Table 3.3 presents the types of data and quantity I have collected throughout my study.

Table 3.3.

Data Types and Quantity

Data Type	Quantity
Interviews	n = 8 (2 per participant)
Observations	8 PLC meetings (~7 audio hrs. of transcribed meetings)
Reflective Journal	Ongoing from 9/17 to 6/19
Artifacts	Google Classroom and other artifacts from team meetings

Data Analysis

Constructivist grounded theory framework was a flexible approach to data gathering. Grounded theory offers an opportunity to interpret data, examine patterns, and look for themes. Charmaz (2014) promotes a social constructivist approach to data gathering that "highlights the flexibility of the methods and resists mechanical applications of it" (p. 13). In other words, it is important to have the space and time to work with the data to develop hunches and leads. Within this approach, Charmaz advocates for qualitative research with an interpretive approach that focuses on the learning and experiences of networks, groups, and relationships. Thus, the use of

constructivist grounded theory as an approach to data collection aligns itself with practitioner action research.

During my two years of data collection and analysis, the types of codes I created changed and evolved. To analyze my data, I incorporated a basic open-coding process (Merriam, 2009; Saldaña, 2016). Open coding is a process of assigning salient data (or, in this case, stretches of transcriptions) with labels and then looking for patterns across codes to develop categories (Saldaña, 2016). Consistent with my research questions, I sought to identify teachers' reported learning experiences when participating on an interdisciplinary team. I was also interested in the relationships *between* interdisciplinary team members. Therefore, my coding was informed by social learning theory. In addition, I became interested in what factors enabled or constrained the development of a middle school-like team in a high school setting, and, through further reading, decided that the grammar of schooling concepts from institutional theory provided insight into this process. Because I drew on a practitioner action research approach, I analyzed my own approach to facilitating the team with Kemmis and McTaggart's (1988) spiral model for action research, which highlight four steps: observe, reflect, plan, and act. I grouped similar categories according to relationships between codes, code frequencies, and underlying meaning across codes and then assigned a descriptive theme (Saldaña, 2016; Merriam & Tisdell 2016). Table 3.4 presents the types of codes that aligned with my research questions and theoretical framework.

Table 3.4

Coding Examples

Code	Definition	Examples

learning together	Two or more teachers working together to learn something new	Janet: That says a lot. What can we do with our ninth graders who do not have parental support at home? How can we advocate for those particular students in a different way? Jim: Maybe there needs to be more attention and focus on our students who lack parental support. We are not talking about our adopted students, we are talking about students that are in our classes and their parents are still in Haiti. It could be that we provide more guidance and focus on what it means to be a ninth-grade student and how to make the right academic decisions.
support systems	A team of teachers providing each other practical and emotional support.	Janet: Well, I mean I really appreciate getting a chance to sit down and talk to other people. When we have a chance to sit around and talk about some of the problems and come up with solutions, I think in the end it'll really help the students achieve more in class.

Throughout the coding and data analysis, themes began to emerge with regards to participants having collaborative interactions through positive and meaningful conversations, which focus on supportive communication to foster interpersonal relationships. Supportive communication emerged as an integral part of the interdisciplinary team. For example, teachers reported different kinds of supportive communication moves or strategies that they found useful within their team. This included discussing frustrations with one another, nurturing better

teacher-student relationships, and providing a sense of a welcoming environment and security to seek advice about pedagogy and students. As such, teachers were more likely to view teacher collaboration positively when they were comfortable with the people with whom they work, had opportunities to share and communicate, and felt a sense of team cohesiveness. In addition to the strong interpersonal relationships fostered among the interdisciplinary team, participants reported learning about individual students during meetings. Perhaps because each participant on the interdisciplinary team was responsible for a different content area, teachers did not report much learning about content but did frequently share instructional and resourceful strategies during interdisciplinary team meetings.

By acting as a teacher-researcher in this practitioner action research study, I was able to witness that the implementation of an interdisciplinary team at the high school level was a rewarding opportunity for the teachers involved. First, the professional development opportunities enabled teachers to understand and participate in effective collaboration with other colleagues. Next, the journaling experiences for me and other interdisciplinary team members created a platform to reflect on practice and team meetings. For example, I noticed that the team members created a family atmosphere, uniting to help and encourage one another. Finally, the purposeful and productive collaboration time equated to a positive work climate.

Ethical Considerations

Prior to the study, I carefully considered the potential risks of studying human subjects (i.e., my team). According to Fraenkel et al. (2015), there are three areas researchers should reflect upon prior to conducting a study: “protecting participants from harm, ensuring confidentiality of research data, and the question of deception of subjects” (p. 65). Before our first meeting as an interdisciplinary team, I ensured that all participants understood the purpose

of my research and their participation requirement. I held informal individual meetings with each participant to discuss their participation level and commitment. I specifically mentioned that their commitment was totally voluntary and to comfortably participate when necessary to their needs and interests. I specifically reviewed the confidentiality of all collected data and emphasized that pseudonyms would be implemented for not only participants but also the school district. By highlighting the confidentiality component of the study to participants with regards to data collection (i.e., interviews, transcriptions, and artifacts), the potentiality of risk was minimized. Lastly, I made it clear to all participants that personal feelings towards students, faculty, and administration would not be included in the research.

Positionality and Trustworthiness

One's positionality is developed from personal experiences in connection with the social constructs that influence those experiences (Herr & Anderson, 2005). As mentioned in Chapter One, I was a middle school teacher for 10 years and benefited from being a part of an interdisciplinary team. If it were not for the change of placement in 2015 to a high school setting, I would not have been interested in this research topic. For this study, I purposely sought out other teachers that had middle school and interdisciplinary team experiences because I did not want to be the only person with knowledge about the concept of interdisciplinary teaming. Additionally, having other teachers with middle school experiences enabled the whole group to hear different perspectives. My own personal and professional experiences have helped shape my research interests on teacher learning in interdisciplinary team settings. As such, validity and reliability were established through a variety of measures because I was both personally and professionally connected to the research topic. To account for potential biases, I included triangulation of data, member checking, the assistance of critical friends, and a reflective journal.

Triangulation of Data

Triangulation is the process of cross-checking and corroborating evidence through multiple sources to see if themes and findings are consistent (Creswell & Poth, 2018; Herr & Anderson, 2015; Merriam & Tisdell, 2016). In this study, I used triangulation to establish credibility by cross checking data and confirming findings. For example, I cross referenced my own personal notes from the interdisciplinary team meetings with the meeting transcription to check for important findings. My own interdisciplinary meetings notes could potentially have my researcher lens biases. Thus, my own notes are insufficient and need to be corroborated with evidence from the meeting transcriptions.

Member Checking

Member checking is a significant component of qualitative research to ensure trustworthiness and credibility of findings (Candela, 2019; Creswell & Miller, 2000; Creswell & Poth, 2018). According to Maxwell (2013), member checks, or *respondent validation*, "is the single most important way of ruling out the possibility of misinterpreting the meaning of what participants say and do and the perspective they have on what is going on, as well as being an important way of identifying your own biases and misunderstanding of what you observed" (pp. 126–127). By conducting member checks, the researcher is able to ensure the accurate portrayal of participants' voices through a process in which participants can either validate or deny the interpreted data, thus adding credibility to the qualitative study (Candela, 2019; Creswell & Miller, 2000; Merriam, 2009). With regards to my study, I sent my participants transcribed as well as coded data for their review. Several participants emailed me back to validate their words and articulate the accuracy of information. Unfortunately, I did not receive responses from three participants.

Also, I had the opportunity to have multiple conversations with team member Ernest because we both had library duty at the same time every day. These informal conversations with Ernest became a reflective experience. I was able to understand his experience within the interdisciplinary team and reflect upon how to incorporate different types of teacher learning within my research. Additionally, periodically I would email the team with reflective questions and consideration to analyze their experiences on the team. These opportunities provided me with another avenue to member check and reflect on my own work as a member of the team (see Appendix C for examples).

Critical Friends

Critical friends provide the researcher not only with validation of research but also with alternative perspectives and protection from potential biases (Foulger, 2010). A critical friend could be an insider like Ernest or a colleague that is interested in your work. When I moved to South Carolina in 2019, my critical friend became a colleague in my new school district. This critical friend works for the district as an academic specialist for middle-level education. This critical friend not only shared my interest in interdisciplinary teaming models but also recently completed her doctorate and was knowledgeable about the process. We talked together frequently during my analysis process about my findings and potential explanations. Periodically, she would check in with me and offer to discuss my findings as well as share different peer-reviewed articles on my topic. Additionally, my dissertation chair has provided me with feedback, support, and suggestions throughout the writing process. All of my critical friends have in some way influenced my writing and presentation of findings.

Reflective Journal

As mentioned, I kept a reflective journal throughout the research process to keep track of what I accomplished, pondered, and felt when analyzing my data. A reflective journal is a strategy that examines "personal assumptions and goals" and clarifies "individual belief systems and subjectivities" (Russell & Kelly, 2002, p. 2). Additionally, Ortlipp (2008) suggests that reflective journaling can make visible to the researcher their own experiences, feelings, and thoughts, thus aiding the research design and interpretation process. For example, I would consistently revisit my reflective journals to check for my own biases and subjectivity.

Limitations

To reiterate, this study focused on the process, learning, and action of high school teachers in New Jersey who took part in the development of an interdisciplinary team. The limitations of this study did not take away from the valuable and rich data, but need to be discussed. One particular limitation stems from the addition of two new participants in the 2018–2019 school year. I did not conduct the same types of beginning and exit interviews formats for these two. Instead, I supplied the new participants with a Google Document of the questions and asked for their responses. By not having the opportunity to interview the new participants, I could have possibly missed additional data and the emergence of new themes from follow-up and probing questions.

Additionally, as mentioned, not all the participants responded to my request to check the transcription and coded data. A possible reason for this could be the timing of the email. I sent the request towards the end of the school year, when teachers are bogged down with final exams and grades. Similarly, not all the participants actively engaged in our interdisciplinary team meetings, which meant their thoughts and opinions were not voiced in the data analysis.

Nonetheless, the detailed and rich accounts from the active participants shed light on the abilities of teachers to learn from each other in particular spaces and create meaningful and purposeful dialogues to address student concerns.

Finally, I may have influenced the direction of the team's activities and conversations in my role as an insider and researcher in ways that could have led to different findings than if I was only observing. Often my role became blurred because I was an insider among other insiders learning, struggling, and collaborating to better the experiences of our shared ninth-grade students.

CHAPTER FOUR: FINDINGS

"*You gotta have the space to do it, so maybe having an office space or classroom just for us to meet. Then having a set time, uninterrupted time, once, twice a week, with an agenda that's already kind of determined before that, but with also some free time to go over things that just kind of come out of the discussion. Having enough similar students that we really could make a difference for the ones that we do share amongst the team"* (Janet, personal communication, November 16, 2017).

The first research question guiding this study is, "*How do we create space for an interdisciplinary team at the high school level?*" To reiterate, the "we" I am referring to is the team. As shown in the quote, to answer this question, I documented our team's interactions and personal reflections throughout the establishment and evolution of our interdisciplinary team, and I analyzed my reflective journal to keep track of our meetings. Additionally, drawing on the work of Tyack and Tobin (1994), I analyzed my data within the framework of the grammar of schooling as the "standardized organizational practices in dividing time and space, classifying students and allocating them to classrooms, and splintering knowledge into subjects" (p. 454). There are structural differences in the grammar of schooling at the middle and secondary levels, making it challenging to place an interdisciplinary team in a high school setting. The grammar of schooling in middle schools consists of institutional structures such as interdisciplinary teaming, common planning, and heterogeneous grouping of students. In contrast, the grammar of schooling in high schools consists of subject-centered departments, Carnegie units, and homogeneous groupings of students.

This chapter is divided into three chronological sections, in which I describe the processes and logistics in creating a space for an interdisciplinary team at the high school level.

In the first section, I detail how the team was established in 2017 by discussing the logistical responsibilities (i.e., recruiting teachers and generating lists of students), several barriers and constraints, and how the team evolved over the two school years during which I collected data for this study.

Year 1: Forming the Team and Holding It Together

In 2017, I started the process to develop an interdisciplinary team model for the ninth grade. The interdisciplinary team approach was modeled after the middle school team structure, in which teachers from different disciplines meet in small learning communities to discuss, plan, and reflect for a certain number of shared students (Boyer & Bishop, 2004; Clark & Clark, 1994; Robbins & Searby, 2013). This particular structure of teachers coming together from various disciplines to discuss their shared students was a new idea for this high school. Even just forming the team in year one presented major challenges that were linked to the grammar of schooling. At the high school level, our teachers were divided into specialized departments; we did not have a team structure, as is more common in middle school, and although we all taught at least some ninth-grade students, we taught only a relatively small number of students in common. However, at least at times, we had administrative support and teachers who were invested in the team.

After procuring the necessary principal and board approval, I started to recruit teachers who might be interested in joining an interdisciplinary team as their Professional Learning Community (PLC) for the upcoming 2017–2018 academic year (see Appendices A and B). Three teachers agreed to be part of the team (English, math, and science). I myself represented social studies. All of the team members taught at least two sections of college preparatory ninth-grade courses. The team was set as we departed for summer vacation. Unfortunately, as summer came to an end, I learned that one of my prospective team members had resigned and another team

member was forced to step down because of a schedule change. Additionally, as I began to search for my student schedules to locate new teachers, I noticed the decreased number of shared students, which is again representative of the grammar of schooling at the high school level, because teachers are organized into subject-specific departments rather than grade-level teams. Thus, I was left with some major holes to fill within the team structure. This was the beginning of my first action research spiral or cycle where I encountered an obstacle (i.e., departing team members) and needed to create a solution. Recall that Kemmis and McTaggart (1988) developed a spiral model for action research highlighting four steps: observe, reflect, plan, and act. Throughout Chapter Four, I will reference different examples of my action research spirals.

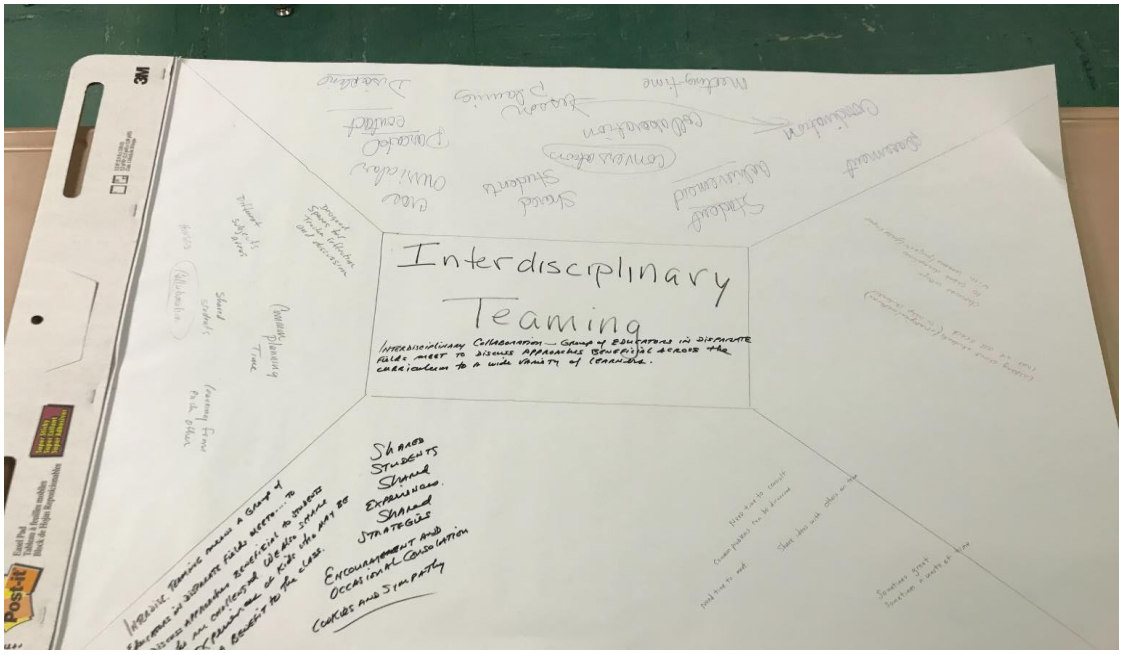
By analyzing my class list on PowerSchool, I generated a list of common students with several new teachers. This is part of the action research spiral of planning and acting. During the new school year orientation, I quickly recruited three new teachers to the team. I replaced the departed biology teacher with a teacher who was new to the school, switched the original English teacher with someone who aligned with a larger number of common students, and added another math teacher to ensure that our team reached as many students as possible. Unfortunately, the number of common students did not meet my original expectation, again due to institutional norms around the structure of high school, which meant we had only 10 common students across all teachers on the team. My first thoughts were that 10 students in common is better than having no students in common. As I noted in my research journal, “The opportunity to collaborate and learn about our shared students, even if it’s only 10, is all that matters. Maybe we can make a difference?” (Research journal, August, 2017).

Even with all the various constraints, the new team was excited to be part of a PLC that focused on shared ninth-grade students. For example, when discussing strategies for supporting

students, one team member expressed, “I really think that the way to approach struggling students is in a small setting like this PLC, where we can focus on our shared students and meet their needs instead of being in one large environment.” The first important task was to create our shared norms and vision for our work. During our initial meeting, the team discussed the idea of meeting twice a month, with one meeting being our district-required PLC time and the other meeting to be counted towards the additional seven PLC hours each teacher needed to procure outside of school time. The meeting time for the second meeting was not initially decided because of scheduling conflicts. Also, as a team we created group norms, goals, and objectives for team meetings for the duration of our PLC time. We were guided by a PLC document from the school that we used to create our own norms and procedures (see Appendix D).

As mentioned, interdisciplinary teaming is one of the most important features for the grammar of schooling at the middle level, but it was a foreign concept to some team members. Therefore, it was important for me to facilitate a common understanding of what a “team” might look like at the high school level. We decided to brainstorm and define the term *interdisciplinary teaming* by conducting a placemat activity. Each member of the team had a quadrant and wrote down all the words and phrases that came to mind when they thought of interdisciplinary teaming. Afterwards, the team collectively created our own definition of an interdisciplinary team using the ideas from the placemat activity. Our definition of an interdisciplinary team: “A group of educators in disparate fields who meet collaboratively to discuss pedagogical approaches and strategies, students’ social emotional issues and insights, and structural programs and practices for a shared group of students.” This definition was printed and displayed in our meeting room to constantly remind us of our goal and role as an interdisciplinary team. (See Figure 4.1)

Figure 4.1. Placemat activity with team definition



With regards to my own pedagogical approach to teaching and learning, this displayed definition highlighted the various components to interdisciplinary teaming. Teaming is more than just a group of teachers who share students, but it is what teachers do in the collective to understand their students that can influence teachers' pedagogical approach to teaching and learning.

Despite initial administrative support and invested teachers, our team experienced some obstacles. The various obstacles enabled me as a practitioner/researcher to be self-reflective and adjust accordingly. Part of the action research spiral is the ability to reflect, adjust, and make changes to original team plans. When I encountered an obstacle, I would adjust and create new plans for our team. For example, in January, I emailed the principal to set up a meeting to discuss opportunities for instructional rounds for our team members. These instructional rounds enabled

our team to observe our shared students in different classroom settings. The following is my email to the principal:

> Hope this email finds you well. Per our conversation on Tuesday, I would like to set up a schedule day for my interdisciplinary team to observe our shared students throughout a school day. Would I be able to meet with you to discuss this opportunity further? Thank you so much. (G. Childress, personal communication, January 18, 2018)

I received no response to the request and instead had an informal conversation with the principal in the hallway, learning that our instructional rounds could not happen. The principal expressed that she loved the idea of having our teachers spend the day observing students to learn more about them in different classroom settings, but scheduling and, most importantly, finding the class coverages would be an arduous task. Unfortunately, our team did not have the opportunity to observe students in different settings and we missed a chance to learn more about our students. The durability of the grammar of schooling in high schools is thus demonstrated in the difficulty we had in finding class coverage for just a few teachers, given the rigid schedule of seven class periods per day and no common planning time.

Another barrier focused on the inability to collectively meet as a team for the additional 30 minutes a month. After our initial meeting in September, I sent an email to the team about our additional meeting time. In the email, I thanked the team for their willingness to meet for 30 extra minutes a month and stressed that the time would count for the district-required additional professional development hours. I ended the email asking for dates that would work best for everyone. The responses to the emails indicated that there would be some difficulty in scheduling an additional time that all team members could attend. The math teacher could meet only on Fridays and the science teacher only on Wednesdays. With this new information, I

decided that our additional team meeting day would rotate every month to either Wednesday or Friday to accommodate partial attendance from the teachers with conflicting schedules. This example strikingly demonstrates what I was up against in challenging the grammar of schooling within high school with the daily schedule, lack of common planning time, and specialized departmental organizational structure. Schedules were so rigid and inflexible, even among teachers who taught primarily ninth grade, that it was almost impossible to find a time to meet.

The team faced another time barrier in the lack of meeting time. Our PLC meeting time in March was cut short due to a quick faculty meeting and PLC check ins. These meetings were simply a spot check to see if teachers were meeting. An example of an email correspondence regarding this issue:

> Good morning! Our PLC, Interdisciplinary teaming in the ninth grade, is working tremendously to meet the needs of our shared students. We have met with parents, guidance, and admins to address our academic and socio-emotional concerns that many of our shared students encounter daily. Teachers are reporting changes in our students, but our work has only begun! I am asking if we could meet more. This PLC has become more than just a PLC and is actually a functioning team that desires to meet more often. In lieu of the next gathering of the PLCs in the cafeteria, could this team meet for the whole time in our regular spot? We lose out on precious time when we meet collectively as a staff and we are only left with 20-30 mins. Thank you for your consideration! (G. Childress, personal communication, March 10, 2018)

Three days later my email request was forwarded to an assistant principal, and I received no response to my request. Consistent with the organizational structures of the grammar of schooling in high schools, our meeting times as a school faculty were primarily mandatory in a

whole-school format. As such, our team decided to attend the faculty meeting for 30 minutes, which left us with about 20 to 30 minutes to meet. Interestingly enough, our PLC was given administrative approval to meet more than the scheduled allotted time, but for this meeting our team had to abide by the requirements of mandatory faculty meetings. This type of time constraint created limitations on our meeting times and showcased a lack of support from the administration. The team felt unsupported in the work we were doing to increase our knowledge of shared students and provide support for their successes in the ninth grade. At our next meeting the team discussed the lack of value for our PLC time. Team members Samuel and Ernest expressed their frustration towards the school administration and the lack of support for PLCs. Samuel even noted how administration treats PLCs as "garbage" and cares only about having faculty meetings. This simple yet powerful example demonstrated how the team felt about losing our PLC time for a faculty meeting. We as a team trusted that our administrative staff valued PLCs and time, but that simply was not the case.

Even with different barriers and constraints, the team wholeheartedly agreed to continue to work together the following year as a PLC with a goal of having more shared students. As the school year came to an end, I spoke with the principal to ensure that our interdisciplinary team would have an increase of shared students for the upcoming school year. She promised me that the team would have more students and would even make sure of it by discussing our pilot program with the new director of guidance.

Summer 2018: The Turning Point—Administrative Turnover and Poor Communication Lead to Eroding Support

As the summer of 2018 started, things began to unravel at the high school. On June 30th, all district employees received an email explaining administrative reassignments for the 2018–

2019 school year. My former principal, who was extremely supportive of our team, was moved to the Central Office as a principal on special assignment to work on district-wide initiatives, and an interim principal was put in her place. Now, knowing I would have a new principal, I quickly emailed the interim principal on July 3rd to schedule a meeting to discuss our interdisciplinary team pilot study. In my initial email, I introduced myself, explained my research interests and data with regards to interdisciplinary teaming, explained how our team's work would assist with the ninth-grade transition and thus align with other district initiatives, and that I hoped to continue the team during the 2018–2019 school year. I did not receive a response to my email over the next three-week period.

Enabling and Constraining Conditions

After several weeks of no communication from the interim principal, I decided to email her again on July 24, 2018, with a tone of increased urgency. I finally received an email invite to meet with her on July 31, 2018. This email invite did not come from the principal but rather her administrative assistant. During our initial meeting, she was excited about the team approach in the ninth grade and encouraged me to reach out to the director of guidance to secure 10 to 15 common students among our team members. She also said she would reach out to the director of guidance on my behalf as well. I mentioned to her that the previous principal promised me that she would make sure the director of guidance knew about my pilot study, but things changed quickly after she was abruptly replaced. I left the meeting with a feeling of hope that the new principal would reach out on my behalf and the team would have more students in common.

The next day I emailed the principal to thank her for her willingness to meet with me and support us in our pilot study. I also emailed the director of guidance to discuss ways in which we could collaborate to secure 10 to 15 students for our team. Since it was late in the summer

already, I knew this would be an arduous task for the director of guidance. After my initial email asking for help from the director of guidance, I received a response which indicated that he was never made aware of our interdisciplinary team from the departing principal. Additionally, he stressed that he was unable to help with scheduling students because the schedules had already been finalized. This news left me completely distraught and needing to figure out a new action plan. Here again, I experienced an action research spiral in which I needed to evaluate, reflect, and create a new structural format for our interdisciplinary team.

I decided to spend the next few days at school looking at the schedules of all my students to see if there were any common students among all the team members. Here is another example of my action research spiral. Of all my 136 students, only *one* student was common among all four key team members. Since the grammar of schooling at the high school level structurally does not support interdisciplinary teaming, I needed to develop a new approach. I decided to create smaller subsets with the other team members. For example, the 14 students I had in common with the biology teacher would be a dyad team of two teachers. The thirteen students I had in common with the English teacher would be another dyad team. Additionally, I created smaller triads of teachers with students in common between me (social studies), English, and biology. Even though I created these dyads and triads of shared students, I purposefully included the team in the different functionality of our meetings. On August 27, 2018, I emailed each one of the team members to make them aware of the changes and to see if they were still interested in being a part of the team. In my email to the team, I highlighted the minimal number of students in common (39) and explained my idea of the dyads and triads. Additionally, I emphasized that the dyads and triads enabled the team to discuss our students in small subsections, which might collectively lead to richer and more purposeful conversations. All of the members were on board

with the new changes in the team meetings. I even received an email back from one of the math teachers that stated, “You’re amazing!! Sounds great, Glynnis!! Plus—I love the terms triads and dyads!” As such, the new format for the 2018-2019 school year would not look like a traditional interdisciplinary team, but the team was willing to try out this new approach to teaming.

Year 2 (2018–2019): Limping Along but Surviving

“I was hoping that if we can nail down a group that when we meet we could just split into subgroups and just concentrate on those students that we have in common then rotate into a new subgroup. That’s why I was trying to have another science, math, social studies, and English teacher to join our team” (G. Childress, team meeting transcription, September, 2018).

As year two began, we added a new English teacher and a social studies teacher to our interdisciplinary team. These two teachers offered middle as well as high school experience and were familiar with the functions of interdisciplinary teams. I recruited these two teachers to help with the decrease in the number of common students. At our first meeting, I explained the new structure to the team.

Sally: They [administration] didn’t give us a team?

Glynnis: They promised me a team and more students, but that didn’t happen. So I have to make organic teams where teachers in twos and threes share similar students.

Sally: Okay.

With the addition of two new teachers, I was able to add more students in common, but in smaller subsets. Our team meetings now had a new format. We would begin our meetings with an overall discussion of our concerns and highlights of ninth grade in general. Then we would meet in our various subgroups to discuss our students in common. For example, three teachers (social studies, science, and English) met in a smaller group to discuss their four students in

common. Each subgroup had a rotating facilitator to keep notes and time. By meeting in smaller subgroups, we were able to discuss our shared students in a more effective manner instead of in a larger group setting where some teachers did not share the same students. This way, the team made the best of the new collaborative format working to learn more about their students and from each other.

Looking Across Two Years of a High School Team: What Obstacles Did We Encounter?

Subsequently, this new collaborative teaming structure was also subject to several difficult roadblocks that linked to the grammar of schooling. For example, the team did not have a regularly scheduled meeting time. Since our school did not support PLCs, several meeting times were canceled and replaced with faculty meetings. “I am so frustrated this week that our PLC time was canceled because of a faculty meeting.” (G. Childress November 28, 2018). It was disappointing that because our school did not purposely embrace PLCs, other groups did not take PLCs seriously. For example, when an administrator stopped by, she seemed surprised that we were actively discussing ways to support incoming ninth graders, as she said the other groups were not doing anything, and even that one person was “taking a nap.” This example highlights the fact that our school did not emphasize the importance of PLCs, thus resulting in administration checking on groups and noticing the lack of professional learning.

Another example of a roadblock to the teaming structure was having a lack of time to meet to discuss the few students in common, which resulted in the rotation format creating less time to collaborate as a group. As mentioned, interdisciplinary teams serve between 100 to 120 students between four core area teachers (English, social studies, science, and math) (Alspaugh & Harting, 1998). Unfortunately, due to the barriers we encountered and the secondary level organizational structures of the grammar of schooling, our team shared fewer common students,

which resulted in difficulties finding time to collaboratively plan, know our students, and meet with parents. In a personal communication, Janet noted:

> You have to actually sit down and compare your curriculum, plan activities, because you might have things you do already. Especially if you're talking to multiple people, not just between two different teachers, but a whole team, that would take quite a bit of time to work through together. There was just less and less time that we could collaborate.

Janet's comments about having less and less time to collaborate mirrors the sentiment of many teachers. By having the opportunity to learn from one another, teachers can generate new pedagogical strategies, engage in professional conversations about student learning, and create a community of learners. Coupled with the notion of lack of time to collaborate, Sally also felt frustrations in not being able to do peer-to-peer observations as she stressed in her interview:

> I mean, seeing how the kid is in other people's classes but then being observant and saying, "Okay, I think this would help them with the doubting. I think this is what would help" or just being able to sit and have more conversations with them. This is where I get frustrated and then I just don't know what to do or maybe who to involve. And just observing each other and talking to them, maybe getting more people involved and saying, "Here's what I've done with this kid. I don't know what else to do. Do you have any suggestions?"

The frustrations that Janet and Sally felt regarding lack of time to collaborate, peer-to-peer observations, and whole-team discussion aligned with the frustrations of other members of the team as well. Ernest mentioned similar sentiments about not having enough time to co-plan and visit each other's classrooms:

> It's also useful to see our shared students in other classroom settings who may have strengths in areas that we may not typically see in our own classrooms. The difficulties come from the fact that teachers all deal with their own classrooms, and no time is allotted for us to visit each other's classes and see what happens. That would be ideal, but it just doesn't happen because of the time crunch we all feel.

Overall, every team member mentioned the biggest obstacle our team encountered was limited time to meet and lack of time to collaborate. The traditional teaming model often enables teachers to have a shared common planning time to develop interdisciplinary units, discuss student concerns, and analyze data (NMSA, 2010). This striking example demonstrates our frustrations with the grammar of schooling at the secondary level because of the rigidity in organizational structures. Unfortunately, for our high school setting, the concept of common planning was nonexistent. It should be noted that teachers did have a planning period, but teachers often planned in isolation in their classrooms with limited collaboration time.

In 2017, my high school tried to implement a common planning period for all ninth-grade teachers, but that did not work out because many of those teachers also taught other grades. Out of all the team members, I was the only one who exclusively taught ninth graders. For me, this was very frustrating because I was hoping that our team would be able to meet more often than the scheduled PLC times allowed. This sentiment of frustration was also shared by Samuel. When discussing the collaborative schedule for ninth-grade teachers, Samuel commented on how the school did not plan accordingly and the common planning "did not materialize as they [administration] thought it would." The concept of common planning time for a certain grade level (i.e., ninth grade) makes sense, but if the logistics are not thought out and planned, certain school-based initiatives fail.

Another obstacle we encountered as a team was the lack of students in common and the constant rotation to discuss the few students that we had in common with each other. As mentioned, traditional interdisciplinary teams have about 100 to 120 students in common (Alspaugh & Harting, 1998). The organizational structure of interdisciplinary teaming is an integral part of the grammar of school in middle schools. Our team as a whole shared *one* student in common, but 39 students overall with the subset model. This was a major obstacle, and it resonated with the team members. Both Ernest and Janet mentioned that an obstacle we faced as a team was not having enough shared students. The lack of shared students definitely influenced the team meetings, but we felt as a team we could still improve as teachers because at least we were communicating and collaborating.

What, if anything, have you learned from being on the team? "We need more conversations between teachers who share struggling students." To an outsider looking in, our interdisciplinary team does not model what a traditional interdisciplinary team looks like, but we made the best of the situation. As mentioned, traditional interdisciplinary teaming is typically made up of a core group of teachers that teach the same subset of students in a particular grade with the intended benefit of having greater communication and collaboration among teachers to help their shared student population (Thompson & Homestead, 2004).

Despite these limitations**,** this new format created spaces for purposeful conversations about teaching and supporting shared students, as will be described in detail in the following chapter. The team members were now discussing students and concerns in dyads and/or triads. Additionally, these smaller subsets of teachers were hyper-focused on three to five students. The rotation model had its own benefit because teachers talked to each other in multiple configurations and did not get bogged down with one teacher taking up a lot of time because

teachers kept rotating. When we broke up into dyads, the following exchange between two teachers illustrates how we were able to discuss structural commonalities in a pair-share format instead of in a larger group setting.

> Jim: I've had a deficiency with my period three class. I decided to email and call several parents of kids who are struggling academically in my class and kids who are causing problems. In doing that I noticed that some of the kids that are really struggling, their contact is not mom; it's not a dad; it's somebody else. And that tells me that this kid is even more at risk.
>
> Janet: Isn't it sad how the family structure is all over the place?
>
> Jim: Right. These kids are being raised by somebody who's not necessarily able to provide the resources to properly raise a kid.
>
> Janet: That says a lot. What can we do with our ninth graders that do not have parental support at home? How can we advocate for those particular students in a different way?
>
> Jim: Maybe there needs to be more attention and focus on our students who lack parental support. We are not talking about our adopted students; we are talking about students that are in our classes, and their parents are still in Haiti. It could be that we provide more guidance and focus on what it means to be a ninth-grade student and how to make the right academic decisions.

While Janet and Jim could have used more asset-based language to describe students' families, this excerpt succinctly summarizes the opportunities for teachers to have a space to discuss and learn from one another. This then allows the smaller subgroup to work through a beginning plan to help a certain population of students. Our team structure did not model a traditional interdisciplinary team approach. However, this structure worked for us and provided

meaningful spaces for collaboration. There were also benefits from how our team was not structured as a traditional middle school team; traditionally, the middle school interdisciplinary team format often requires teachers to discuss housekeeping items (e.g., student issues and team activities) with little time and effort dedicated to instructional practices, student concerns, and teacher collaboration. Instead, our team was able to move quickly in our meetings in discussing the needs of our shared students.

Conclusion

Overall, years one and two provided our team with an insider look at how change can be difficult to implement in a school structure. Looking across both years and the whole development of the team, the consistency of teachers, student's alignment to teacher's schedules, and transient leadership contributed to difficulties in the development of an interdisciplinary team. Subsequently, across the two years of working together, the team members developed a camaraderie and genuine care for each other and the students we served. As described in more detail in the next chapter, by collaborating and communicating when time was allotted, the team focused on the needs of our shared students and ways to support them. By modeling certain organizational structures (i.e., interdisciplinary teaming) from the grammar of school in middle schools, our team was able to develop our own unique version to work within the confines of the grammar of school at the high school level. However, because of the traditional, institutionalized high school structure, we were hamstrung in our efforts to form a meaningful team that could meet regularly. We therefore had to reimagine and restructure what an interdisciplinary team might look like at a high school that did not allocate the time and space for productive collaboration. This particular model at the high school level could truly benefit students and

teachers in recognizing, creating, and implementing strategies to help students academically and socially.

CHAPTER FIVE: FINDINGS

"Ninth graders need more attention, adjustment, and refocus on what it is to be a student. They're coming from middle schools which are smaller environments where they know the same teachers and students, and they see them every day, and are then dropped into 2,000 students and three floors" (G. Childress, personal communication, May, 2018).

As described in the previous chapter, the first research question for this study was, "*How do we create space for an interdisciplinary team at the high school level?*" The second research question guiding this study was, "*What types of teacher learning and student support may result from creating space for high school teachers to work in an interdisciplinary team setting?"* As described in this chapter, when we created space for interdisciplinary teaming, these conversations led to sharing and taking up a variety of student support strategies that may not otherwise have been put into place. Many of the student support strategies were geared towards the goal of alleviating student anxieties, academic difficulties, and the uncertainties with the eighth- to ninth-grade transition. This chapter describes the student supports that resulted from the teacher learning that happened in our conversations. In other words, my analysis of the team's conversations and exchanges led to not only purposeful solutions but also reflective teacher learning practices. The underlying themes for our team was the notion of learning from each other, sharing strategies and ideas, and putting these concepts into action. Additionally, drawing on social learning theory (Brown & Adler, 2008; Brown & Gray, 2008; Brown et al., 1989; Lankshear & Knobel, 2011; Thomas & Brown, 2011), I analyzed my data to understand how our interdisciplinary team socially constructed knowledge about the ninth-grade students through grounded interactions and conversations around student- and school-level problems.

Simply put, everyone on our team grew professionally through our conversation and organic interactions.

Student Advocacy

Throughout the first year, our team experienced areas of success conducting parent meetings, advocating for students, and learning from one another. These successes enabled our team to collaborate, learn, and help each other. The following story, about a student named Kaylyn (pseudonym), is an example of successful student advocacy. It should be noted that this case is about a student who was placed in an honors class and struggled both academically and emotionally. Interestingly, a structural component of the grammar of schooling for the secondary schools is to place students in rigid tracking levels in most content areas. Because of this, it can often be difficult to make individualized accommodations for students within particular levels, as the primary decision made about how to meet students' needs is the decision about their level. Based on research, there are many harmful effects of tracking (e.g., Oakes, 1986), and it can often be more helpful for a student to remain in a more challenging level. However, in this case, the team decided to advocate for this student based on her individual needs. The grammar of schooling with regards to tracking is often harmful, but not in this case.

In the fall of 2017, Kaylyn began to show signs of frustration with her academic abilities in Algebra I Honors. Kaylyn was a student on our team, but shared teachers only in English, history, and science. It should be noted that Kaylyn was in all college preparatory courses except for Algebra I Honors. Kaylyn immediately began to struggle with this one honors class. In our first team meeting, we discussed our shared struggling students. Consistent with social learning theory, our team identified shared problems before discussing possible solutions and learning from each other's ideas. As we discussed Kaylyn's academic progress in our classes, Ernest, the

English teacher, shared with the team a conversation he had with Kaylyn: “Kaylyn came up to me after class the other day very frustrated with her grade in Algebra I Honors. She is currently failing and is nervous about disappointing her mom.” Ernest mentioned that her mother is an immigrant and quite possibly not aware of the procedures to change class levels. Collectively, our team decided to research Kaylyn’s previous grades from middle school and her state assessment scores to determine if an honors class was the best placement for her at the moment. The data suggested that Kaylyn’s eighth-grade math scores were average, and she scored below proficiency on the state assessment. The team continued to brainstorm ideas to collectively support Kaylyn both academically and emotionally.

With all of this new information, I decided to take the lead to meet with Kaylyn’s school counselor to discuss ways to support her (e.g., level change or extra help). During my conversation with the school counselor, I was informed of a new rule that stated no students could level down. Feeling frustrated, I brought this information back to the team to see if we could think of a new plan for Kaylyn. Additionally, at this time the team discussed meeting with a school administrator about Kaylyn’s desires to level down in Algebra. After another meeting with Kaylyn, Ernest discovered that she was going to fail the first marking period and that she was not able to go for extra help since she has to go home after school to help with her younger brothers and sisters. Kaylyn’s mother agreed that her daughter should move down a level but did not know how to navigate the channels of schedule changes. With all the information we gathered, Ernest and I scheduled a meeting with the assistant principal to discuss a possible schedule change for Kaylyn.

During our meeting with the assistant principal, Ernst and I discussed Kaylyn’s situation and her desire not to be in Algebra I Honors. The assistant principal inquired whether Kaylyn

had spoken to her school counselor and whether her mother was on board with Kaylyn leveling down. We told the assistant principal the story of how the school counselor mentioned a new rule that students could not level down in any courses. We offered her previous grades and state assessment scores as data to highlight the need for an adequate placement. Additionally, we informed the assistant principal that Kaylyn's mother agreed to the level down request. It was at that moment that the assistant principal called the school counselor and recommended a level change based on the team's recommendation and supplemental data. Since this request was coming from an administrator, the school counselor agreed to fill out the paperwork and begin the process to have Kaylyn's schedule changed to a college preparatory Algebra I course with a teacher who was on our team. After the level request had officially been changed, Ernest and I reflected upon this example of student advocacy. The following is our conversation:

> Glynnis: I really thought we made some inroads with getting Kaylyn's schedule changed.
>
> Ernest: Big time. Kaylyn's a success story. Kaylyn is definitely gonna graduate.
>
> Glynnis: Right, Ernest. That's the point. I don't think it would've happened if it weren't for the team.
>
> Ernest: And she would've been much more depressed if she were stuck in a class where she couldn't understand the work.

This example of student advocacy demonstrates a true team effort approach to helping a student in need. Every step in the process contributed to a positive result for Kaylyn, from the initial meeting pinpointing areas of concern to listening to Kaylyn relate her struggles and discussing the situations with the school and assistant principal. The role of the team was instrumental in advocating on behalf of the student. Additionally, when I followed up with Sally, Kaylyn's new Algebra teacher, she shared that Kaylyn was doing great and was participating and even helping

other students. Sally particularly noted that Kaylyn's ability to help other students translated to a more positive academic and socio-emotional classroom experience. Sally, just like Ernest, recognized the strengths in Kaylyn and believed in her academic abilities.

This student advocacy example highlights social learning theory because three team members were actively engaged in learning, sharing, and acting on the behalf of Kaylyn's needs. The use of social learning theory is evident because several team members initially discussed their concerns regarding Kaylyn's academic placement and social well-being. This is an example of what Brown and Adler (2008) would highlight as grounded interactions around a problem. The problem was the misplacement and social-emotional wellbeing of a student. But through social engagement around Kaylyn's needs, team members were able to use resources and act on her behalf. It is within these conversations that teachers socially constructed knowledge about Kaylyn and acted on her behalf. Having the ability to advocate for Kaylyn and placing her in a team members' class ultimately helped this student.

Enhancing the Freshman Experience

Throughout our two years together, our team consistently discussed ways to help students through the eighth- to ninth-grade transition. Our team focused on what our ninth-grade students needed to be successful in high school and brainstormed ways to improve their earliest high school experiences. We constantly kept our ideas student-first with a focus on the diverse populations of students we served in our school district. At the end of the two years, we created and presented our ideas to the faculty at a professional learning community showcase. The following section focuses on the different areas we discussed and noticed with our ninth-grade students. Within these observations and discussions, we brainstormed and created possible solutions to help our ninth-grade students with navigating and understanding high school.

Supporting Students: Understanding a GPA

The team homed in on what supports need to be in place to help and enhance the ninth-grade experience. An analysis of our team meeting transcripts demonstrated that our ninth graders consistently struggled with navigating all the academic requirements, jargon, and logistical components of high school. One particular area of interest focused on academically supporting our struggling ninth graders. Throughout our conversations, we discovered that collectively, our shared students struggled with the amount of schoolwork required compared to middle school, time management, and how to acclimate to high school. Most of these conversations revolved around our own teacher frustrations with the lack of systematic school-based initiatives (e.g., study halls, ninth-grade orientation, common time for teachers). But also, as a team, we collaboratively discussed solutions to struggles among our shared students. The following exchange illustrates the way one of the team members explains how ninth-grade students do not realize the importance of their academics in the freshmen year.

> Jim: There's a lot of people [ninth graders] with no real plan on how to pass. Like I have one kid who didn't take the test. He was absent that day. Every day, if he didn't take the test, he was coming to see me. Coming to see me, coming to class, not singling him out or anything like that, until finally I said "Are you going to take the test?" He was like "Nah." And that was over two weeks ago at this point. I said to him, "You know that's a zero then, right?" "Yeah." So, there's no plan to be successful. So, when I came back that day, I spent a day teaching them how to calculate their GPA [Grade Point Average]. Explaining to them, showing them how, if you failed a class…I had an actual transcript; I just had the name removed; you saw that person failed the class. You see them further

down where they took it over summer school and they got a B. That doesn't change their GPA.

Sally: What do you mean?

In this exchange, Jim explained to Sally in their dyad how ninth-grade students often do not understand the concept of a GPA and its relevance to grade promotion. Sally needed clarification on how and why Jim explained the concept of a GPA to his ninth-grade students. Periodically, team members would question a particular practice and/or ask for clarification. This type of conversational pattern occurred several times during our two years together as an interdisciplinary team. The following is an excerpt from their conversation:

Jim: Well, whatever you get in summer school, all you do is you get credit for it and the new grade is not averaged into your GPA. Your transcript in college shows that you failed. It does show that you replaced it with a grade, but that does not ever change your GPA. The kids don't know these things.

Sally: Right.

Jim: Then, I also show them, okay. This person had a 2.2 GPA freshman year. They want to go to college. In order to go to a decent college, they need to have a 3.0. What do they need to get next year to come through the 2.2 from freshman year?

Sally: Yeah.

Jim: And I show them how to calculate that. And "Pow" (Sound effect)

Sally: Right.

Jim: And the kids will see like, "Wow. You know, no one taught me this." I showed them after their freshmen year, and getting your grades up to a 2.8. What do you need to get to get a 3.0? And still, they realized how much harder it is.

Sally: It gets harder.

Jim: Because now more classes have been covered. So it's just math usefulness, but to see so many of them thought freshman year doesn't count.

Sally: No, it's the most important year.

This simple yet effective practice of explaining to ninth graders the importance of grades and calculating a GPA is a good example of our interdisciplinary team learning from each other on the importance of a GPA right from the start of ninth grade. Additionally, the fact that so many freshmen think this first year does not count really struck a chord with the team, and we continued to discuss the importance of freshman year with regards to homework and misplaced students. In a follow up meeting, the team circled back to Jim's explanation about the effect a failing a class has on a student's GPA. Several team members made note of Jim's example in their classes:

Janet: You mentioned that in our last meeting, and I brought that up to my students and they were like, "What?"

Sally: I did, too. I told them, if you go to summer school, and you get a 47 average in here, that's what you have: a 47. Maybe a 50. And the F never gets replaced for your GPA. All it shows is that you did take it in summer school, and what your summer school grade was, but that summer school grade does not count towards your GPA.

The teacher referenced Jim's example of the concept of a GPA and failing grades with his ninth-grade students. Two teachers used Jim's example in their classes and recognized the impact it had on the students. The concept of explaining their GPA to ninth graders was something none of us had really thought about. Listening to Jim's explanation of why he discusses the GPA with ninth-grade students enabled our team members to not only learn something new but also model

that concept with their classes. As mentioned in Chapter Two, this example highlights Thomas and Brown's (2011) idea of *collective*, in which individuals are active in the learning process based on their needs and interests. Both Janet and Sally valued Jim's explanation of a GPA to ninth graders and also acted by emphasizing the importance of a GPA to their own ninth-grade classrooms. Thus, by socially interacting with Jim, Janet and Sally enhanced their own individual knowledge on the importance of calculating a GPA with ninth graders.

Student Supports: Homework

The topic of homework and its validity became a frequent point of discussion for the team. We had many purposeful conversations on the value of homework for our struggling students. We also brainstormed possible reasons for the lack of homework completion. One particular conversation centered around the concept of homework for our college prep classes. This conversation started when we were in dyads and triads. Jim and I had the following exchange:

> Glynnis: But homework, the issue of homework for your academic classes. So, do you still give out homework?
>
> Jim: Yes.
>
> Glynnis: What is your return rate?
>
> Jim: Okay, so I do accept some late work if we don't go over it in class, things like that. So, if I accept late, and I actually ask them, "Hey I'm getting ready to pass this back. Are you gonna turn this in? 'Cause if you don't, you're gonna get a zero." I probably have 60 to 70% of the students not handing in homework.
>
> Glynnis. Okay, why do you think the return rate is so low?

> Jim: To me, it's not that you're supposed to be doing that much less work, it's supposed to be at the level that you're capable of doing. Now we have a lot of kids in these academic classes that English is not their first language, so they have those barriers. Even though they are not in the ESL class, they may have been in the past. Reading comprehension issues. So, the volume of homework, in terms of how many assignments and the volume of work in terms of how long that each assignment takes, has to be taken into consideration.

When I heard Jim say this, I felt it was important to bring the group together to not only discuss the topic of homework, but also to hear other team member's opinions and concerns about homework. When the whole group gathered together the following exchanged occurred:

> Glynnis: Hey everyone, we just started a great conversation about homework, and it's something we all need to hear. The question that I always need help with looking at is homework for your academic classes. How much do you give? And the other question I wonder about is, do you give extended time to your academic classes for handing in homework, or is it one shot and that's it, or "if you hand it in tomorrow, it's 10 points off. Hand it in the day after that, it's 20 points off?"
>
> Ernest: No, I don't give homework to my academic students, but my subject is different 'cause there's reading and then ... there's not like you are handed a worksheet. It's usually building up to a point. It's like you're either drafting or reading. If you write a draft, the draft is due by a certain date. If you don't do the draft, that's your grade. It's zero. And then you have to redraft. So, it's not like a math or where you're like nightly things.

When Ernest entered the conversation, he offered a different perspective on homework. He is an English teacher, and his experiences with homework differ from those of other team members. As such, the team had varying viewpoints and expectations with homework. The conversation continued:

> Glynnis: Okay. Well Jim brought this up because he was looking at this academic classes and noticed that so many students were not handing in homework.
>
> Jim: Just looking at their grades now in my period three, the mean grade is 47.4.
>
> Janet: And you give zeros on homework?
>
> Jim: Yeah, if they don't do it. I mean if they don't do it, they don't do it. The thing is, their homework assignments, some of the kids just don't do it, but there's so much that's in-class stuff that they've done, not finished, and don't hand it in.

This exchange demonstrates how various team members struggle with the concept of homework, the return rate, and its validity in certain students and classes. Jim continued to discuss how the concept of homework and ability for students in academic-level classes might be evaluated differently:

> Jim: But if they [academic-level students] are under the impression that *academic* just means you don't have to do as much work, that's not good. That just means that's for lazy people, and this is for people who want to work as opposed to this is their, I wouldn't want to say ability level, but something closer to that's what they're capable of comprehending, understanding, whatever, and this is for people who need to get challenged more in order to get more out of it.

As a team, we seemed to question whether homework is actually helpful to learning and whether there's an institutional belief that certain classes (e.g., academic levels) have smaller workloads.

Also, this exchange illustrates the negative feelings some teachers have towards students who do not turn in work. Throughout the exchange on homework, Jim brings up a good point on the negative connotation students sometimes have towards academic level classes and the understanding that these classes require less work (e.g., homework). As the conversation continued about homework, the team began to brainstorm ideas and possible solutions to support our struggling students. The following is an example of a possible solution to the homework issue.

> Janet: In my old high school, they had a program that freshmen all had study hall first semester. The program was to help freshmen with workload and time management. And as long as they passed all of their classes, they didn't have to go to that study hall anymore.
>
> Glynnis: I love it.
>
> Jim: So mandatory study hall for freshmen first quarter period nine. After that, as long as you're passing all your classes, you don't have to go to it anymore! And let's say after the quarter, [if] you don't pass all your classes, it gets scheduled back in. Great idea! Now all of us teachers, you know that could be a duty. I get not wanting to add duties, but a place or something that people have to go to.
>
> Glynnis: Ninth-grade teachers, that's their duty.
>
> Sally: So, I would run a study hall for ninth graders. It might be like babysitting them.
>
> Jim: I feel like, anyway, the kids have to come see me.
>
> Sally: Actually, I'm not sure if I like this idea, only because I just feel like it could be a lot of babysitting and forcing kids to be there against their will.
>
> Janet: They wouldn't know. It would be a part of their schedule.

Sally: I see what you mean.

Glynnis: It would definitely have to be planned in a way that we focus on our struggling rising ninth graders.

Everyone: Yeah.

Janet: And how would we know? Would it be looking at the state test scores? Looking at middle school grades?

Jim: Yeah, that'd be tricky.

Sally: I like the idea that you can earn out of it if you pass your classes.

Janet shared a practice from her prior school, and Jim elaborated and validated her comment. Subsequently, Sally raised a counterargument for discussion, believing that Janet's recommendation might be more babysitting than actually helping ninth graders. Although Sally was not originally enthusiastic about these ideas, upon reflection, she followed up with this valuable insight and solution:

> At the end of the day, it is all about homework for math. If they don't spend at least 20 to 30 minutes on math homework each night, they are not going to understand it or remember it. They have to be willing to put in some effort. The biggest success I have had with freshmen this year is the Freshman Mentor Program. I paired students from my precalculus class with struggling students from algebra for tutoring 2 to 3 times per week. The peer tutors were an awesome help, and some kids wouldn't have passed if it wasn't for these tutors. Also, lots of structure is required for a freshmen class. We change seats every month, we have several rules in the classroom they need to adhere to, and we inform parents of every misbehavior or bad habit. They need a lot of direction and guidance. (Personal Communication, June 19, 2019)

After our interdisciplinary team's discussion on peer tutoring, and based on the positive experiences of the other team members, Sally reflected and decided to create her own peer-tutoring model to help her struggling ninth graders. By being a member of our team, Sally was able to share her thoughts and ideas about homework with people outside her subject area. With regards to social learning theory, Sally's peer tutoring program is an example of what Brown and Gray (2008) describes as "shared practice" (p.23). Shared practice is a type of actionable knowledge that enables one (in this case, Sally) to internalize information from the team through conversations and create her own practical solutions and practices. These meaningful conversations about how to support our struggling ninth graders enabled participants like Sally to create a peer-tutoring program with her upperclassmen and freshmen. Because we were nearing the end of the school year, the team needed to prepare for our PLC presentation that focused on the academic and social support for ninth-grade students. As a team, our next few meetings would focus on a new approach to the ninth grade. The team decided to delve deeper into the idea of structural school-based initiatives to help our ninth-grade students.

Student Supports: Academic Struggles

Another topic that garnered purposeful conversations and solutions was the issue of how to help our ninth-grade students who struggle academically. As a group, we all agreed that we needed to help our academically struggling ninth graders, which led to the following discussion:

> Glynnis: To support students that are failing. What do you do?
>
> Sally: The very first thing, I email and call. Well, maybe to the student, and then email and call the parents.
>
> Jim: I try to spend...take a day each quarter, where I call them [students] up individually. And let them know, "Hey, these are the assignments that you're missing."

Glynnis: I like that.

Jim: And they're all on PowerSchool. Almost all of them, let's say 80 to 90 percent are on PowerSchool. They should know what's missing. But in doing that, you can almost have a little bit of a dialogue as to why this is going on. And then when they say, "Hey can you give me a list of it?" And they're writing down, they have to keep adding more and more and more stuff that they're missing. It starts to hit them, like, "I'm not doing my work." But it does give you a little bit of time to have this one-on-one stuff. So, for me, it's a day they're all doing their Document Based Questions or something like that, where they're writing or doing something at their desk anyway, that I can invite to meet them.

Glynnis: Once more.

Jim: Two minutes a kid. Go through them.

Sally: I like that.

In the exchange above, I asked an initial open-ended question about how to support students who are struggling. Sally volunteered a solution from her previous school and then Jim elaborated on this approach. This exchange demonstrates how creating the space for teacher conversation can allow for ideas to be shared and used across a team. Within this exchange, different team members function as what Thomas and Brown (2011) call *peer amplifiers.* Additionally, opportunities to exchange ideas, share resources, and create solutions opens up space for teacher learning and more effective student support. Simply put, the sharing of strategies leads to better strategies used across the team. These simple yet very effective strategies helped our team members in figuring out different approaches to help our struggling students. For example, in two separate follow up conversations with team members, I captured the following information:

Glynnis: Can you think of a time when somebody mentioned something while we were meeting that you thought, “Aha, I could try that” or something I didn’t think of?

Janet: Well, I mean just I really appreciate getting a chance to sit down and talk to other people. When we have a chance to sit around and talk about some of the problems and come up with solutions, I think in the end it’ll really help the students achieve more in class.

Similarly, Jim also reflected on a previous meeting where as a team we discussed calling and emailing home to our struggling students. Jim decided not only to concentrate on his struggling students but also added a different perspective:

Jim: Yeah, I mean, I don’t mind doing them [calling/emailing home]. But you know, I found that when I do call… when I do email parents, I have to find somebody in the classroom who’s doing well so that when one kid, really angry at me, says, “You emailed my parents and they’re all pissed off at me.” You have one, “You emailed my parents, you said I was doing...my parents were really happy, and they took me out to dinner.” Something like that.

Glynnis: So, email all levels in the room.

Jim: In the room, yeah. Just need one or two.

Again, this straightforward example from one person on the team allowed other team members to implement these different strategies with their students. By having this PLC time and space, we were able to focus on particular issues affecting our shared ninth-grade students and share various strategies.

Student Supports: Extra Credit

As a team, we continued to share and brainstorm ideas to support our struggling shared students. At one particular meeting, almost every team member shared their thoughts on the concept of extra credit. Each member had a unique approach to extra credit:

> Glynnis: Anybody want to share something you've been doing with our shared students?
>
> Janet: I can add something kind of silly, I don't know.
>
> Glynnis: Silly is great.
>
> Janet: Extra credit. They're very externally motivated. And if you can give them something immediate, they work for my class anyway because of what it is, and I group them. Just getting them motivated for any kind of class is kind of difficult, so on a daily basis they constantly ask, "Are we gonna turn this in? Is this a grade?"
>
> Ernest: Yes, I've noticed that, too.
>
> Janet: If you don't give them some kind of immediate motivation associated with it, I have a hard time getting them just focused enough to do their work. And there's been a few times that, when they did work really solid, and I didn't have to do a lot of redirection during class, that I told them at the end, "I think I'm gonna give you a little extra credit for this!"
>
> Sally: Exactly. And they get motivated.

This exchange refers to Janet's experience with trying to get her students motivated to complete classwork. Janet explains how students always seem to want to know if something is going to be graded and that plays a part in their motivation to work. Ernest validated Janet's observation and mentioned that he notices the same situation in his classes. As Janet continues to explain her use

of extra credit with her classes, Sally also validates Janet's reasoning to highlight the increase in motivation when the concept of extra credit is posed to the class.

As the conversation progressed, we continued to discuss various extra credit examples to motivate students. Samuel explained a motivation technique he has been using for years called "Richmond dollars," and Sally and Janet followed up with a similar idea they use in their classrooms. Samuel, Sally, and Janet discussed these techniques:

Glynnis: Samuel, anything you have noticed?

Samuel: Just my system that I've been using forever, in which I give Richmond dollars to students who go above and beyond in class or on assignments. I give them dollars to exchange for prizes.

Glynnis: What kind of prizes?

Samuel: It could be gift cards.

Janet: And you get them sponsored, right? You go to businesses.

Samuel: Well, I go to places like Dunkin Donuts or just purchase Amazon gift cards.

Ernest: Whatever works.

Samuel: It was the same thing along the lines of giving points for extra credit. So this is my system that's been working for 45 years. Some teachers say it's crazy; some say it's wonderful. If I do a workshop, teachers come up to me and say, "This is the greatest thing." Another teacher would say, "You're crazy." So, but it works for me.

Glynnis: It works with your personality too.

Samuel: It's along the same line of giving points for extra credit.

Sally: External motivation, mm-hmm. Here's what I do: we'll go through the questions, and if they [students] participate, give part of the answer because it takes so many steps

to go through the problem, so if they give me any piece of solving the problem, then they get a chip. But it's only for a period. So, at the end of the period, whoever has the most chips gets plus one or two on the next quiz.

Glynnis: They are never too old to have this desire to do well and get rewarded.

Sally: I give so many extra credit points. Like if they correct me on anything, they get an extra point, because they correct me a lot!

Samuel: I do that too!

Janet: My co-teacher and I do that strategy all the time. If the group has done really well in making corrections, we'll give them extra points. Even after the fact, they feel valued and motivated to work hard.

These strategies reflect the various techniques and ideas that our interdisciplinary team members implemented in their classrooms regarding extra credit. External motivation for students was evident throughout our conversations. For example, Samuel used the same external motivation for 45 years, which enabled students to earn prizes for exceptional work and recognition. Samuel's experiences are representative of how the other team members felt about extra credit. Both Sally and Janet validated Samuel's approach by highlighting their use of extra credit chips and points for corrections made throughout the classroom activities. As a team, we all recognized the importance of some type of external motivation system that enables students to understand the value of rewards for hard work. Everyone on the team believed that extra credit works because it externally motivates the students to do more, strive for success, and feel rewarded.

Student Supports: Ninth Grade Orientation

Throughout the last few team meetings, our team focused on how to support students during the eighth- to ninth-grade transition. To reiterate, conversational and topical shifts

occurred because we needed to prepare for the end-of-the-year PLC schoolwide presentation. For our presentation, our goal was to create a guide for teachers to understand the eighth- to ninth-grade transition and come up with a better orientation format. As such, we brainstormed ideas about creating a peer-mentoring program, a freshmen handbook, virtual tour of the school, and freshmen orientation events. During one of the last meetings, a discussion started among a few team members about how to help our ninth graders assimilate into high school. Jim best expressed the sentiment that most teachers see early in the school year:

> But I think that, at least in the first few weeks, the kids—I've only taught freshman now for two years—but they all seem to come in here, and they want to be good, and it only takes a few weeks in grades for some people to be like, "Nope. Done." And "This is too difficult. This isn't for me. They [the high school] have so many more expectations. I don't want to follow these rules."

Here Jim describes what he has seen in his classes, but the team agreed that freshmen for the most part seem excited and eager, but something happens. At this point in the team discussion, I asked a question of the group to garner some ideas on structures to support our ninth graders.

> Glynnis: So, do you think it's the rules or the ninth-grade experience in general that is making our students check out and not willing to try?
>
> Ernest: This place is chaotic for freshmen.
>
> Sally: I think Jim made a good point earlier. They [freshmen] come in wanting to do good.
>
> Ernest: Yes.
>
> Jim: Well, not everyone, but most people are gung-ho about being in high school, and somewhere along the way, when they're not as successful, there's a possible give up in

their mind, or something like that. And there's no plan for them on how they're going to pass. Like, what are they going to do? Are they going to make a change to their attitude? To their efforts? To pass the class along the way? Some of them try real hard or try as hard as they think they can do, or whatever.

Glynnis: Right.

As a team, we all agreed that ninth graders as a whole enter high school with the desire to do their best. Collectively, the team wanted to create a better and more rewarding experience for ninth graders during the transition to high school. The team continued our conversations, and we decided to discuss ideas to support ninth-grade students during their transition to high school.

The team decided to look at previous practices for the ninth-grade orientation and brainstorm ways to improve the experiences for students. In the 2015–2016 school year, a team of administrators, teachers, and counselors created a handbook for ninth graders. The handbook consisted of tips for freshmen, understanding high school attendance procedures and schedules, a map of the school, and important contact information. The team felt a major drawback of the handbook was that it required the ninth graders to read a digital copy and understand the expectations of the school. We all agreed that, unfortunately, a majority of our ninth-grade students would not read the handbook. As a team we discussed the possibilities of using the handbook differently:

Ernest: There's no point in handing it [handbook] out. They won't read it.

Sally: A lot of kids, they don't do [read] that. They don't look at it. They do look at videos.

Glynnis: That's a great idea for the orientation.

Jim: Or maybe give them bits and pieces of the physical copy and they [ninth graders] could even do some kind of scavenger hunt with it.

Sally: A day-one thing?

Jim: Yeah.

Janet: I love that idea of a scavenger hunt.

This exchange demonstrates how our team meeting time was purposeful and resourceful in addressing the needs of students. Everyone in the group either suggested or affirmed one another's ideas. Brown and Adler (2008) refer to these purposeful exchanges as the *demand-pull* method, in which learning occurs through reflective practices, but the "reflection comes from being embedded in a community of practice" (p. 30). Additionally, we continued to discuss various improvements and changes to our ninth-grade orientation. Our main focus was to ensure that the ninth-grade orientation emphasized the importance of high school through the experiences of students, not just through reading a handbook. Therefore, we switched our focus from the previous handbook idea to a more student-led and student-centered ninth-grade orientation.

We continued to brainstorm ways to improve the ninth-grade orientation to meet the needs of our students. At one point, we discussed the possibility of bringing in our ninth-grade students earlier than a half day before school starts:

Ernest: Honestly, during that half day when guidance runs it and comes in to talk to students, it is really not helpful. The counselors are like, "Do you have any questions?" And the kids don't even know where they are or what they're doing.

Jim: Yeah. And they [ninth graders] are out of whack because I don't think one day before the beginning, and then the next day they come, and it's everybody. Orientation is

not rolled out right. If we could do it, maybe chunk it alphabetically. Like A through something comes this particular day, and maybe they [the district] could pay some teachers a little extra to come in or give them PD hours or something like that. I totally wouldn't mind coming in and helping out with a smaller group of freshmen a week before or a couple days before.

Glynnis: Changing schedule and days. I'm just putting these as ideas that we could propose.

Sally: It seems like they need more than just one day.

Glynnis: They need more than one day.

Here, both Ernest and Jim describe the current orientation program at our school and the shortcomings of having only a half day for ninth graders to understand high school. Both teachers recognize that ninth graders often enter high school with a lack of understanding for not only the layout of the school, but also for the expectations and procedures. Jim introduced the idea of having smaller groups of students attend an orientation day and possibility of having teachers help. I decided to note these changes as part of a proposal to bring to the administration. I also made a point to call attention to the fact that our district calendar has two extra days at the end of the school year for students to attend, which is only so that students can return books and supplies. With those two extra days in mind, I suggested maybe have the ninth graders come two days earlier at the beginning of the year instead of having extra days at the end. The team agreed that ninth-grade orientation needed to be more than a half day before the start of school.

As noted, the team believed in designing a purposeful orientation program that focuses on understanding the ins and outs of high school. In one of our last meetings, the team finalized our orientation proposal by discussing two new ideas of involving upperclassmen and parents:

> Jim: They [ninth graders] really need to understand how things operate a little bit better. Whether it's peers who go through it with them, that would be really good, if they have other high school kids do this with them as opposed to teachers, but actual juniors or seniors who say, "Hey, I've navigated this before. This is the gym."
>
> Ernest: Maybe pick the National Honor Society or MAC (Minority Achievement Committee) Scholar kids?
>
> Jim: Great community service for them to do.
>
> Ernest: They need it anyway.
>
> Jim: It's very obvious there are certain kids that just get it as freshmen; there are certain kids that are just, here we are, there's notes on the board, and they don't have a notebook or a pen or a pencil. How are you supposed to learn this stuff?

In this exchange, Jim begins and ends the conversation focusing on how ninth graders need to understand what high school is like and how to be a high school student. Jim offers the idea of having upperclassmen as an integral part of orientation by providing tours of the school. Ernest makes the recommendation of having National Honor Society and MAC Scholar students for the tours because they need the community service hours.

As discussed in Chapter Two, these peer-to-peer conversations highlight what Thomas and Brown (2011) describe as *learning in the collective*. In this learning environment, our interdisciplinary team learned from each other through interaction and participation based on shared interests and opportunities. In other words, once a topic (in this case, orientation) is brought up to the group for discussion, conversations begin to flow, and group members share their own insights and recommendations. Here, Thomas and Brown's (2011) explanation of peer amplifiers is also relevant, as peers served as knowledge resources to aid in individual and group

learning. With regards to ninth-grade orientation, team members shared their experiences and knowledge, which added to the rich conversations. As such, learning occurred among team members because of the interactions and sharing of resources and ideas.

As the meeting continued, an assistant principal stopped by to check on the progress of our PLC. This particular assistant principal just happened to be over the ninth grade, so it was perfect timing to discuss our new ideas pertaining to the ninth-grade orientation format. After she listened to our ideas and complimented our student-centered focus, the assistant principal suggested that we consider adding a parental involvement piece to the orientation format. She stated that she had received several emails from parents asking to have their own type of orientation to high school. She continued by noting that many parents cannot attend Back-to-School Night because of work and childcare and that offering a parental orientation piece, maybe on a Saturday, would be beneficial for parents and guardians. The team wholeheartedly agreed to this recommendation, and we included it in our presentation to the school.

Conclusion

Over the course of two years, the team discussed, collaborated, and developed ways to support ninth-grade students. In the beginning, our team was a group of five to seven teachers from different disciplines that had some ninth-grade students in common. Initially, as a team, we thought this would be a PLC to discuss common students and how to support them, but it turned out to be much more. Not only did we focus on supporting our shared students, but we began to discuss the whole ninth-grade experience. Team discussions led to concrete actions for students. Overall, this chapter focused on the key areas of advocating for students, supporting ninth graders, and enhancing the ninth-grade experience. In the first section, the team collectively agreed to help a struggling student. Members of the team advocated on behalf of the student to

the administration to change the student's schedule to reflect a better academic placement for this year. With this schedule change, the student became more successful academically and socially-emotionally. In the second section, the team focused our actions on enhancing the freshman experience. Based on conversations about our observations, the team recognized that ninth-grade students across all disciplines had similar struggles transitioning to high school. Our topics of discussions included homework, understanding a GPA, academic struggles and supports, extra credit, and ninth-grade orientation format. Discussions that happened during team meetings led to particular solutions and changes in our actions. Team members began to learn from one another on how to help our ninth-grade students because we had the time and space to discuss our concerns and ideas. These types of changes and opportunities to learn from one another influenced our teaching practices as we incorporated one another's strategies.

With our interdisciplinary team, the use of social learning theory provided a useful framework to analyze how we professionally learned from one another through collective conversations. Opportunities to converse in our dyads, triads, and whole-group formats allowed us to share our own experiences with ninth graders. Most important, these collaborative opportunities enabled us to learn from each other, construct new knowledge, and put this new knowledge into practice. All members of the team were equal participants, and there was no assigned traditional leader. Instead, team members would take on leadership roles based on their own knowledge and experiences. The ease of our conversations and the exchanging of ideas led to actionable results. Thus, the use of social learning theory—in particular, learning in the collective—provided a foundation for organizing my data into themes and analyzing the collaborative conversations and actionable practices.

CHAPTER SIX: CONCLUSIONS AND IMPLICATIONS

> He has told you, O man, what is good; And what does the Lord require of you? Except to be just, and to love [and to diligently practice] kindness (compassion), And to walk humbly with your God [setting aside any overblown sense of importance or self-righteousness]? (Micah 6:8 Amplified Bible)

This powerful and important verse by the minor Hebrew prophet Micah serves as a reminder of how people should emulate a social-justice mindset regarding institutions like education. The key components of the verse are justice, love, kindness, and humility—all of which are essential to collaborative environments like the ones we fostered in our interdisciplinary team. This chapter is divided into three different sections. In the first section, I will summarize the key findings of my research and draw connections to the literature on interdisciplinary teaming. In the second section, I will discuss recommendations for future research with regards to teacher education and practitioners. In the last section, I will examine my own role as a teacher researcher, what happened to the interdisciplinary team after the two years, and how my current role has afforded me the opportunities to implement findings from my study.

Summary of Findings and Connections to Literature

This dissertation sought to analyze the reported professional learning of teachers in an interdisciplinary team, as well as to understand the process of forming an interdisciplinary team within the nontraditional environment of a high school). The problems addressed in this research were to identify the institutional barriers and lack of support we as a team encountered when developing and maintaining the middle school concept of interdisciplinary teaming at the high school level. This chapter summarizes the key findings related to the two research questions:

1. How do we create space for an interdisciplinary team at the high school level?
2. What types of teacher learning and student support may result from creating space for high school teachers to work in an interdisciplinary team setting?

The participants in this study included seven teachers (including myself), who primarily taught ninth-grade students at a high school in suburban New Jersey. An action research study—specifically, practitioner action research—was implemented because it offers the researcher the opportunity to be an insider researching and studying other insiders. According to Herr and Anderson (2015), the use of action research is situated around a particular problematic situation (i.e., struggling ninth graders) in which members (i.e., participants in this study) address ways to solve the problem. I decided to use a practitioner action research approach because it provides the researcher with an opportunity to participate in a professional learning community (i.e., an interdisciplinary team) to collaboratively discuss our shared students, learn about strategies to help students, and brainstorm innovative ways to alleviate concerns with the eighth- to ninth-grade transition.

In Chapters Four and Five, I discussed the major findings of my practitioner action research study on the reported professional learning of teachers on an interdisciplinary team at the high school level. Over the course of two years, I found that our team encountered many institutional barriers such as lack of administrative support and turnover, a small number of shared students, and teachers who did not teach ninth graders exclusively. However, our team also experienced a variety of learning outcomes. As stated in Chapter Five, the team advocated for students, learned from one another, and shared resources and strategies. I presented these findings in two separate chapters focusing on the two listed research questions.

Key findings: Research question #1. As mentioned, my first research question focused on how we can create space for an interdisciplinary team at the high school level. Historically, interdisciplinary teaming is a middle school concept in which a core group of teachers from varying disciplines share a particular number of students (Haverback & Mee, 2013; Mertens & Flowers, 2004; Seabury & Barrett, 2000). Again, this research study involved seven teachers from the disciplines of English, math, social studies, and science. Our number of shared students was not consistent with middle school interdisciplinary team numbers, which typically range from 100 to 120 students (Alspaugh & Harting, 1998).

Overcoming the obstacles that make interdisciplinary teaming at the high school level so difficult was an arduous task. Many factors such as minimal administrative support and turnover, institutional structures, and lack of collaborative time contributed to the difficulties of creating an interdisciplinary team. The use of grammar of schooling by Tyack and Tobin (1994) as a conceptual framework aligned perfectly with the frustrations in implementing a middle school concept in a high school setting. The grammar of schooling exposes the antiquated approaches and barriers to schooling, which have led to decades-old approaches (Mehta & Datnow 2020; Cuban 2020; Tyack & Tobin 1994). The creation of an interdisciplinary team was in stark contrast to the grammar of schooling for the high school level.

Key findings: Research question #2. As stated, the second research question focused on the actual happenings within an interdisciplinary team when space is created for teachers. The literature presented in Chapter Two supported the benefits of interdisciplinary teaming for the professional learning of teachers. The findings of this study are supported by the existing literature on interdisciplinary teaming and PLCs (Hord & Tobia, 2012). Regarding PLCs in their pure function, the work of Hord and Tobia (2012) provides a format of five dimensions of

successful PLCs: having supportive and shared leadership, shared values and vision, intentional collective learning and application of learning, supportive conditions, and shared practice. This study successfully implemented shared leadership, values, vision, intentional collective learning, and application of learning. Our team collaboratively worked together to learn about our shared students, learn from one another, and implement new learning strategies. For example, our team discussed topics such as homework and extra credit and collectively expressed their opinions and the value of these topics. These collaborative conversations yielded opportunities for team members to learn from each other and implement new strategies.

Our interdisciplinary team, acting as a PLC, did not have all of the successful components to a PLC with regards to the Hord and Tobia (2012) framework. For example, within the framework, physical conditions and relational conditions are an essential component of PLCs. Unfortunately, the physical conditions (e.g., meeting time, place, materials, and resources) were not always implemented with a purposeful mindset. Our meeting times were often limited or canceled for schoolwide faculty meetings. The lack of PLC time hampered our ability as a team to further converse and create new supportive conditions to enhance the ninth-grade experience.

Contribution to the Literature

These findings are further reinforced by the existing literature on high schools that implement interdisciplinary teaming in the ninth grade (Abbott & Fisher, 2012; Kemple & Herlihy, 2004; Valdero, 2005). Throughout the literature review, several themes emerged that aligned with the research study:

1. Interdisciplinary teaming at the high school level provided spaces for collaboration and shared practice (Cook & Faulkner, 2010; Ellerbrock & Kiefer, 2014; Havnes, 2009;

Main, 2008; Reed & Groth, 2009; Strahan & Hedt, 2009; Wilcox & Angelis, 2012). The ability to collaborate and share resources with teachers from different disciplines afforded the team with a unique opportunity. Traditionally, at the high school level teachers are department-specific with little time to collaborate with teachers from other disciplines. By creating an interdisciplinary team of ninth-grade teachers, we were able to collectively learn from one another and utilize this newly learned information within our own disciplines.

2. Interdisciplinary teaming at the high school level provided opportunities for supportive communication (Bickmore & Bickmore, 2010; Cook & Faulkner, 2010; Ellerbrock, 2012; Wilson, 2007). The ability to effectively communicate and foster conversations was instrumental in the successes of our team. The openness to learning from one another through communicative opportunities increased our knowledge of students, educational practices, and the various ebbs and flows of being an educator.
3. Interdisciplinary teaming at the high school level provided opportunities for affective dimensions and social bonding (Cook & Faulkner, 2010; Ellerbrock, 2012; Ohlsson; 2013). The team as a whole developed a sense of mutual support and trust for one another. There was a relational dimension to the team centered around our collective frustrations with the lack of support from administration, desire to approve the ninth-grade experience, and sincere appreciation for one another. This led to strong bonds among team members in which we genuinely cared about each other and created a family-like atmosphere.

As such, my research findings reported teachers benefitting professionally by working together, interacting with other colleagues, and reflecting on pedagogical practices. Additionally,

my research findings indicated that teachers are more likely to view teacher collaboration positively when they are comfortable with their colleagues, have opportunities to share and communicate, and feel a sense of team cohesiveness. Thus, my contribution to the broader literature on interdisciplinary team focuses on how to implement and sustain a high school version of interdisciplinary teaming. Simply put, my contribution shows that interdisciplinary teaming at the high school level does not need to mirror a middle level version. A high school interdisciplinary team just needs to share a group of students and collaborate to support the students and each other. Building upon the existing literature on interdisciplinary teaming (i.e., Arhar, 1997; Bishop & Harrison, 2021; Clark & Clark, 1992; Flowers et al., 2000), opportunities to collaborate in middle level environments are not only beneficial for students but also for teachers. However, my work situates interdisciplinary teaming at the high school level with the expectation that teaming can be purposeful for teachers when its carefully planned, supported by administration, and implemented in the master schedule.

Critical Reflection

Practitioner action research afforded me the opportunities to participate in as well as conduct the research (Cochran-Smith & Lytle, 1999). The duality of my roles often made it difficult to separate myself as a researcher of the interdisciplinary team and a member of the team. At the beginning of the research journey, my practitioner identity was easier to translate and more comfortable to display. Being practitioner was natural and easy, but I needed to develop my researcher identity. Throughout the two years of this study, my researcher identity developed through the trials I encountered and the investment in my research. The team members knew that I was a doctoral student studying them and our interactions; therefore, I did not want my own research knowledge on interdisciplinary teaming and teacher education to

influence our team practices. Thus, it was important for me to procure team members who previously had interdisciplinary teaming experiences, because I did not want members to feel inferior or lacking in knowledge about teaming. For example, sometimes I would start meetings with a question that I was pondering that pertained to ninth graders. I asked these questions so as to generate conversations for data collection. Even though this example might not seem negative, as teacher-researcher, I was trying not to influence the team too much.

Reflecting on my dual identity as a participant and a researcher, I frequently had to be cognizant of my conversational styles and topics. For example, I would have daily conversations with a member of the team (Ernest) because we both shared the same duty. These conversations often centered around our team activities and discussions. Our conversations provided me an opportunity to listen to another team member's perception of our meetings and discussion topics. I was able to look beyond my own thoughts and actually hear what another member of the team thought. In one particular conversation, Ernest gave me advice on managing the amount of time team members spoke, because we often had a few members control the conversations for long periods of time. Looking back on these conversations, I would like to have listened more to Ernest's advice. Unfortunately, I did not embrace his recommendation consistently, resulting in some members of the team not being able to share and contribute to the conversations.

Using social learning theory and the grammar of schooling as a theoretical and conceptual lens, I was able to study how teachers in interdisciplinary teams participated and interacted around shared interests and frustrations. Although social learning theory provided a useful theoretical framework for our team, much of the current work using this framework is situated in more digital formats. It may have been beneficial to the researcher to implement

digital collaborative formats for the team to interact, especially when meetings were shortened and canceled.

However, while there were some ways in which social learning theory did not perfectly fit the findings, social learning theory provided a unique and creative lens through which to study collaborative formats. Instead of focusing on how the group learned collectively, social learning theory posits how individuals should learn to learn with others and become more intentional about others' perspectives (Brown & Adler, 2008). The use of social learning theory helped the researcher focus on the types of learning the group encountered. Specifically, social learning theory enabled the researcher to think about the ways in which the group and individual members transformed their learning into actionable items to help students.

The use of the grammar of schooling provided the researcher with a creative format to understand the organizational and pedagogical structures that have defined education for centuries. To reiterate, the grammar of schooling focuses on the historical, organizational, and pedagogical components of schools that have shaped teaching and learning (Labaree, 2021; Mehta & Datnow, 2020; Tyack & Tobin, 1994). The structures of the grammar of schooling have been so ingrained within schools that educators just accept these practices with little push back. Regarding this study, the researcher transplanted a grammar of schooling structure from middle schools (interdisciplinary teaming) into a high school setting.

Throughout Chapter Four, I indicated how the grammar of schooling was evident in institutional barriers (i.e., lack of administrative support and time to meet) our team encountered. Interestingly, what became evident through a critical evaluation of my role as a researcher was how the team's conversations were also shaped by the grammar of schooling concept. For example, our team spent a significant amount of time discussing structures of high school (i.e.,

GPA and homework) in hopes of helping students. Interestingly, though the intentions of our conversations were to help ninth graders, our team reinforced the grammar of schooling. No one on the team, including me, the researcher, reimagined practices or structures to challenge the grammar of schooling for ninth graders. For example, when we discussed how to help Kaylyn, our conversation centered around changing her course placement to a lower-level class, despite much research demonstrating the negative effects of tracking. We did not discuss any larger structural reforms like de-tracking, nor did we think we had the authority to work with Kaylyn's teacher to better support her individual needs while in the higher-level class.

Also, when we discussed the importance of ninth graders understanding the concept of a GPA, everyone on the team believed a GPA is an important concept for ninth-grade students to understand, even though a GPA is a structural cornerstone of the grammar of schooling for high schools. We as a team did not think about how hyper-focusing on GPAs might lead to an increase in academic stress and anxiety (Suldo et al., 2018). In Chapter Four, I discussed the grammar of schooling as a barrier for innovative practices such as interdisciplinary teaming at the high school level. Unbeknownst to the team, we never reflected or confronted our own grammar of schooling practices. This is partly because we have been so ingrained in the antiquated day-to-day practices and structures of schooling, which left us little opportunity to question the grammar of schooling. This critical revelation highlights just how difficult it is to challenge and create reimagined changes to the archaic grammar of schooling practices.

Recommendations and Implications

Recommendations and Implications for Teacher Education Research

This study centered on a group of teachers who voluntarily joined a PLC that focused on ninth-grade students. All of the teachers except for me taught other grades besides ninth grade.

As a result, the interdisciplinary team was not purely composed of exclusively ninth-grade teachers. It is recommended that further study be conducted on exclusively ninth-grade teachers who participate in an interdisciplinary team. In the case of our interdisciplinary team, we were still able to have purposeful conversations about our shared students, but our numbers of shared students were relatively minimal compared to traditional teaming environments with teachers teaching the same grade level. Would a group of only ninth-grade teachers have yielded more students in common and better results?

Additionally, findings of this study yielded important recommendations and insights for teacher-preparation programs. Collaboration among students is now the norm in school settings. But, do teacher-preparation programs also support collaborative opportunities for their preservice teachers? Teacher preparation programs should model these collaborative opportunities. According to Bond (2013), teacher preparation programs should include opportunities for preservice teachers to collaborate early on in their program of study. To take it one step further, it is recommended that teacher preparation programs incorporate interdisciplinary teaming opportunities so that aspiring teachers from different disciplines learn how to collaborate prior to entering the classroom. I am not suggesting that all preservice teachers need to be placed on interdisciplinary teams during their program of study, but I do recommend opportunities for preservice teachers from different disciplines of study to collectively work together, learn from each other, and transfer this new knowledge to their future school settings.

A final recommendation is that further study be conducted on interdisciplinary teams utilizing the lens of Brown and Adler's (2008) social learning theory. The concept of an interdisciplinary team mirrors many of the characteristics of social learning theory. Interdisciplinary teams provide spaces for teachers to socially interact, construct knowledge, and

learn from one another. Interestingly, social learning theory posits a new type of learning that stretches beyond the archaic and sometimes stagnant structures of traditional schooling. Though my study did not discuss interdisciplinary teaming in a digital format, I wonder if teaming would work within an online school structure? With the increase in students learning remotely, would the concept of interdisciplinary teaming work? Again, social learning theory provides a fascinating way of analyzing the professional learning of teachers in traditional as well as digital formats.

Recommendations and Implications for Practitioners

The findings from this study also yielded important insights and opportunities for practitioners who want to create interdisciplinary teams at the high school level. First, it is clear that creating and sustaining an innovative practice like interdisciplinary teaming at the high school level can be difficult, but it is possible! Based on the challenges and successes of this study, I provided the following recommendations to practitioners who are interested in creating interdisciplinary teaming.

Get Administrative Support

In order to effectively make changes in school settings, one must have the support and backing of administration. It is important that administration understands the purpose and benefits of interdisciplinary teaming at the ninth-grade level. Teachers who want to form interdisciplinary teams need to be well versed in the literature on teaming. Administration will more than likely support your initiatives if they understand the benefits of teaming, especially for students.

Work Closely with the School Counseling Department

The school counseling department should work closely alongside your interdisciplinary team and quite possibly become members. School counselors add another layer to understanding the needs of students. Additionally, school counselors can help with schedule changes and course recommendations. Thus, having a positive working relationship with your school counselors helps tremendously when discussing and helping students on your team.

Be a Part of the Master Scheduling Process

The master schedule process for most high schools is an arduous task and a time-consuming process. It is essential for teachers who want to create interdisciplinary teaming in the ninth grade to be a part of the master schedule team. Most importantly, being a member of the master scheduling team might also allow you to advocate for common planning time for your team. Having a common planning preparation time enables your team to meet during the school day and function as a "typical" interdisciplinary team. When you are a member of the master scheduling team, you can advocate for courses and teachers that might benefit the students on the team.

Find Teachers Who Teach Ninth Graders Exclusively

If your goal is to implement interdisciplinary teaming in the ninth grade, then you need to have teachers on the team who teach ninth graders exclusively. Teachers are often spread so thin among their various disciplines that it can be difficult to collaborate as a team. Creating a team with exclusively ninth-grade teachers offers the teachers opportunities to learn from other ninth-grade teachers and know their students better.

These recommendations highlight specific areas that can be addressed at the university and secondary school levels. Teacher-preparation programs can provide preservice teachers with

collaborative opportunities and experiences with the implementation of interdisciplinary teaming exercises. This purposeful concept might afford preservice teachers the opportunity to learn how to collaborate with other aspiring teachers, especially ones from different disciplines. Additionally, for practitioners such as teachers, freshman academy coordinators, and instructional coaches there are several areas to consider when developing interdisciplinary teaming at the ninth-grade level. As mentioned, when planning to create interdisciplinary teaming in the ninth-grade level, a variety of stakeholders and programs need to be in place.

Summary of Recommendations

The purpose of this study was to shed light on the professional learning teachers reported when participating on an interdisciplinary team at the high school level. The findings from this study yielded important implications for future research in the areas of preservice teachers' collaborative opportunities and implementing interdisciplinary teaming at the high school level. As noted in this study, a number of high schools have successfully implemented interdisciplinary teaming. Further research on the benefits of interdisciplinary teaming on teachers and students needs to be addressed. As such, successful high schools that have interdisciplinary teaming need to call attention to their accomplishments in relevant publications and presentations.

Even though this study encountered numerous barriers and obstacles, the teachers collectively shared a unique connection and motivation that superseded the structural function of a traditional high school setting. This type of collaboration was instrumental in that interdisciplinary teaming was never a concept nor a function at the school. Yet our team made a small but significant impact on each other and especially on several students.

Concluding Thoughts

As a former classroom teacher of 17 years and a current freshman academy coordinator, I designed this study to report the professional learning of teachers when participating on an interdisciplinary team at the high school level. I wanted to see if my ten years of experience with teaming at the middle school level could transfer to a high school setting. Throughout our two years of work, we experienced moments of joy in helping students and learning new strategies, but also experienced moments of deflation when trying to work against the structural pillars of a high school setting. At times, we felt our PLC was simply required to satisfy a district mandate and was less about actual teacher learning. All in all, and most importantly, teacher learning did happen at the high school level, and we did have a small but powerful impact on a few of our shared students.

At the end of two years working together as a team, I decided to move to South Carolina and take on a leadership role at a freshman academy. It was a bittersweet experience for me because our team had all intentions of continuing our work and implementing changes regarding the eighth- to ninth-grade transition. I wondered if the team would continue without me, and in true action research model, the spiraling of learning continued in a new PLC format. Unfortunately, the COVID-19 pandemic resulted in the closure of in-person learning for over a year at Carlton High School, and the PLC did not survive.

Currently, I am in my third year as the freshman academy coordinator at a high school in South Carolina. This particular high school has many similarities in size and demographics as CHS. I have the ability in my new role to implement many of the findings from my research studies. For example, the eighth- to ninth-grade transition has been my focus for two years, and I have designed and implemented several programs to help our rising ninth graders. It is my hope

that with the completion of this dissertation I will be able to accurately articulate the need to implement interdisciplinary teaming in the ninth grade at my current school.

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Appendix A

Recruitment Letter

June 15, 2017

Dear [CHS Teacher],

Hello. My name is Glynnis Childress, and I am a doctoral student from the Teacher Education Teacher Development Department at Montclair State University. I am interested in talking with you about participating in my action research study. This study is about understanding the reported professional learning of teachers in an interdisciplinary team. You're eligible to be in this study because you teach ninth-grade students and will have ninth period off, which has been scheduled as a collaborative period time for teachers.

This study will involve your participation in an interdisciplinary team at the ninth-grade level. This will be a yearlong commitment. The goal for this interdisciplinary team is to meet once a week during the scheduled collaborative period to discuss our practice, common students, and opportunities for professional growth. Additionally, we will also meet once a month after school during the district required Professional Learning Communities (PLCs) meeting time. This monthly meeting time will count towards your required PLC district hours.

You must be 18 years of age or older to participate. If you have any questions, please contact me (Glynnis Childress) at gchildre@[redacted] or 201-[redacted]. Thank you for considering participation in this study.

The Montclair State University Institutional Review Board has approved this study.

Sincerely,

Glynnis Childress, Doctoral Student

Teacher Education Teacher Development, Montclair State University

Appendix B

Interview Protocol

My proposed research interest: to research the reported professional learning of ninth-grade teachers participating in an interdisciplinary team. I will seek to answer the following questions:

Background questions:

1. Can you tell me more about how you ended up teaching ninth grade here at CHS? (alternative wording: what was your journey to wind up here?)
    a. Make sure they answer: how long they have been a teacher in this district, how they were prepared (alternative route?), other grades they have taught (specifically, *do they have middle school team experience?*)
2. What experiences have you had so far or in the past with teacher collaboration? Were these experiences helpful? Did these experiences prepare you for collaborative work? Have you ever worked on an interdisciplinary team before? What does that mean to you?

Main questions:

(To get at the question: How do members of a ninth-grade interdisciplinary team report their professional learning experiences as members of the team?)

1. Can you think of anything that you have learned so far from working on an interdisciplinary team? (student relationships, teaching practices, curriculum, etc.)
2. Has any member of the interdisciplinary team impacted or influenced your practice so far? Can you think of a time when someone on the team has influenced your practice?

3. How, if at all, have ninth-grade teachers' collaborative practices been influenced by their participation in an interdisciplinary team?
4. How would you describe an ideal teacher collaboration situation? If you could have your dream collaborative environment - What does it look and sound like?
5. How does this ninth-grade interdisciplinary team emulate that ideal of teacher collaboration so far? Are there any ways that it falls short or could be improved?
6. Have you noticed any ways that your collaboration with other teachers has changed since being part of this team? For example, do you notice changes in how often you communicate/share with your team members or what you talk about?
7. How, if at all, do teachers relationally benefit from their participation in a ninth-grade interdisciplinary team?
8. Have you noticed any ways that your relationships with colleagues changed because of your participation in an interdisciplinary team?
9. How would you describe the relationships among the team members?

Appendix C

Reflection Example #1

Name

Ninety percent of teachers agree that "other teachers contribute to my success in the classroom."

MetLife Survey of the American Teacher, 2009

What are your thoughts about this quote? Agree? Disagree?

Please share any effective strategies you have used with any of our shared students: What are some areas of interests that we should address with administration about our students?

Reflection Example #2

Hi Team,

Hope everyone is doing well and looking forward to a restful few days. I have pasted the questions below in case you are having difficulty logging into Google Classroom. It looks like our next official PLC meeting will be next Tuesday. Thank you for all the meaningful and purposeful conversations about our shared students and strategies you do daily to meet their needs!!!

Happy Thanksgiving!

Glynnis

Reflection: Would you be able to take a moment to brainstorm some thoughts/feelings on the following questions:

1. What are some things (e.g., academic potential or behavioral issues) that concern you about the students this year?
2. Currently, do you have any urgent instructional issues?

Response: Hi: Hope you had a nice Thanksgiving. I look forward to meeting tomorrow. Several of the ninth graders need some major tutorial assistance and they are for the most part not getting it. There is no Level Two, so the struggling students often are working on topics that have traditionally been difficult for them. I would like to address individual pupils when we meet in person. Many of them need some major academic assistance – likely one on one – and don't seem to be getting it. I will talk further when we are together.

Appendix D

School District of [redacted]

[redacted]

[redacted]

[redacted]

2018 – 2019 [redacted] PLC

Please upload to PLC Google Folder Title "Teacher PLC Documents"

PLC Meetings to be held in room: C205

PLC Name: Interdisciplinary Teaming in the Ninth Grade

Group Members:

[redacted]Glynnis Childress

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

Group Norms:

1. Treat each other with dignity and respect
2. Be genuine with each other about ideas, challenges, and feelings.
3. Listen first to understand and do not interrupt when someone is talking.
4. Be mindful of the amount of time you are speaking during team meetings.

Group Goals:

1. Generate a list of common students among the teams (some students might share only two teachers)
2. Discuss how to better serve our shared students and provide examples and strategies we use in the classroom.
3. Invite specialists to participate in meetings when relevant student interventions are being addressed or when outside expertise is needed.
4. Ensure coherence: align professional learning community activities with the school's mission statement, district goals, and action-plan strategies

Group Objectives:

1. To highlight pedagogical strategies that the team uses with our shared students and report to the team successes and areas of concern.
2. To create a strong sense of community and commitment to collaboration.
3. To collaborate with other team members to plan different strategies and approaches to helping our shared students academically, socially, and emotionally.
4. To develop and plan an interdisciplinary approach to teaching and learning with regards to lesson planning.

Timeline:

1. **Dec.:** Generate a list of common students (shared among two and three teachers) that we believe need extra help academically, socially, and/or emotionally.
2. **Jan.:** Discuss and share strategies we have used in the classroom.
3. **Feb.:** Complete a Lesson Study format of observing our shared students in other disciplines
4. **March: :** Complete a Lesson Study format of observing our shared students in other disciplines
5. **March:** Invite Ms. [redacted] to our team meeting to partner and discuss our concerns
6. **April:** Create a list of structural supports and needs to have an interdisciplinary team in place for next year.
7. **May:** Present our data and observations about our team experiences and plan for next year.