CHANGING A HIGH SCHOOL’S MASTER SCHEDULE TO FOSTER TEACHER COLLABORATION WITH A FOCUS ON INSTRUCTION: A CASE STUDY

A thesis presented
by
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to
The School of Education

The Doctorate of Education
in the field of Education

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July 2012
Acknowledgements

Dr. Chris Unger for being an exceptional advisor.

Dr. Sara Ewell for her guidance as my second reader.

Dr. Edward G. Douchette for his generosity and feedback as my external reader.

Ms. Suzzane Costa for her helpfulness in making introductions.

My wife Ms. Elizabeth Sylvia who despite her consistent disdain and mockery of this endeavor, was quite helpful in her criticism and editing.

While, my children Aubrey and Catherine were not helpful in any way in completing my dissertation, but they were a delightful distraction.
Abstract

This study sought to understand teachers’ and administrators’ perceptions of a high school master schedule that is designed to allow for regular peer collaboration and professional development. The study was guided by two central research questions:

1. How do teachers and administrators perceive their high school master schedule that prioritizes regularly scheduled professional development and collaboration impacting student learning?
2. How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?

The research project utilized a single site case study where interviews, document analysis, observation, and questionnaires provided data to inform an analysis in response to the research questions. The location is a large suburban high school located in Southern New England that has recently undertaken significant redesign of its master schedule to increase ongoing professional development and teacher collaboration. The study is interpreted through the theoretical lenses of deconstructionism and organizational culture theory.

Key Words: High School, Master Scheduling, Professional Development, Peer Collaboration, Deconstructionism, Organizational Culture.
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Introduction

The typical master schedule in most comprehensive high schools does not provide regularly scheduled time for professional development and peer collaboration (McLaughlin and Talbert, 2006). However, many organizations, including national and regional school accreditation institutions such as the New England Association of Schools and Colleges or the National Secondary School Principal Association, recommend that teachers and administrators have a regularly scheduled time to reflect upon their work and plan ways to improve teaching and learning. Without regularly scheduled time, teacher collaboration becomes difficult and professional development initiatives may have a more difficult time succeeding (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). This study closely examines how one high school master schedule has been designed to prioritize regular opportunities for professional development and teacher collaboration, and teachers’ and administrator’s perceptions of how this schedule has impacted student learning.

Historically, creating time for regular professional development and professional collaboration has required a change in comprehensive high school master schedules. However, in many high schools, the master schedule is difficult to change. Because of the many athletic and extra-curricular offerings in a traditional comprehensive high school, extending the school day into the afternoon is not feasible in most communities. Additionally, across most of Eastern Massachusetts most comprehensive high schools begin their school day between 7:00 and 8:00, so adding time onto the start of the school day is not feasible. If a high school needs to allocate more time toward a given task like remediation, enrichment, music, long classes or peer collaboration, then the time must come from an existing activity. The simplest rule of a high
school master schedule is that whenever time is added for one activity, it must be taken away from another activity. These decisions are never easy and a school’s allocation of time requires the school to assess its values and priorities. Scholars support the premise that it is very difficult to substantively change a high school master schedule. Delany (1991) states that many master schedules foster the maintenance, and not the growth of the current system. In a similar sentiment, Nyroos (2008) states that the master schedule is largely shaped by perceptions of its value and by past practice, stakeholders indicate.

An ideal high school master schedule would allow for inter-disciplinary and intra-departmental collaboration and would balance time for instruction with regular professional contemplation and collaboration (McLaughlin and Talbert, 2006). Currently at many comprehensive public high schools in Massachusetts, the master schedule does not allow for this as most teachers disseminate three or four different curricula during the five classes they are required to teach. With a heavy and varied workload, many high school teachers may not have the time to grow as educators and instead may have only enough time to complete their individual professional responsibilities. This reality can limit collaboration on classroom instructional strategies and assessment between grade-level teachers who are not in the same department as well (Wells, 2008; Hipp, Huffman, Pankake, & Olivier, 2008).

Significance

In Massachusetts, the New England Association of Schools and Colleges (NEASC) organizes high school accreditation. The 2011-accreditation standards indicate that a school’s schedule must support “professional collaboration among teachers” and that “districts must provide sufficient personnel, time, and financial resources for ongoing and collaborative development” (NEASC, 2010, p1). For a high school to achieve accreditation through NEASC,
the high school must schedule regular professional development and peer collaboration. Though NEASC mandates this clearly through several standards, it does not provide either a framework or a model to achieve this schedule. The NEASC standards provide the *why*, but no guidance on *how* to implement this standard. Given the ubiquitous nature of regional accreditation and the lack of guidance on meeting this essential standard, figuring out when to meet for regular peer collaboration and professional development has become a significant concern for all school districts seeking NEASC accreditation.

Throughout the past decade, time for professional development and professional collaboration among practitioners in schools have been given increased attention (Wells, 2008; Hipp, Huffman, Pankake, & Olivier, 2008; Huffman, & Jacobson, 2003). There are many challenges to fitting time for professional efforts into the master schedule, including balancing the time needed to assess student work; to physically prepare the classroom and class materials; to plan lessons; and to complete administrative tasks. One of the major challenges is identifying the perceived impact of the schedule on student learning.

Some research indicates that there may be more important influences on student learning than the format of a school’s master schedule and the extent of teacher collaboration. Dexter (2006) studied different high school schedule types, (4/4 Block, A/B block, no block, etc.) and found that the students’ performance and college readiness differed very little between different master schedules. Several studies, primarily focused on student test scores, have found that different high school schedule types have, at best, only a marginal influence on student learning. Since quantitative evaluations of high school master schedule are inconclusive, the qualitative perceptions of a school community’s stakeholders must be evaluated.

Professional learning communities have risen in popularity since the 1990s, when they
became a focus of academic literature. The widely used term can be difficult to define, but a professional learning community can best be described as a collaborative, results-oriented effort of educators focusing on student learning (DuFour, 2004). Mawhinney (2005) suggests that for a better understanding of the correlation between bureaucratic structures and the efficacy of professional learning communities, “in depth qualitative case studies may provide both researchers and districts with more robust understanding of the sources of collective efficacy beliefs that are embedded in teachers’ experiences in professional learning communities” (pg. 31).

Across Massachusetts, more and more emphasis has been placed on school accountability as schools continue to attend to the expectations of No Child Left Behind and the more recent Race to the Top policies. In response to these expectations for continuous progress in student achievement, schools have formed data teams of teachers and administrators to plan for academic interventions for students who are in need of remediation. This new demand for increased time for intervention and enrichment has placed a further burden on the master schedules of schools trying to coordinate a regular time for professionals, each with a complicated set of obligations, to meet. However, recent emphasis on professional learning communities has revealed the necessity for regular peer collaboration. As with all initiatives the immediate question is, “How and when should this be done?” Overall, in every aspect of modern education and education reform, the quest is finding the best use of time. The master schedule impacts every aspect of the school day, and reflects the values of its formulating community through its allocation of time.

As someone involved with the creation of high school master schedules, I have seen how different master schedules limit time for regular professional development and peer
collaboration. At the comprehensive high school where I am employed, I serve as a social
studies teacher, department coordinator and co-president of the union. Each of these
perspectives reveals the great need for regular and frequent teacher collaboration. In addition to
facilitating inter-department collaboration, a master schedule should create time for inner-
department collaboration. The few times I have been able to sit down with another social studies
teacher and compare our assessments or our lesson plans has been incredibly valuable. My
professional experience has verified – through its absence - the significance of regular time for
professional development and peer collaboration the literature on professional learning
communities promotes.

As the literature review of this study shows, many researchers have increasingly
emphasized the potential positive impact of regular peer collaboration and professional
development on student learning. Unfortunately, research on this subject has not fully addressed
practitioners’ perspectives on master schedules designed to allow for regular peer collaboration
and professional development. This results of this study may be significant to any school going
through NEASC accreditation, seeking to implement a professional learning community, or
building their master schedule to balance time for regular peer collaboration and professional
development with other concerns like time for remediation, student advisory or enrichment
programs.

**Practical and Intellectual Goals**

The practical goal of this research project is to explore how a high school master
schedule might effectively support meaningful professional development, teacher collaboration,
and ultimately student learning. This goal is partially realized through the literature review,
which will cover evaluations of different high master schedule models. The literature review
provides breadth of coverage of the central issues and themes regarding high school master schedule design. The case study provides depth through its focus on how one high school’s teachers and administrators perceive the master schedules impact on professional development, teacher collaboration, and student learning.

The intellectual goal of this study is to understand how teachers and administrators perceive the impact of time allocation on student learning. I also desire to understand how a master schedule with a focus on teacher collaboration may impact their perceptions of teaching and learning.

**Summary of Research Questions**

The following two research questions guide this study:

1. How do teachers and administrators perceive the strengths and limitations of their high school master schedule, which supports improving teaching and learning through regularly scheduled professional development and collaboration?

2. How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?

**Summary of Paper Contents and Organization**

This dissertation is presented in five chapters. The first chapter of the paper establishes the significance and context of the proposal’s problem of practice and discusses the theoretical frameworks (deconstructionism and organizational cultural theory) used to interpret and explain the findings of the study. The second chapter presents the recent academic literature on high school master schedules, professional learning communities, and the use of common planning time. The third chapter introduces the research methodology. In this section, a single site case study is proposed and data collection and analysis methods are discussed. The fourth chapter
reports the research findings and the fifth chapter discusses those findings in relation to the theoretical frameworks and the literature review.

**Theoretical Framework**

Two theories have guided my research into high school master schedules: cultural organization theory and deconstruction. These two theories informed my analysis of the school community and its perceptions and feelings toward their high school master schedule specifically designed to promote regular professional development and professional collaboration.

**Organizational culture theory**

Organizational culture theory allows for an assessment of a school community’s perception of the master schedule. Bush (2007) states that one of the central themes of cultural organizational theory is that it “focuses on the values, beliefs and norms of individuals in the organization and how these individuals perceptions coalesce into shared organizational meaning” (p. 156). Although most schools devise the master schedule with a computer problem which reduces the process to a time-allocation equation, the organizational culture lens reveals the significance of individual and community valuations of that time allocation. Cultural models emphasize, “that effective organizational change always implies cultural change (Morgan, 1997 p. 150). Such cultural change in schools can be inspired by an individual, but needs a community to be enacted: In studying the perceptions of a high school master schedule, the culture of the school makes all the difference between the promise of positive impact and the realization of genuine organizational change.

Part of this cultural change is an understanding of the school community. Battistich, Solomon, Watson and Schaps (1997) define school communities as “places where members care about and support each other [and] actively participate in and have influence on the group’s
activities and decisions, feel a sense of belonging and identification with the group, and have common norms, goals, and values" (p. 137). For Battistich et al., the most important aspects of a learning community are autonomy, competence, and caring. Additionally, teachers’ perceptions of school culture “were highly correlated with the principal’s competence,… positive relations between teachers and students, and… supportive parents” (Battistich, et. al. pg. 143). Although students’ perceptions of the school community were most affected by socio-economic status, the researchers found that even in poor schools teachers’ belief in their own efficacy significantly impacted their view of the school’s culture. Understanding how the school community constructs its own identity and values is essential when trying to understand how they perceive a school master schedule that prioritizes peer collaboration and professional development.

**Deconstructionism**

Originating in the field of literary theory (Voerman & Gustafson, 2004), deconstructionism “denies the existence of one meaning of a text…. Instead of focusing on the explicit message of a text, the deconstructionist focuses on its hidden assumptions. By uncovering the things not said, meaning is constantly changed” (Voerman & Gustafson, 2004, p. 83). First conceptualized by the French theorist Jacques Derrida, deconstructionism builds on analytical frameworks developed by the philosophers Heidegger and Nietzsche to reveal the implicit assumptions of meaning by making visible the cultural constructs present in language and other cultural systems. Though primarily utilized in literary theory and philosophy, deconstructionism has been used to analyze educational systems and situations (Blake, 1996 & Tushnet, 1995).

Deconstruction examines the importance of unstated meaning and values. When applied to a master schedule, deconstructionist theory draws attention to how individuals, rather than the
institution as a whole, create meaning from the allocation and subsequent use of time. Blake (1996) writes that deconstructionism, “alleges, perpetually shifting in meaning…this precludes those identities of meaning in whose terms discourses can be differentiated from each other and defined” (pg. 9). In this way, deconstructionist theory can be used to understand how stakeholders perceive a master schedule, because it is the stakeholders who assign meaning and value to a high school master schedule.

In his attack on postmodernist theory Kahn (1993) writes that deconstructionism abandons “the search for generalizable research findings because the concept of generalizability itself is flawed” (p. 3). For Kahn this opens up a confusing world for both the researcher and the student. Deconstructionists deny moral absolutes and for Kahn this represents a slide toward moral relativism and intellectual uncertainty. Supporters of deconstructionism like Vidich and Lyman (1994) acknowledge that deconstructionism contains an “all-encompassing critical skepticism about knowledge” (p. 41). This skepticism includes not only conventional truths that may be deprived from the research, but also from the experiences of the subjects and the researcher. Deconstructionism is particularly useful for analyzing the embedded meaning in a given situation and the various meanings of all relationships. For deconstructionists like Derrida (1976) power is an inherent feature in all relationships. Examining the role of power in a relationship is easy when that power is blatant, but in more subtle settings, like a high school, deconstructionism provides a tool for examining the role of power relationships. To achieve this subtle examination, Trushnet (1995) emphasizes the role of the researcher and their role in looking for “hidden messages” to achieve the task of deconstructionism “to raise questions about relationships and ideas” and “make them problematic” (p. 10).
Cinnamond (1991) defines deconstruction as “a mode of analysis that seeks to undo different processes of signification (p. 695). The deconstructionist perspective of master scheduling allows for an examination of why certain allocations of time are considered significant in a school setting. Since time in school is finite, every addition to the schedule means there must also be a subtraction or reduction in another area. Deconstructionist theory also provides a model for learning about what the community values in the school and master schedule. Through examining what is brought to the forefront, deconstructionist theory discloses what a school or master schedule marginalizes. Deconstructionism takes apart - deconstructs - the conceptual system within a high school master schedule: while every school has a stated mission or goal behind their scheduling decisions, deconstructionism can be applied as a method of analysis that focuses on the unstated, but present, implications and externalities of a master schedule. To deconstruct the schedule is to study what is being included and what is being excluded; for example, if a school decides to emphasize peer collaboration in its master schedule then it is deciding not to emphasize dozens of other worthy possible allocations of time (given the finite length of the school day). Applied to master schedules, deconstructionist theory focuses on what is lost or reduced as a result of those choices. Examples of lost or reduced areas might include: less time in school, less instructional time, and less individual preparation/study time.

Chapter II: Literature Review

Overview

Many educators (DuFour, 2004, Graham, 2007, McLaughlin and Talbert 2006) and education organizations (NEASC, 2011) have argued that professional development and peer collaboration are essential ingredients for a functional school community, yet many
comprehensive high schools struggle to build regular time into the master schedule for professional development and peer collaboration. To better understand the lack of regular time in the master schedule for professional development and peer collaboration, this literature review presents a sampling of the literature that focuses on the following question: What does the literature reveal about the value of a master schedule that attempts to create opportunities for professional development and peer collaboration and how do school teachers perceive the value of that time?

There are a variety of reasons why these questions are significant. First, the most recent NEASC accreditation standards (2011) indicate that a school’s schedule must support “professional collaboration among teachers” and that “districts must provide sufficient personnel, time, and financial resources for ongoing and collaborative development” (NEASC, 2010, p1.). Though NEASC mandates this clearly through several standards, it does not provide either a framework or a model to achieve this schedule. Second, throughout the past decade there has been an increase in attention given towards time for professional development and peer collaboration among practitioners in schools (Wells, 2008; Hipp, Huffman, Pankake, & Olivier, 2008; Huffman, & Jacobson, 2003). With this increased focus on professional time, schools must consider how to incorporate it into the master schedule.

This literature review covers several different approaches to incorporating regular professional development and peer collaboration time into the master schedule, including research into master schedules, small learning communities, professional learning communities, common planning time, and the allocation of time in master schedules. A literature review of professional learning communities and common planning time is included because these terms
are commonly used to refer to time designated for professional development and peer collaboration (Huffman, & Jacobson, 2003).

**Recent Developments and Research Related to High School Master Scheduling**

The most dramatic change in high school master schedules in the past twenty years has been the movement to extend instructional time through the adoption of block scheduling. Additional reforms include the transition of large comprehensive high schools into small learning communities and a renewal of efforts to utilize team teaching. An influential National Education Commission on Time and Learning 1994 report on instructional time in the school day convinced many educational leaders that there was a shortage of instructional time in the school day (Lawrence & McPherson, 2000). As a result, over the past twenty years many American high schools transitioned from a traditional seven period day to a block schedule, which typically consists of four or five periods of 75 to 90 minutes meeting either every day for a semester or every other day all school year (Geiken & Larson, 1999, Rikard & Banville, 2005, Veal, 2000). Educational leaders expected that this change would allow for increased opportunity for common planning time and that longer periods of instruction would increase student learning. Zelkowski (2010) writes that in 2005, the most common allotment of time, in a high school, for a learning period was 90 minutes, but the majority of classes in American high schools, by a 2 to 1 margin are between 50-60 minutes.

Several scholars have done quantitative analysis to attempt to determine if block scheduling produces improved student learning outcomes (Dexter, Tai and Sadler, 2006, Harmston, Pliska, Ziomek, & Hackman 2003, Harvey, 2008, Veal, 2000). However, despite the enthusiasm for block scheduling in the past twenty years, current literature on block schedules reveals that block scheduling has not improved student performance or provided teachers with
additional time for regular peer collaboration and professional development. Dexter, Tai and Sadler (2006) conducted a study of 7000 students from 128 different high school science classes. Students in these classes attended schools with either a traditional seven-period schedule or a block schedule. Based on the student performance in their introductory college science classes, the variety of master schedule had little impact on student performance. Harmston, Pliska, Ziomek, and Hackman (2003) conducted a study of American College Testing (ACT) scores in 450 high schools and found that students in block scheduling produced scores neither better nor worse than students in schools with traditional schedules. Through a thorough examination of student performance in mathematics, Zelkowski (2010) argues that block scheduling is does not lead to increased student achievement in math. Adding to the lackluster endorsement of block scheduling, a College Board study (1998) found that students who took Advanced Placement (AP) American history or calculus in a block schedule performed worse than students in traditional seven-period classes. This study was limited in that it only studied students in 4X4 semester block schedules (90 minutes classes every day, per semester). Gill (2011) conducted a study of reading math standardized test scores of 43 Virginia middle schools with different types of block schedules and found no statistical difference for the majority of students, though black and Hispanic students performed better in schools with an A/B rotating block schedule. Gill suggests that the small sub-groups of black and Hispanic students in these schools may have impacted the results for these minority groups. Finally, Harvey (2008) studied the relationship between student performance and master schedule variety on the Massachusetts Comprehensive Assessment System in over 259 Massachusetts public high schools. His findings concluded that there was no statistical difference between schedule type and student performance (Harvey, 2008). These studies support the contention that the any high school master schedule design can
show significant gains in student performance and that the only value of a high school master schedule is in the perceptions of the schedule and not in student performance indicators.

Trenta and Newman (2002) provide one of the few defenses of block scheduling when they conclude that block scheduling has a positive impact on student learning. Unlike Nicholas (2005) who studied five high schools and Dexter, Tai, and Sadler (2006), who studied hundreds of high schools, Trenta and Newman draw their conclusion from observations of just one high school. At the conclusion of the article, the authors concede that they did not consider “variables related to preparation or in-service of the teachers for teaching in the block format, the teaching methodologies used by the teachers, and the effect of moving from an older cramped building to a new, spacious high school building” (Trenta & Newman, 2002, p. 64). At the conclusion, the strongest endorsement of block scheduling Trenta and Newman have is that it can be “an influence” on student learning (p.64).

Quantitative measures like scores on standardized tests or grades on introductory college classes do not conclude that any master schedule design is inherently superior. Qualitative measures, like stakeholder perceptions, show the only value of block scheduling. Nelson (2005) noted marginal gains in student grade point average (GPA) in high school English Language Arts (ELA) classes, but noted positively that students opted for more ELA electives. In a study of high school physical education teachers and their perceptions of block scheduling, Rikard and Banville (2005) found that the majority of the physical educations perceived that students learned more in the block schedule, than in the previous traditional schedule. Physical education teachers reported lower stress levels and reported fewer issue with student discipline. Geiken and Larson (1999) noted that teacher collaboration decreased with the adoption of block scheduling because teachers perceived that they had less instructional time and could not afford time for
peer collaboration. Reaching a similar conclusion, Veal (2000) studied a high school where three different master schedules were utilized simultaneously. Veal (2000) reported that teachers in this school reported that the increased pace of teaching in the block schedule reduced time for peer collaboration. Additionally, the teachers reported that both the hybrid-block and full-block schedule reduced time for self-reflection. Reaching the same conclusion as Dexter, Tai and Sadler (2006), Harmston, Pliska, Ziomek, & Hackman (2003), and Veal (2000) conclude that the quantitative data revealed that no particular master schedule type was superior.

Small learning communities are another variation in the comprehensive high school master schedule. Small learning communities are “small, interdisciplinary teaching and learning teams; rigorous and relevant curriculum and instruction; and a focus on inclusive programming and inclusive classroom practices” (Armstead, Bessell, Sembiante, & Plaza, 2010, p. 365). Small learning communities are often organized around interdisciplinary teams of several hundred students who remain with teachers for multiple years (Oxley, 2008). An essential component of the small learning community is that “teachers share students and have a common planning time” (Oxley, 2008, p.366). The focus on peer collaboration has raised concerns for some policy makers, whom Little (2003) reports are generally not convinced that teachers working together away from students generate a beneficial investment. However, a major effort has been underway in the past in the late 1990s and early 2000s to combat this perspective, supported in part by the Bill and Melinda Gates Foundation, which has invested over $110 million into small learning community reform efforts over the past decade (Thompson, 2011).

The Early College High School Initiative (ECHSI) put forth by the Bill and Melinda Gates foundation had regular time for peer collaboration as one of its founding principals (46), but in their study of Hudson Early College High School (HECHS), Thompson and Ongaga
(2011) note difficulties in fulfilling this goal. Founding teachers at HECHS reported that collaboration was never “neither widespread nor a formalized part of the teaching environment” (51). Additionally, veteran teachers reported that administrative and bureaucratic restraints made collaboration difficult. New teachers responded that they often clashed with veteran teachers during the infrequent times they did collaborate.

Oxley and Luers (2011) found that schools had difficulty absorbing a small learning community into their master schedule. The complexity of a comprehensive high school’s master schedule often posed insurmountable challenges: “In order to fill classes, these schools’ master schedules continued to slot students for advanced or remedial courses without regard to their team assignment” (p. 63). Though they found many benefits with the small learning community model, the authors also noted that finding common planning time for teachers was a difficulty in pursuing a small learning community model. To find time for common planning for interdisciplinary teams, Oxley and Luers suggest that schools utilized a late start schedule for students, so that teachers may collaborate before the day begins.

Despite its growing popularity, the small learning community movement has not been shown to improve students’ academic achievement (Ravitch, D. 2010). Armstead et al. (2010) report that in thirteen Florida schools that they studied, none of their survey respondents reported that their freshman academies were successful (p. 371). Among the reasons cited, to explain why the small learning communities are not raising academic achievement are the difficulty in transitioning from Freshman academy into the larger school community and students who fail the Florida Comprehensive Assessment Test (FCAT) and need to take remediation courses are able to fully participate in the school’s small learning community. Despite showing no substantial improvement in academic achievement, J. Ravitz (2010) found that teachers at
schools that utilized a reform based small learning community model were 10% more likely than teacher respondents in comprehensive schools to respond that they “frequently had regularly scheduled meetings that focused on instructional practices and students’ learning” (p. 300).

Given the requirements of meeting annual yearly progress under NCLB, schools are emphasizing remediation in their curriculums. Washington DC’s Middletown High School has developed a model to assist struggling learners (Aguilar, Morocco, Parker & Zigmond, 2006): Every day all students take part in a learning seminar, where students practice study skills, make up work and take assessments. During the learning seminar time, teachers meet together to plan in department and team meetings. The learning seminar is staffed by teachers on a rotating basis so that the majority of teachers may attend to their peer collaboration and professional development. During the learning seminar teachers “teachers focus on analyzing students’ academic needs and strategizing to meet them in a more concerted way” (p. 161). As with many programs that seek to cover all students, the learning seminar does not always fulfill its promise. Students who need specialized attention in their learning or students who participate in the school’s internship program regularly miss the learning seminar. Additionally, not all departments are able to meet during the learning seminar time. Special Education teachers for example divided their time between their academic teams and working with their students during the learning seminars.

**Professional Learning Communities**

Professional learning communities have emerged as a popular method of establishing regular time for peer collaboration and professional development. Professional learning communities base their success on building a community of learning and changing the classroom focus from teaching and instruction to student learning and engagement (DuFour, 2004). While
the literature on professional learning communities is extensive, the articles selected for this review focus on teacher perceptions of professional learning communities and on attempts to coordinate regular time for professional learning communities.

Much of the support for professional learning communities has come from recent studies advocating an increase in peer collaboration and regular professional development. A 1999 study (Garet, Birman, Porter, Desimone, Herman, & K. Suk Yoon) for the United States Department of Education (US DOE) advocated the benefits for regular time for peer collaboration and professional development: “By locating opportunities for professional development as part of a teacher’s regular work day, reform types of professional development may be more likely than traditional forms to make connections with classroom teaching, and they may be easier to sustain over time. (p. 79). Another study sponsored by the US DOE (2008), provides sample methods for building a schedule with regular time for professional development and peer collaboration. NEASC cites these two studies to support their accreditation requirement that all schools have regular time for regular peer collaboration. Curiously, for a body that does focuses on secondary school accreditation one of the examples is from an elementary school. At the elementary level, the report speaks to “strategic” scheduling of art, music and physical education classes to coordinate time for teacher professional development (p. 35). The report also makes a similar recommendation with the scheduling of recess and Title I remediation. While the strategic emphasis on scheduling is important, the recommendations do not translate well into a comprehensive high school model. Another example from a comprehensive high school utilizes a two-hour weekly early release as time for collaboration (p. 34).

Additional support for professional learning communities has come from educational think tanks. A report by the National High School Center (Dolejs, 2006) argued that “[h]igher
performing schools incorporated time within the school day for teachers to collaborate on ways to address needs indicated by data and classroom observations” (p.6), though Dolejs does not provide any specifics on how this is accomplished. Another study, by Education Trust (2005), supports this sentiment by recommending that at highly effective school “[t]eachers had regular, set-aside time during which they worked together on curriculum and instruction” (p.32).

Though government and advocacy organizations have validated the need for professional learning communities, academics and practitioners have been the most ardent supporters of the practice.

Kruse and Louis (1993) argue that time for regular peer collaboration and professional development must be built into the school calendar and cannot simply be “tacked on the ends of the already tiring school days”; therefore, time for peer collaboration must be “conceptualized in two ways, first teachers must be provided with the means to meet on a daily basis…[and] provision must be made for regular connections between members of the faculty (p.17). DuFour (2004) in defining the essential components of a professional learning community asserts that “schools must also give teachers time to analyze and discuss state and district curriculum documents (p.5). Among the pioneers of professional learning communities, there is a consensus regarding the need for regular time for peer collaboration and professional development, but no framework for how to actually build that time in the master schedule.

The literature on professional learning communities tends to focus more on how to transition toward a culture of collaboration and less on when and where this transition should take place. The literature on professional learning communities documents a number of themes in building time for professional learning communities. Common planning, teaming, and release time are all methods mentioned in the literature as methods for implementing professional
learning communities, but none of these may be put into practice without revising the master schedule. As DuFour, DuFour, Eaker and Karchanek (2009) write in an introductory chapter on professional learning communities, concerns over the master schedule are the “single most proffered explanation as to why a school has not yet created a systematic plan of interventions when students do not learn” (p. 32). These authors argue that student interventions are one of the most important aspects of the professional learning community. Outside of a few generic examples of rotating classes of differing lengths, DuFour et al., (2009) simply state that if the “current schedule does not allow you to provide students with something as essential to their academic success as extra time…you should change it” (p. 33). Unfortunately, DuFour offers no actual guidance for building a master schedule that provides for time for either professional learning communities or regular student interventions. Stoll, Bolam, McMahon, Wallace and Thomas (2006) in their extensive review of the literature on professional learning communities conclude that many attempts to create professional learning communities do not create sufficient time for the professional learning community to take place.

Models for implementing professional learning communities differ among elementary, middle and high schools. McLaughlin and Talbert (2006) state that creating professional learning communities in high school “pose the greatest challenge because of [the high schools’] organizational complexity” (p. 62). Perhaps as a result of this difficulty, the literature on successfully scheduling time for professional learning communities high schools is sparse. In a case study of two schools which implemented professional learning communities at the same time, Morrissey (2000) noted that the two schools attempted a partial alignment of planning blocks. While certain teachers in areas where there was a specified need, such as special education, were given common planning time, early release days were the only opportunity for
the entire faculty to engage in peer collaboration (Morrisey, 2000). As a result, the partial alignment of some common planning time blocks did not achieve the schools goal of having widespread common planning time for the entire faculty. Morrissey indicates that in the successful schools she studied, building administrators “provided the insight and leadership to seize the catalyst as an opportunity for change” (p.41). This leadership was an essential ingredient toward finding the time for peer collaboration and professional development.

High schools can learn many lessons from elementary and middle schools. Burnette (2002), an elementary school principal, documents how her school achieved time for professional learning communities by reorganizing the school into teams that allowed time “to help teachers engage in collective inquiry related to teaching and learning” (p. 3). The entire school’s master schedule was reorganized to support peer collaboration and professional development. Mertens, Flowers, Anfrara and Caskey (2010) indicate that teaming does provide middle school teachers with regular time for peer collaboration. Unlike Mertens et al. (2010), Burnette (2002) utilized a network of parent and community volunteers to supervise children so that time could be freed up for teachers to work in their professional learning communities. This approach differs from DuFour et al., (2009) who advocates that regular non-instructional time in the school schedule should be first directed toward student interventions before peer collaboration and professional development.

Teacher buy-in and positive perceptions of the time invested in peer collaboration and professional development are essential to sustaining professional learning communities. Hipp, Huffman, Pankake and Olivier’s (2008) research indicates that school culture plays a definitive role in both forming a professional learning community and ensuring that the professional learning community makes a positive impact on student learning. Hipp et al. believe that a
“school culture in which teachers work collaboratively is a necessary component of school success” (p. 176); the efficacy of the professional learning community relies on numerous elements of that school culture. Huffman and Jacobson (2003) attempt to determine the pre-existing qualities that a school and its culture must possess for a professional learning community to be successful. Building off of Senge’s *The Fifth Discipline* (1993), Huffman and Jacobson (2003), identify six core processes that a learning community must possess: capability, mutual commitment to learners, open communications, continuity, collaboration, and democratic organization (p. 242). Interestingly, the majority of the respondents to the Huffman and Jacobson study reported that their schools demonstrated most of the identified qualities of a professional learning community, despite not working in schools that had a formal or structured professional learning community. The authors conclude that this provides an easy foundation for the establishment of professional learning communities, though the authors could have just as easily concluded that these schools, and their faculties, would not see the need for branding their collaborative and professional learning environments as a professional learning community.

While Huffman and Jacobson’s (2003) study only focused on 83 respondents, Macwinney, Haas, and Wood (2005) research surveyed 2400 teachers in 49 Harford County, Maryland, public schools. Macwinney, Haas and Wood focused on the efficacy of teacher collaboration. They conclude that schools which believe they have a higher level of peer collaboration and positive school culture also believe that this translates into improved student learning outcomes. Like Huffman and Jacobson (2003) Macwinney, Haas and Wood (2005) believe that a professional learning community will be more effective where a positive school culture already exists. They write that “teachers who perceive their school to be characterized by shared leadership, focused vision, collaborative work, shared observation, and supportive
conditions also perceive their colleagues to be effective in bringing about student learning” (p.28). In contrast, Stoll, Bolam, McMahon, Wallace and Thomas (2006) cite a study of junior and senior high schools in the Netherlands which concludes that “shared goals, joint decision-making, shared responsibilities, consultation and advice were important but insufficient to improve educational practice and, consequently, student achievement” (p. 231). While neither Stoll et al. nor Macwinney, Has and Wood draw a direct correlation between teacher collaboration and measurable student achievement both articles agree perceptions of collaboration are important to the success of a professional learning community.

Why are some teachers reluctant or resistant to embrace a professional learning community model? Stoll et al., suggest that lack of regular time for collaboration and physical meeting space for collaboration hinder many efforts to develop professional learning communities. Wells’ (2008) research indicates that the resistance to professional learning community is bound up in a school’s culture. Wells create a four-part division of teachers: isolated analyzers, isolated planners, collaborative learners and collaborative planners, with most schools organized around the isolated practitioners. Huffman and Jacobson (2003) also indicate that the lack of shared values in a school culture is a major roadblock toward implementing a professional learning community.

Professional learning communities focus on improving student learning though increased professional development and peer collaboration. The literature on professional learning communities reveals that structural support, largely through a school’s master schedule, is a determining factor in the perceived effectiveness of a professional learning community.
**Common Planning Time**

At the middle school level, common planning time combined with teaming is one method for building regularly scheduled time into the master schedule for peer collaboration and professional development, but Mertens, Flowers, Anfara and Caskey (2010) note that to date, little research has been conducted to guide teachers on how to best use their common planning time. They recognize a gap in the literature around effectively structuring common planning time, a significant challenge for practitioners. With so much uncertainty about best practices, Mertens et al.’s research indicates that tensions develop between discussing specific student learning needs or discussing best instructional and assessment practices for many middle school teachers.

Burnette (2002) found that the challenge of restructuring time was difficult as “many of the teachers had worked together for years and some had used their own time to plan together in the past” (p.3). The formalization of common planning time in a master schedule can, but does not necessarily, lead to increased collaboration within a school. Kruse and Louis (1993) identify that many teachers are used to cooperative and not collaborative relationships. In a cooperative relationship, for example, teachers might share materials and discuss their experiences with shared students. In a collaborative relationship, for example, teachers work toward jointly producing lesson plans and assessments together. Without a formal structure, teachers often will spend their common time discussing student concerns while reliving “war stories on classroom activity” and rarely mentioning “teaching practices or student learning” (p 13). Kruse and Louis contend that through a system of shared values and common goals, teachers can better structure their time dedicated toward peer collaboration.

dissertations that explore the intersection between common planning time and teacher collaboration. Drolet’s dissertation explores the various approaches that Rhode Island middle schools have taken to comply with a 2006 law requiring middle school teachers to have at least four opportunities for common planning time per week. To make compliance with the law meaningful, schools faced two primary challenges: creating time in the schedule for common planning time and ensuring that the common planning time positively affected student learning. Drolet writes that commonly held goals and a “collective moral purpose” can “allow everyone to have responsibility for changing and improving the educational context” (p.17). Rice’s (2003) dissertation explored the role that school culture plays in the utilization of common planning time. The author, an elementary school principal, analyzed his own school to conclude that culture is a determining factor in the success or failure of common planning time. The dissertation attempts to dissect the elements of a school’s culture and establish the process by which an incoming administrator can assess and improve upon a school’s culture. The primary forum for understanding school culture is common planning time and the leadership of building administration.

Ris (2008) explored the use of common planning time by middle school teachers. She found that transforming common planning time into a formal and professional discussion of instruction and assessment was not easily achieved. Even with a commonly stated goal (to improve student learning) and a structure to support regular peer collaboration and professional development, Ris documented many difficulties in figuring out how to best use common planning time. During her case study, she observed that external factors like labor conflicts, weather events, and interpersonal issues often interfered with time dedicated to peer collaboration and professional development. A serious detriment to the utilization of the
common planning time was the reactive school administration and that the school lacked “a strong, supportive leader available to all of the teachers…. This missing link caused many frustrations with the teachers” (p.171). Ris adds to the literature on common planning time in middle schools by revealing several challenges for building common planning time into a high school. In addition to the logistical challenges of coordinating non-instructional time for teachers of different subject areas, she notes difficulties in using the time effectively.

Howe (2007) studied teacher collaboration in an urban high school that transitioned into learning academies. Using a middle school teaming model, the learning academy students shared teachers in core academic subjects. Built into this school design was limited common planning time for academy teachers, who perceived that the common planning time was an essential ingredient of the success or failure of their academy. Howe documents the tensions between the school’s promise of planning time, which was not available until November of the year the academy opened, and the teachers insistence that the “academy without common planning time is just a bunch of kids sharing the same teachers, a learning community in name only” (Howe, 2007, p.71). Like Ris (2008), Howe found that student concerns, and not academic collaboration made up the majority of conversation during common planning time.

Graham (2007) also found that teacher collaboration during common planning time is more than a matter of schedule structure and school organization. When comparing differing teams and grade levels who, though given the same structural supports, produced very different responses in their common planning time, Graham’s research indicated that school administrators played a fundamental leadership role because “leadership practices served to create a foundation for collaboration within the school, working primarily in a facilitative, rather than causal fashion” p.17).
The literature on common planning time reveals that building common planning time into a master schedule produces two challenges: The logistics of coordinating students and teachers grow more complex as the student grade-level increases, and teachers struggle to use the common planning time effectively.

**Time Allocation in High School Master Schedules**

DeLany’s (2008) research examines the role that the master schedule plays in four different high schools in and around San Francisco. DeLany contends that a high school’s master schedule tends to reinforce the status quo of the school’s community. One of the key tensions that DeLany explores is the promise of choice that is embedded in a comprehensive high school and the reality of the allocation of time that a master schedule provides. Comprehensive high schools typically offer a diverse program of studies, but the master schedule often limits the options students have to select courses from the program of studies. While DeLany’s focus is primarily on the impact of a master schedule on student learning, his conclusions also apply to teacher learning and collaboration. If a master schedule currently isolates teachers from collaborative practices, and the schedule always reinforces the status quo, the schedule must change to allow time for regular peer collaboration and professional development.

Like DeLany, Nyroos (2009) explores the allocation of time in high schools. Using the backdrop of deregulation of the Swedish public schools, the author explores the impacts of greater school autonomy in allocating their school day and calendar. One of the central goals of the time restructuring was to increase teacher collaboration by utilizing inter-disciplinary lessons, but the new schedule and new lessons generated mixed-results; many teachers did not feel that the lessons merited the enormous investment of time needed to create and assess the lessons in a collaborative setting. In a similar finding Whiteley and Richard (2012) surveyed teachers in
British Columbia schools and found that when their school’s master schedule created additional demands on their preparation time, they were far less likely to participate in other school activities. They found that 70% of teachers with full course loads found their duties unmanageable and as a result, they were less likely to participate in other voluntary aspects of the school.

Kubitschek, Hallinn, Arnett and Galipeau (2005) explore the use and allocation of time in typical high school master schedule. The authors set out to determine if students who had schedule changes during the school year experienced negative impacts on their learning and subsequently concluded that there was little to no difference on student performance for students who experienced reduced instructional time in the school year. The authors also explore a variety of ways that time is not spent on learning in a typical high school. These included, but were not limited to, field trip travel time, assemblies, routine daily and class attendance and most importantly scheduling errors. This study suggests that if more time in the high school master schedule is dedicated to regular peer collaboration and professional development, then student learning will not suffer.

**Summary**

Time is one of the most precious commodities in education. Time is allocated through a master schedule that embodies the values of a school. Mission statements may state the goals and aspirations of a school, but the master schedule truly reveals the mission of a school. The literature on block scheduling over the past twenty year does not reveal that any particular type of master schedule produces better student learning outcomes or increases time for professional development and peer collaboration. The literature on professional learning communities reveals that administrative support, or more accurately, structural support for professional learning
communities is essential for their success. The extent to which a master schedule allows for regular time for professional development and peer collaboration, is an excellent barometer of how committed a school actually is to sustaining a professional learning community. Schools that establish professional learning communities without building the structural support for collaboration are following educational fads without dedicating themselves to substantive change. The literature on common planning time in middle schools suggest that transitioning teacher focus toward discussions of instruction and assessment is an area where much more research is needed. In middle schools with common planning time teachers are meeting, but the literature suggests that these teachers are not frequently focused on professional development or peer collaboration. If regular time for professional development and peer collaboration is built into a high school master schedule, the experiences of middle school teachers will be valuable subjects from which to learn.

Chapter III: Research Design

Educators (DuFour, 2004, Graham, 2007, McLaughlin and Talbert 2006) and education organizations (NEASC, 2011) agree that professional development and peer collaboration are essential ingredients to a functional school community and schools should make time in the master schedule for these professional activities.

This dissertation explores teachers’ and administrators’ perceptions regarding the use of a master schedule that emphasizes professional development and teacher collaboration for student learning, through a qualitative case study. Butin (2010) writes that qualitative research methods allow for “data gathering that can be extremely deep and take into consideration opinions and perspectives that may not be visible or obvious” (p. 76). Creswell (2009) states that qualitative research methods “seek to establish the meaning of a phenomenon from the views of the
participants” (p. 16). The qualitative approach is best suited towards understanding how stakeholders in a school perceive the value of a particular high school master schedule design.

**Research Questions**

Maxwell (2005) states that research questions, “are the hub” of any research design model. The qualitative case study is guided by the two following research questions:

1. How do teachers and administrators perceive the strengths and limitations of their high school master schedule that supports improving teaching and learning through regularly scheduled professional development and collaboration?
2. How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?

Data collection instruments and analysis protocols have been developed in pursuit of answers to these three questions.

**Methodology**

The research questions are addressed through a qualitative case study research design. Creswell (2007) states that case study research “involves the study of an issue explored through one or more cases within a bounded system” (p. 73). The “bounded system” that this project will explore is a high school master schedule that emphasizes regular time for peer collaboration and professional development is. A case study of one high school whose master schedule is designed for regular peer collaboration and professional development reveals teachers’ and administrators’ perceptions of the schedule. Yin (1989) defines a case study as “an empirical inquiry that: investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evidenced and in which multiple sources of evidence are used” (1989, p. 23). In this case, the “contemporary phenomenon” and the “real
world context” will be a high school’s implementation of a master schedule that emphasized both peer collaboration and professional development.

**Site and Participants**

The school included in this study was selected through purposeful sampling. Frankel and Wallen (2007) state that with purposeful sampling the researchers “use their judgment to select a sample that they believe, based on prior information, will provide the data they need” (p.99). For this research project the prior information consists of the existence of the specific master schedule design specified by the two research questions. The high school identified is one that has recently implemented a master schedule for the explicit purpose of increasing teacher collaboration and professional development for the benefit of increasing student learning. Creswell (2007) suggest that purposeful sample allows the researcher to show “different perspectives on the problem or event” (p. 75).

The school that is the subject of this research proposal is regarded as a high performing school as determined by statewide test scores and the high percentage of graduates who attend selective colleges and universities. A moderately high performing school is of more interest than studying a school that is not meeting annual yearly progress because an ”underperforming school” typically selects a schedule that will accommodate the need for student remediation. In these circumstances, larger external forces impose the new schedule upon the school community. The school selected in this research study has generous financial support and ideal social and economic learning conditions. In this case, I am more interested in studying the concept of cultural change in a high performing school because such a school often chooses to change rather than having change forced upon them, as is the case with “underperforming schools.”
The school that is the focus of this research study has a high school master schedule built explicitly for peer collaboration and professional development. Many high schools build their schedules around Advanced Placement classes, band, student-internship programs or dozens of other priorities, but this school appears to have decided to make peer collaboration and professional development a priority. This school is unusual for having undertaken a significant change to its master schedule to emphasize professional development and teacher collaboration. One aim of this study is to ascertain how the schedule developed (the organizational cultural theory framework) and how teachers and administrators believe it impacts student learning (the deconstructionist framework).

Administrative participants in the study include the building principal, because the building principal holds the single most sway in decisions related to master scheduling. The perspectives and insights of the building principal are essential to understanding the stated purposes of the high school master schedule. The building principal makes all of the decisions about scheduling and creates the master schedule without assistance from any other individual. While at many schools the director of guidance creates the master schedule, at the school selected for this research study, the building principal creates the schedule with only technical assistance from the school’s technology director. While the insights of other administrators would be ideal, they were not possible for this study; mid-way through the year that research was being conducted for this study one of the school’s two assistant principals submitted their letter of resignation. As a result, the remaining assistant principal was doing the work of two positions and was not available to participate in this research study.

The teacher focus groups were carefully selected and interviews conducted. Ideally, each focus group would contain academic teachers from multiple disciplines, but the reality of the
selected school made this difficult. Teachers at the case study school work in departments and the focus groups were conducted in department work-rooms before and after teacher common planning time. For many of the reasons discussed in the study, teachers were unavailable to meet after school to participate in focus groups and as a result, focus groups took place during teacher preparation time in the school’s department workrooms.

Data Collection

Data for this study was collected through four primary sources: individual interviews, focus groups, document analysis, and observations of common planning time.

Individual interviews with the building principal. The building principal was interviewed individually to capture his perspective on the relationship to the two research questions. As the individual responsible for designing the master schedule, the building principal has power and oversight of the school day, which gives him a wide view of the school that is not limited to one department or classroom perspective. Interview protocols for the building principal are included in Appendices C-D.

Teacher and department chairs interviews and focus groups. Teachers and department chairs were interviewed in small focus groups or individually either before school, during their lunch period, or during their individual preparation times. In selecting teachers for focus groups and interviews, I chose from those who had planning time available and were present in department workrooms; the focus groups were drawn from teachers meeting in departmental workspaces, and, as such, did not feature teachers from varying disciplines. Interviews and focus groups conducted during the work-day access teachers who might no be available or might not choose to attend outside of work hours, including coaches, advisors, care givers and teachers with low morale.
Focus groups were conducted following Marrelli’s (2008) definition of “a small group discussion in which participants respond to a series of questions focused on a single topic” (p. 39). According to Kjellin (2008) the focus group is a good method for collecting sensitive information about people’s beliefs and underlying values. Because information is collected through group interaction, all viewpoints can be “presented without the individual teacher having to expose himself/herself” (Kjellin, 2008). Specifically, this research project utilizes a nominal group process that is focused around the analysis of a problem (Marrelli, 2008). The focus group was presented with a general question about the value of the master schedule. Participants then shared their responses individually.

The interview and focus groups questions addressed the tensions in the master schedule around balancing the divergent needs of a school. Participants were asked to describe their relationship to the school and the positions they have held. Next, they were asked to describe how they have seen the schedule change during their tenure. These questions establish a basis for introducing questions relative to the first research question on the strengths and weaknesses of the master schedule. Next participants were asked how they would like to see the master schedule revised to better assist student learning. After the teachers shared their thoughts on improving the master schedule, they had the opportunity reflectively upon their colleague’s comments and were encouraged to reach some degree of consensus about their thoughts on improving their master schedule. The focus group and interview protocol is included as Appendix E-F.

*Observations of teacher collaboration time.* In addition to the interviews, observations of teacher collaboration time were conducted. I researched as non-participant observer “not directly involved in the situation [he is] observing” (Frankel & Wallen, 2009, p. 441).
Observations took place within the normal environment set aside for peer collaboration and/or regular professional development and focused on the use of the time set aside in the master schedule for peer collaboration and professional development. The duration of the observation was dictated by the time allocated for collaboration. Field observations (Creswell, 2007) were recorded through a two-column chart with descriptive events and reflective notes (see Appendix F). Four observations of common planning time were conducted, during which I recorded comments and actions of the people involved and collected information on the physical and social environment of the school.

**Document Review.** The fourth major aspect of data collection in this study was a review and analysis of relevant documents. Butin (2010) suggests that although document analysis may appear to some to be “simple and unscholarly,” documents offer a “wealth of unanticipated data” (p.99). Butin continues, writing that it is “oftentimes the seemingly most familiar that is also the least examined” (p. 99). The target documents include: collective bargaining agreements, minutes from school meetings (school committee, school council, faculty councils and faculty and department meetings), curriculum projects created during professional development time, and press reports. The document review and analysis was not limited to the documents listed here, but will likely change as new documents and perspectives emerge from the research.

**Survey.** A survey was designed to be electronically distributed to all teachers in the school to access practitioners’ attitudes towards the master schedule throughout the teacher community. The questions in the survey sought to understand how teachers balance their professional obligations within the master schedule and the extent to which they dedicate time to direct student needs, peer collaboration, and routine bureaucratic requirements. During the later
stages of the research the building principal removed his consent for implementing the survey. A discussion of this takes place within the deconstructionism section of Chapter Five.

**Data Analysis**

The information and views collected from the surveys, interviews, observations, and a document analysis were triangulated to attempt to reach conclusions about the research study. Maxwell (2005) states that triangulation “reduces the risk that your conclusions will reflect only the systematic biases or limitations of a specific source or method” (p. 93). Based on the general premise of data triangulation, any conclusion reached in the research study was supported by multiple pieces of data. Specifically, the information collected was analyzed through coding. Maxwell writes that the goal of coding “is not to count things, but to fracture the data and rearrange them into categories” (p. 96).

The voice of participants was maintained through In Vivo Coding. Saldana (2009) states that In Vivo Coding “refers to a word or short phrase from the actual language found in the qualitative data record” (p.74). The first cycle coding method “prioritizes and honors the participants voice” (Saldana, 2009, p. 74). All of the data from observations, interviews and focus groups was compiled by selections from the participants using this approach. These selections were then reorganized into categories established through the research questions. After this step, the first cycle coding categories were ready to be “reorganized and reconfigured to eventually develop a smaller and more select list of broader categories, themes and concepts” (Saldana, 2009, p. 149).

In the second cycle focus coding, which “searches for the most frequent or significant initial codes to develop the most salient categories in the data corpus” (Saldana, 2009, p. 155). The focused coding did not look at the frequency of comments, but rather used qualitative
content analysis. Qualitative content analysis takes place when “a categorization [is] made of comments made in the dialogues” (Kjellin, 2008, p. 382). Hsieh and Shannon (2005) write that data analysis “starts with identifying and quantifying certain words or content in text with the purpose of understanding the contextual use of the words or content” (p. 1283). After the data was separated by its contextual use, I began to analyze the “underlying meanings of the words or the content” (p. 1284). All comments that reflect a teacher’s perception of his and/or the school’s master schedule were put into categories. The categories were then organized in correspondence with the research questions. Each research question was divided into parts and then the categories of comments were matched. From these matches, themes and sub-themes were developed.

The frequency and emphasis of comments was not used to determine the relative meaning of given comments. An additional researcher, who is also a doctoral candidate at Northeastern University, reviewed the analysis of the comments matches; given the qualitative nature of the process, complete agreement was not achieved, but no substantive difference was noted. Additionally, Maxwell suggests that a researcher establish codes that reflect “broad areas or issues that you establish prior to your interviews or observations” (p. 97).

Creswell (2007) suggests that a researcher can also utilize direct interpretation where the researcher “looks at a single instance and draws meaning from it without looking for multiple instances” (p.163). While a repeated action or comment certainly speaks to the prevalence of a perception, seeking a pattern of response should not limit the analysis of the data. Individuals may have a view that is quite revealing and valuable due to their unique circumstances, insight, or intellect. As the organizational culture framework allows for the analysis and understanding
of widely held views on the nature and value of the master schedule, deconstructionism emphasizes the voice of the individual.

**Validity and Credibility**

The research site selected for this project is not my place of employment, nor do I have any friends or family who are employed at this district or live in the community that the district serves. I help to create the high school master schedule at my place of employment, but I am not an advocate of any particular type of master schedule design. Furthermore, I entered this project without preconceived ideas about the benefit or harm of establishing time for peer collaboration in the master schedule. To determine if a professional believes they have value can only be understood within the context of every unique school situation. In every way, I am approaching this school and its community as a dispassionate and detached observer.

Often respondents may try to tell the interviewer what they want to hear. By talking to multiple stakeholders, I found many different sources for all of my data. As with any sound research project, I based all conclusions on multiple sources of data, which were triangulated to certify their accuracy.

As a single site case study, this study is limited and conclusions reached cannot be generalized for all high schools. Given the unique nature and nuances of every high school master schedule, the findings from this study are only applicable in one time and place. An additional limitation of this study is that the school studied is a high performing, well-funded school, though as stated earlier, this may also be construed as a strength of the study, in that decisions about the organization of the master schedule were not made under pressures to remediate large numbers of students. Unfortunately, the conditions, culture, and resources that exist at this school are not the norm in American public education.
Protection of Human Subjects

No direct questioning or observation of students was conducted as student views were not the focus of the research questions; therefore, no minors participated in the study. However, since adult participants might be at risk for discussing negative views of their school leadership, organization and master schedule, and to ensure that honest responses were solicited from all participants, the school’s identity was kept anonymous and participants have not been named in the study. Even if retaliation is unlikely, participants may fear speaking unfavorably about the teaching conditions at their place of employment, which could skew the data; anonymity therefore preserves the integrity of the interviews and focus groups as well as protecting their participants. To ensure that participants were able to speak freely in focus groups, those groups consisted of peers only. Eliminating building and district administrators from the focus groups gave teachers the freedom to speak about their views and opinions.

All International Review Board guidelines were followed and all respondents to focus groups, interviews, and surveys were kept anonymous. At the conclusion of my research, all of my research data will be destroyed.

Conclusion

At the comprehensive high school where I teach, our master schedule does not provide for peer collaboration or regular professional development. My comprehensive high school is not unique in this regard. Building upon my inability to find a high school master schedule with time for regular professional development and peer collaboration, I proposed to conduct a case study of how members of a high school community perceive the value of a master schedule designed for regular professional development and peer collaboration. It is clear that for a high school to achieve accreditation through NEASC, the high school must possess a schedule that
allows for regular professional development and peer collaboration. Though NEASC mandates this clearly through several standards, it does not provide either a framework or a model to achieve this schedule. For schools facing this mandate, a research project that examines the perceived value of this type of schedule is extremely valuable. Additionally, a review of the literature on high school master scheduling reveals that though there is enthusiasm for professional learning communities and other methods of peer collaboration and regular professional development, there is no clear, well-documented, single method for achieving success through peer collaboration. This case study, guided by organizational culture theory and deconstructionist frameworks may contribute to educators’ understanding of how teachers and administrators perceive the potential benefits and limitations of a master schedule designed to promote professional development and teacher collaboration.

Chapter IV: Report of Research Findings

Reporting the Findings and Analyses

This chapter presents the results and key findings of this study in five sections. The first section provides a short description of the study and its participants. The second section provides a detailed understanding of the study context, including an introduction to the setting and the background to the development of the master schedule. The third section presents the themes arrived at from an analysis of the data. The fourth section compares and contrasts the themes as they emerged across stakeholder analyses. The fifth and final section presents a summary of the research findings.

The data was analyzed in an attempt to answer two of the research questions developed at the beginning of the study.
1. How do teachers and administrators perceive their high school master schedule that prioritizes regularly scheduled professional development and collaboration impacting student learning?

2. How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?

Data for this study consists of interviews and focus groups with core content area teachers (English, math, science, social studies, and foreign language), non-core content teachers (library, business, and technology), department chairs, and the building principal, as well as observations of common planning time and a document analysis. The observations include four common planning time meetings and several hours in the shared department workrooms. Data from document analysis includes the current and previous master schedules, the common planning time schedule, the student handbook, the high school program of studies, state laws, department goal sheets, NEASC reports, and teacher produced assignments, such as common tests and projects.

**Study Context**

Riverbend High School is located in a community with favorable economic conditions and demographics that present few educational challenges. According to the Rhode Island Department of Education (RIDE) Riverbend’s 1135 students are 97.7% white and come from homes with a median income of $84,657. Only 4% of the students at Riverbend receive free and/or reduced lunch, compared with 43% statewide; only 1% receives ESL/bilingual education services, compared with 5% statewide. Riverbend also has a very impressive attendance rate of 96%, compared with 92% for the state, and a high graduation rate 95.6%, compared with 75.8%

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1 Riverbend High School is a pseudonym.
for the state. Students excelled with college mastery rate of 89% (3 or higher) on the sixteen different Advanced Placement exams offered at the school. On other standardized tests like the New England Comprehensive Assessment Program (NECAP) and the Scholarly Assessment Test (SAT), Riverbend’s students consistently score among the highest in Southern New England. Riverbend has consistently earned the classification of “commended” in its efforts to meet Annual Yearly Progress.

Riverbend High School serves is an affluent suburb in Rhode Island, and participants in this study frequently commented that Riverbend was a great place to teach and that were happy to work at the high school. Riverbend’s top-step teachers are the second highest paid, on average, in the state of Rhode Island earning a salary of $84,676. This desirability is beneficial in many ways: For the 2010-11 school year, none of Riverbend’s teachers were on emergency certification and none were considered not highly qualified.

**Researcher observations.** One of the first things I noticed as I walked through the halls and peers into the classrooms of Riverbend High School was the absence of rows of desks. The rectangular rooms feature a variety of student desk arrangements with a horseshoe shape being the most popular. Other aspects of the classrooms at Riverbend also give hints to the school’s collective identity; whiteboards and professionally printed multicolored mission statements are ubiquitous, as are late model computers at the teacher’s desk at the front of the room. Each computer is hooked up to a large flat panel LCD television diagonally mounted to the upper corner near the blackboard. Besides the daily student-produced morning news, the TVs broadcast a constant series of announcements, updates, and accomplishments from Riverbend’s 36 clubs and 27 athletic teams. Student projects that adorn every wall, and the clutter free rooms reflect that teachers share workrooms rather than sitting themselves in individual classrooms.
The set-up of any classroom is a symbol, a wish for what the teacher would like the classroom to be. An observer walking through the clean and empty halls of Riverbend while classes are ongoing would see repeated evidence of students’ presentation and classes debating and discussing their lessons. A diverse and collaborative learning environment which embraces student-centered learning modalities. While the traditional classroom organization of rows of desks provides a stage from which the teacher disseminates knowledge, classrooms organized in horseshoes, circles or collaborative tables bring the focus back to the student’s experience and insights.

**Riverbend’s senior project.** In addition to its success on standardized tests, Riverbend is known for undertaking several educational initiatives, including a nationally recognized senior project. The yearlong Riverbend senior project consists of a lengthy research paper, fieldwork guided by a community mentor, and a public presentation before a panel of educators, mentors, and community members. Students begin working on the skills associated with the senior project (researching, giving presentations and developing their writing skills) in their freshman year. As juniors, students watch senior presentations and so are exposed to exemplars. The entire K-12 Riverbend school district facilitates the senior project, which dictates the school calendar during presentation season and calls upon all educators in the district the serve on senior project panels and correct senior project papers. The school calendar in the Riverbend school district provides for seven professional development days (in addition to the 180 days of school that are required in Rhode Island) to meet these obligations and address other professional development needs. The teachers’ 187- day work year is the longest school year in the state of Rhode Island.
Table 1
Riverbend High School Recent Initiatives

- Common Planning Time every other week for one hour
- Linked classes (e.g., American Studies/American Literature) with co-teaching and back to back blocks
- Co-taught classes in all core-subjects
- 45 minutes for Advisory periods every other week
- Senior Project
- Work Study program
- Dual enrollment classes with dual (college credit) options
- Intervention program with intervention centers/periods staffed by licensed teachers for students who struggle academically
- Proficiency requirement of 70% on all common course assessments (with interventions and supports)
- Daily student created television broadcast (8-10 minutes) coordinated with the student newspaper
- New Rhode Island Model Educator Evaluation System Piloting (2011-12)

Each of these initiatives creates demands on time at Riverbend High School. Riverbend has undertaken these initiatives over the past ten years in response to a mixture of state, community, administrative, and teacher demands to improve an already successful school. The master schedule that Riverbend currently uses accommodates these incrementally imposed initiatives.

The master schedule. The evolution of the master schedule at Riverbend came about as a result of the efforts of teachers and building and district administrators in response to Rhode Island education reforms. When asked to describe what Riverbend’s schedule used to be, before the era of change, veteran teachers all used the same phrase, “traditional.” The primary focus of the master schedule was instructional time and it had remained unchanged since at least the
1960s. As seen in Table 2, the master schedule provide for all classes to meet every day, in 44-
minute classes that did not rotate.
Table 2

Traditional Schedule at Riverbend High School

<table>
<thead>
<tr>
<th>Period</th>
<th>Start Time</th>
<th>End Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7:54</td>
<td>8:38</td>
</tr>
<tr>
<td>2</td>
<td>8:42</td>
<td>9:36</td>
</tr>
<tr>
<td>3</td>
<td>9:40</td>
<td>10:24</td>
</tr>
<tr>
<td>4</td>
<td>10:28</td>
<td>11:12</td>
</tr>
<tr>
<td>5</td>
<td>11:16</td>
<td>12:18</td>
</tr>
<tr>
<td>6</td>
<td>12:22</td>
<td>1:06</td>
</tr>
<tr>
<td>7</td>
<td>1:10</td>
<td>1:54</td>
</tr>
</tbody>
</table>

According to teachers, the schedule did not allow for any regular peer collaboration and encouraged an individualistic teacher style. One veteran teacher recalls that in 1997, “when I started here we all kind of did our own thing in our classroom by ourselves.” This sentiment was echoed by a department chair who felt that teacher “wanted to do common planning time, but there wasn’t time in the day to make it work.” In addition to the need for time for peer collaboration, teachers at Riverbend in late 1990s were also looking for longer instructional periods. Teachers wanted longer instructional periods to have time to reinforce concepts through student practice and more time for in-depth explorations of their subjects. While not embracing the block model, many of the teachers described that they desired longer instructional time. In addition to these teachers expressing their desire for time for collaboration and longer instructional periods, the district wanted to embrace the professional learning community model.

**Origins of the professional learning community.** One of the Riverbend School Committee members was originally from Illinois and had embraced the professional learning community ethos of Richard DuFour. Over the years district administrators read books and attended the workshops promoting this school-wide approach to improvement, finally visiting...
Adlai Stevenson High School in Illinois, where Richard DuFour, the central proponent of professional learning communities, had been principal. Asked to describe what the change to a professional learning community model meant, a teacher described it as switching from “talking about individual kids and individuals assignments without a focus” to a system where teachers were “looking at data and removing your own personal needs to focus on the needs of the team and what the rest of the team needs.” Teachers and the building principal described the process as evolutionary.

Part of the evolution to a professional learning community model involved building the culture of collaboration for which teachers were expressing a need. According to the building principal this was a gradual process because, “if you go out and tell people to go collaborate then they will go do their own thing.” Following the model established by DuFour, teachers developed meeting “norms” by department and then combined those norms to create school-wide standards of collaboration. During this time, in addition to embracing a school-wide professional learning community model, Riverbend was also struggling with how best to comply with changing statewide learning regulations.

**Influence of state regulations.** Rhode Island Department of Education stipulates that each student must receive a minimum of 330 minutes of instructional time per week, a regulation which was revised in 2004 specifically to exclude “all lunch, study halls, homeroom, common planning time, student passing time, and pre and post school teacher time.” RIDE also required that by the 2011-12 school year each secondary school must provide a minimum of one hour of common planning time per week, though Riverbend implemented this change ahead of the state schedule. According to RIDE, teachers and administrators must use the common planning time for “substantive planning of instruction, looking at student work, addressing student needs, and
group professional development.” Additionally, the common planning time must be “in addition to individual faculty planning time.” State mandates for common planning time transitioned common planning time from being a choice to being a requirement.

Instructional time requirements and common planning time were not the only state mandates that presented challenge for Riverbend High School. The education reforms of 2003 (revised in 2011) stated that in addition to proficiency on NEACP literacy and math testing and successful completion of core course requirements, each high school had to adopt two choices from a menu of three options. These choices included comprehensive senior projects, comprehensive student portfolios, and student proficiency common course assessments. The RIDE based the senior project guidelines on Riverbend’s project, so that was an easy selection for the school. The faculty decided on common course assessments as their second option. To facilitate the final common course assessments, teachers described developing “common tasks throughout the quarter and … work[ing] toward common formative assessments that we are using.” Teachers and administrators realized they would need time to create such common tasks and assessments unless the common assessments were standardized and created by an outside entity, which Riverbend chose not to do.

To meet the needs of teachers, the district’s desires to embrace a professional learning community model, and the state’s web of new requirements, Riverbend began to modify its schedule. The first move was to increase class time. In an effort to preserve the seven period model and introduce longer instructional periods, Riverbend adopted a rotating schedule with a dropped period.
The rotating schedule with a dropped period was embraced as an improvement, but it did not provide the regular time for peer collaboration that was needed to satisfy teacher demands for collaboration, comply with the district professional learning community model and meet state regulations.

**Evolution of common planning time.** Riverbend experimented with how to best incorporate common planning time. The first attempt used the time dedicated for homeroom for common planning time. Under this model, common planning time would last from 7:25-7:45 in the morning. The Riverbend collective bargaining agreement states that teachers are not required to enter the school building “more than 10 minutes in advance of the beginning of the students’ official school day.” Not having any transition time between arrival and the start of common planning time was one of the many factors that led to frustration with this schedule. Asked to

<table>
<thead>
<tr>
<th>Homeroom 7:35-7:45</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:49-8:47</td>
<td>1</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>A</td>
</tr>
<tr>
<td>8:51-9:46</td>
<td>2</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>9:50-10:45</td>
<td>3</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td>C</td>
</tr>
<tr>
<td>Lunch 1 (10:49-11:13)</td>
<td>4</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>D</td>
</tr>
<tr>
<td>Lunch 2 (11:18-11:42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch 3 (11:49-12:13)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:17-1:12</td>
<td>5</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>E</td>
</tr>
<tr>
<td>1:16-2:11</td>
<td>6</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>G</td>
</tr>
<tr>
<td>Dropped Period</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
</tr>
</tbody>
</table>
describe this use of common planning time, one English teacher replied, “We would huddle and go boom. Brrvrooom! [makes zoom sound] It was a what we wanted to do, but it was a ridiculous way to start the day because people would be running in [makes panting for breath motion] and ‘I’m late because this or that,’ but it was a very good taste of what we wanted.”

Under this first incarnation of common planning time, each of the five core academic departments had one day a week scheduled for common planning time. During this time, paraprofessionals covered homerooms of teachers in the department that had common planning time. Though the school was making an effort to provide for common planning time, the shortage of labor limited that common planning time to one day a week. After teachers expressed their concerns over the inadequacy of the schedule, even the building principal came to realize that “by the time they all got there it was not really productive” and “it really ended up not being enough time to meet.”

After reflecting on the need for more common planning time and while trying to retain as much of their existing schedule as possible, Riverbend high school adopted a late start common planning time model. With the additional state requirement and NEASC standard that all students participate in a regular advisory program, the new schedule forced the staff to share their common planning time with time for advisory.
### Table 4

**Rotating Master Schedule with Sample Common Planning time and Advisory**

<table>
<thead>
<tr>
<th>Warning Tone 7:35</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
<th>Sample CPT Thursday</th>
<th>Sample Advisory Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:40-8:47</td>
<td>1</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>CPT 7:30-8:47</td>
</tr>
<tr>
<td>8:51-9:46</td>
<td>2</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
</tr>
<tr>
<td>9:50-10:45</td>
<td>3</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Lunch 1 (10:49-11:13)</td>
<td>4</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>D</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>Lunch 2 (11:18-11:42)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Lunch 3 (11:49-12:13)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12:17-1:12</td>
<td>5</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>E</td>
<td>E</td>
<td>G</td>
</tr>
<tr>
<td>1:16-2:11</td>
<td>6</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>F</td>
</tr>
<tr>
<td>Dropped Period</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>D &amp; B</td>
<td>D</td>
</tr>
</tbody>
</table>

**Findings and Analysis: Research Question 1 – How do teachers and administrators perceive their high school master schedule that prioritizes regularly scheduled professional development and collaboration impacting student learning?**

In researching the perceived the strengths and limitations of the high school master schedule by teachers and the building principal several themes emerged. Among these were the perceived value of the master schedule in supporting a school wide culture of collaboration,
greater attention to student academic growth, and greater autonomy in matters of professional collaboration. Among the weaknesses that emerged were a concern that time was being used inefficiently and a feeling that despite collective goals across staff, individual accountability was lacking. Table 5 outlines the key themes that emerged from the first part of this research question.

Table 5

*Themes and sub-themes for 1st research question - strengths of master schedule*

<table>
<thead>
<tr>
<th>Themes and Sub-Themes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Supports a school wide culture of collaboration</td>
<td></td>
</tr>
<tr>
<td>• hiring process</td>
<td></td>
</tr>
<tr>
<td>• interdisciplinary collaboration</td>
<td></td>
</tr>
<tr>
<td>(2) Values teacher autonomy</td>
<td></td>
</tr>
<tr>
<td>• teacher/department control of professional development and common planning time</td>
<td></td>
</tr>
<tr>
<td>• positive views of common planning time</td>
<td></td>
</tr>
<tr>
<td>(3) Contributes to a greater emphasis on student-centered instruction</td>
<td></td>
</tr>
<tr>
<td>• elimination of homeroom</td>
<td></td>
</tr>
<tr>
<td>• longer class periods</td>
<td></td>
</tr>
<tr>
<td>• allows for student centered instruction</td>
<td></td>
</tr>
<tr>
<td>• use of common assessments</td>
<td></td>
</tr>
<tr>
<td>• allows for interventions for struggling students</td>
<td></td>
</tr>
</tbody>
</table>

**Supports a school wide culture of collaboration.** Throughout this study, all participants spoke positively about the culture of collaboration at Riverbend High School and how the master schedule supported this culture. The positive view of collaboration was a commonly held view of all teachers, department chairs and the building principal. The differences that emerged were the result of each respondent’s perspective on how the schedule contributed to a school wide culture of collaboration. Participants in this study reported that emphases on building, opportunities for interdisciplinary and student collaboration, and on developing a collaborative culture through the hiring process helped support a school wide
culture of collaboration. As the master schedule evolved over the past decade, the school has consciously pushed to find individual educators interested in joining a collaborative school culture.

Over the past decade, Riverbend has used the hiring process to further its school-wide culture of collaboration. Participants reported that retiring teachers who were skeptical of peer collaboration and who perceived teaching as an individual pursuit were deliberately replaced with teachers who, in the words of one department chair, “wanted to be players” in the school’s collaborative culture.

Participants in this study also reported that the master schedule allowed for greater opportunities for interdisciplinary collaboration. This collaboration often took the form of non-core classes working with core classes, for example the video production class teacher having time to coordinate with the journalism teacher. An exemption to this would be the positive views of social studies and English teachers who, because of the master schedule were able to teach a linked, co-taught American Studies course.

**Hiring process.** All department chairs and the building principal saw the master schedule benefiting from the process of faculty retirement. The increase in collaboration at Riverbend and the building of a master schedule for that explicit purpose were accompanied by a sizeable number of retirements, which created new opportunities in hiring. All of the four core department chairs interviewed in this study had worked at Riverbend between 10 and 15 years, and with this new generation of leaders, a new sense of collaboration emerged. These department chairs reported that teachers close to retirement often viewed the increased focus on collaboration with skepticism and caution. The English department chair described some of her previous colleagues as having a negative view toward teaming: “they would have not joined...
nobody could have made them, they had their own way of doing it; it was very traditional.” In one department, of the eleven total members, only three had been through “big change,” one of whom confirmed the sentiment of the department chair and the building principal by saying “It has been a little difficult for us who have seen the transition, but I also think it has been powerful because of the experience that the three carry on along with us, we can sort of guide some of the things along the way.” Though not all teachers commented on the hiring process, the ones who did held views that were consistent with the department chairs and the building principal.

New teachers at Riverbend were sought for their ability and desire to collaborate. As a department chair with a substantive voice in the hiring process said, “When we started to bring new people in, and when attrition due to retirement occurred, we brought them in with the understanding that this was a team.” Because of the low rates of faculty turnover at Riverbend, most of the respondents to this study were not newly hired, though a newly hired social studies teacher, in her first year, confirmed the department chair’s sentiment. She reported that she “loved” common planning time, with which she had some experience at her former school and that “it is great for schools.” Regular collaboration was a priority for both the incoming teacher and the department which hired her.

New teachers are also welcomed into the schools collaborative computer network. In their common planning time meetings, teachers often refer to their common assignments, projects, and assessments as being available on the network. New teachers gain a virtual folder of communally developed class work that is shared for the best interests of students.

**Greater opportunity for interdisciplinary collaboration.** Though not all teachers reported engaging in interdisciplinary collaboration, about half of the teacher respondents did report that the master schedule contributed greater opportunities for interdisciplinary
collaboration. Teachers in business, technology, English, social studies, and library reported that the master schedule at Riverbend allows for and encourages greater opportunities for interdisciplinary collaboration, as in the linked American Studies class. As table six illustrates, linked courses always run consecutive to one another.

Table 6

*Master schedule with linked courses*

<table>
<thead>
<tr>
<th>Warning Tone 7:35</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:40-8:47</td>
<td>B American Studies</td>
<td>C</td>
<td>A American Studies</td>
<td>B American Studies</td>
<td>C</td>
<td>A American Studies</td>
<td>B American Studies</td>
</tr>
<tr>
<td>9:50-10:45</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B American Studies</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Dropped Period</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
</tr>
</tbody>
</table>
This process creates considerable constraints in the master schedule by blocking two of the seven periods for students and forcing other likely courses for 10th graders into the five remaining periods, as well as required a shared preparation time for teachers. At Riverbend, the co-planning needs of linked classes met during the common planning time.

While it does create a limitation on the master schedule, the course also allows for co-teaching and combining of the two classes for more focused activities and presentations. Students in this co-taught class receive one grade assigned jointly by two teachers. To arrive at this grade, teachers plan and implement common exams, interdisciplinary projects, and individual and group presentations. Popular with both teachers and students, enrollment for the American Studies course is capped at 150 students and a lottery often determines placement in the course. While American Studies is the clearest example of interdisciplinary collaboration, the master schedule allows for many other opportunities for collaboration.

In transitioning from the latest incarnation of the master schedule to the present schedule, collaboration was broadened. The homeroom common planning time had been restricted to core departments; when the master schedule transitioned to having an hour-long common planning time every other Thursday, teachers in non-core departments also received time for collaboration. This allowed for these teachers to collaborate within their own departments, as well as join forces with the core academic departments.

Teachers of non-core subjects often teach classes that are offered only once in the schedule. Typically, these singleton courses are upper level electives that few students qualify for or have an interest in taking. All non-core teacher respondents in this study reported positive instances of inter-disciplinary collaboration. For example, journalism students and the television
production students regularly work together to produce stories. Teachers from these classes reported meeting during common planning time, though their classes are not linked. Even typically isolated positions like the school librarian (in most schools a department of one) indicated that she regularly worked with multiple departments during common planning time for diverse purposes. The practitioners at Riverbend have the freedom to decide upon the use of common planning time for interdisciplinary work, and they value this autonomy.

**Valuing teacher autonomy.** Once a schedule is created that allows for regular time for professional development and peer collaboration, a school must decide how that time will be allocated. At Riverbend, teachers, department chairs and the building principal were unanimous that the use of common planning time should be directed by teachers and their needs. The competition for this time is immense, for there are myriad goals to accomplish and multiple demands to be met, including communicating with students and parents, correcting student work, planning future lessons, and completing routine school paperwork. In deciding how to use common planning time, teachers, department chairs and administrators all stated that there was only one rule: no correcting. Outside of that basic rule, which no one contested, the decision of how to use common planning time lay completely with department chairs. At the end of every common planning time session, the department chair completes a one page form summarizing the groups participation and how the meeting related to team and department goals and submits the form electronically to the principal.

The building principal offered a pragmatic explanation of teacher direction of time for time dedicated to peer collaboration, because the teams were “doing a great job” and that the common planning time is a “great vehicle to allow us to look at the data to make these things
work more effectively.” All teachers and department chairs expressed views that confirmed the building principal’s support for practitioner directed common planning time.

**Teachers’ and department chairs’ positive view of common planning time.** The department chairs applied varying degrees of control over peer collaboration. When queried, department chairs’ responses ranged from “I kind of oversee things” to “I guess I do drive it, but I never really thought about it that way.” They often described the decision of how to best use their time as a difficult one. One chair warned that her agenda might not “look equitable on paper” but is based on “some questioning about who needs what and what is more urgent.”

Department chairs hold the primary responsibility for both determining department teams and their goals for both professional development and time for peer collaboration.

About half of Riverbend’s full-length professional development days, without students, have agendas set by the department chairs. As with other changes at Riverbend, the planning of professional development days by department chairs is also a new development. One coordinator reflected, “the prior chair had no responsibility to [plan professional development], but that has shifted in the past seven or eight years.” Despite the increase in workload, the department chairs consistently welcomed this new obligation. One department chair explained this and described her preference for dictating her department’s day as better than “listening to a suit all day.”

This allocation of professional development time does not come without guidance. Discussing the process of setting the entire day’s agenda, a department chair noted, “I work with the assistant superintendent discuss and sort of hash over what we are going to do. So I write a proposal with the state and district initiatives in mind and they have some different ideas, but in terms of how we get there I feel that I have a lot of control over that.” The building principal
echoed this sentiment, discussing how the use of time in the schedule for peer collaboration and professional development was “really is up to the department chair, and I meet with the department chairs on a regular basis and unless it is a school wide goal, they are going to work on X, whatever that may be. Figuring out what the goals should be is the result of data analysis.”

**Positive views of common planning time.** All teachers held views consistent with department chairs and the building principal as far as having a positive view of their autonomy in determining how to use their allocated time for professional development and peer collaboration. Teachers reported that they played a substantive role in guiding time dedicated to the use of professional development and peer collaboration. One teacher stated that “common planning time is teacher directed, the coordinator asks us, she has some things in her agenda that need to get done, but as department goals, because we come up with the goals at the beginning of the year.” Overall, all teachers reported having a lot of flexibility in how their time was used; ultimately the process of peer collaboration meant that the allocation of time was decided “based on the needs of each team.” Possessing the autonomy to dictate some of their professional development and nearly all of the time for peer collaboration meant that teachers, department chairs, and administration all valued this time.

Common planning time is the main vehicle in the master schedule for peer collaboration. Teachers, department chairs and the building principal all expressed a positive view toward common planning time. Even one blunt teacher who expressed his displeasure with the master schedule (for reasons discussed in the limitations section) by saying that the schedule, “sucked,” supported common planning time, saying “Well, I love common planning time” and “It’s been great.” When prompted to describe why common planning time was beneficial, one teacher reported that “It is great. It really allows us to collaborate with teams to go over the curriculum
and see that there is more consistency in classes. It has helped us developed common assessments, common exams, formatives.” These positive views on common planning time exist because teachers see the time as valuable in their efforts to foster students’ academic growth.

The difficulty, all teachers reported, was not willingness, but an ability to meet at other times. At Riverbend, most of the teachers were also involved in advisory or coaching the schools 27 athletic teams or 36 clubs. Adding the burdens are staff and department meetings, typically dedicated to school policy issues and extra-help/makeup sessions with students. These professional obligations do not even consider the burdens associated with family and personal interests. Still, most teachers do not feel they have enough time to collaborate as they need. One department chair described the challenge: “We have to schedule time outside of the regularly scheduled common planning time and that becomes on the fly and not as productive and that kind of thing because we can’t get as much of the work done as we need to do.”

**Focused Time for Student’s Academic Growth.** In exploring how the master schedule at Riverbend created more focused time for student’s academic growth, several sub-themes emerged. Practitioner-reported strengths of the master schedule included eliminating homeroom, having longer class periods, the use of common assessments, the use of interventions for struggling students, more student focused instruction, and a work-study program. As with the positive views of collaboration at Riverbend, teachers, department chairs and the building principal were united in believing that the master schedule contributed toward more focused time for student’s academic growth. To paraphrase Tolstoy, all happy schools are happy in the same way, but all unhappy schools are unhappy in their own unique way. Thus as with other aspects of the strengths of the master schedule, there existed more agreement, between teachers,
department chairs and the building principal, on the strengths and more discord on the weaknesses.

**Elimination of homeroom.** Homeroom was eliminated at Riverbend in order to create time for common planning time. Before it ended, homeroom at Riverbend consisted of attendance and announcements. Under state law, it did not count as instructional time and would not count toward the required 330 minutes. The immediate result of eliminating homeroom was beneficial because, as one teacher described it, “We banked that time during the course of the week.” Homeroom was held in such low esteem by students that it was frequently skipped and this resulted in disciplinary issues for the student body. One teacher reported that students often skipped homeroom if they “did not have a class first period. They were missing a lot of school because there was no real reason for them to be here.” No practitioners expressed regret over the loss of homeroom and all considered that its elimination removed time in the schedule that was not contributing to students’ academic growth. All respondents felt that the reallocation of time created by eliminating homeroom was a strength of the master schedule.

**Longer class periods.** In the transition from the traditional master schedule to the current master schedule the class period was lengthened from 44 to 55 minutes. All teachers and department chairs reported that the additional time benefited student learning. One English teacher summed up the issue well saying that the extra time “is much more substantial because a lot of those 10-12 minutes, before you were dealing with attendance and passing things out and that was not instructional time.” A math teacher echoed this sentiment stating that the extra time was beneficial because “you get a little more time to be creative in a day.” He said that students “can check each others answers; they can come up to the board” and that as a teacher he can “have a little more time to develop those ideas within a day.”
Given the common refrain from teachers, department chairs and the building principal that Riverbend is “data-driven,” one department chair reported that the extra time was necessary for doing “different things in the classroom and it is easier to model high stakes testing when you have an extra ten minutes.” Teachers view having more time to develop lessons and allow students to practice the concepts taught in the lesson as positive characteristics of Riverbend’s master schedule.

The longer period also helps with the implementation of technology in the modern classrooms at Riverbend. The school librarian, whose library includes several dozen late model computers, feels that longer periods help students with their use of technology. She stated that “the transition that is required for students to come in, the technology, even in this library which I think is very good, it still takes a long time to log-on, boot up. If we have any technological problems, it slows the kids down. The longer period also allows them to sit and focus in a way a shorter period does not allow them to do.” Technology is widely utilized at Riverbend and the master schedule encourages its use.

Another reported benefit of the longer class periods is that it allows for more student-focused instruction. One example of this can be seen through the Riverbend senior project, which requires all students to write a paper, present before a panel, and work with a mentor. Two of those three requirements are integral parts of the learning experience at Riverbend that exist at all grade levels. Students build up to the senior project by completing a major research project with a quarterly presentation each of their four years at the school. Respondents felt that the longer class periods benefited these projects and allowed teachers to coordinate their planning on both formative and culminating projects.
Schedule contributes to a greater emphasis on student-centered instruction. In addition to the actual application of time, the master schedule is accompanied by a mindset that displays the values of a professional learning community. Teachers and department chairs both communicated that the change of the school’s master schedule coincided with a changing mindset on teaching. One teacher summarized this as “it is less about you teaching and more about whether they got it or not. You can’t make the excuse, ‘Well, I taught it they didn’t get it.’ Well, if they didn’t get it, you didn’t teach it, so it is more looking at that and looking at what students struggle and what we can do for them.” A department chair described this changing mindset as “less idiosyncratic functioning in classes so that finding the balance between indulging my own idiosyncrasies and, indulging that to please myself without having to make any assertion that this is actually helping students.” For this department chair, teachers have changed their view of teaching from “I like it and I can be enthusiastic about it’ because it allows you to go off and go on auto-pilot and do what you want to do regardless. That doesn’t always help kids. It hurts more than it helps and I think the collaboration has helped that.” Both in the change of mindset that respondents to this study embraced and in the extension of length of the class period, Riverbend’s schedule contributes to student focused learning experience.

Common assessments. Common assessments came to Riverbend as the result of the districts desire for a professional learning community and state requirements. Teachers, department chairs and the building principal all view the master schedule as essential to implementing common assessments. When asked if the master schedule brought about the use of common assessments or if the need for common assessments forced the change in the master schedule, responses differed. Teachers and the department chair in the English department reported that the need to update the curriculum and assess those modifications was the impetus
for change. For the English department chair the change was “about curriculum” in an effort to
organize their curriculum “around thematic questions.” The responses from the English
department were an aberration; for the remainder of the departments the change in the schedule
resulted from needing the time to create and analyze common assessments.

Teachers and department chairs reported that the master schedule helped to give them the
time to make common assessments work. One teacher summarized the process as using their
common planning time for “assessment purpose” and that their goal “is to evaluate our
assessments and calibrate and sit down and talk with each and try to explain why we graded it
the way we did. We really do that with the exams and look at the data on which questions they
got wrong and why they got it wrong.” An eloquent expression of this came from a veteran
teacher and department chair who said that this focus on commonality in teaching and testing
means that a “student who gets any given teacher … will be asked to do work that is
intellectually similar and that the outcomes of it will be compliable at some base level.” For this
teacher, peer collaboration is a necessary condition for a student-focused approach to instruction.

For successful completion of a course at Riverbend, the common assessment system
requires that a student get a score of 70% to display that he is proficient in the subject. Students
who fail to meet this goal enter a complex system of interventions. One of the side products of
these high stakes final exams are that they are begins two weeks before the end of school. For
students who fail, they enter a system of interventions where the work towards successfully
retaking the exam. When asked how many students go through this process, a department chair
responded, “Very few.” To help these students a department chair reported that they “look at the
data and see where didn’t they and then drill into where they were proficient and then ramp them
up and give them a second chance to show proficiency.” Students, who have passed these final
exams and finished their coursework for the year engage in some weeklong project that, ideally, compliments the curriculum of the course. While teachers did not criticize this time at the end of the school year, they were not enthusiastic about it either.

**Interventions for struggling students.** Helping struggling students is a priority for teachers, department chairs and the building principal at Riverbend. When reflecting on the success of Adlai Stevenson High School in Illinois, a teacher who visited the school and described it as “kind of like going to Mecca” reflected that Stevenson High School was an “incredibly small district and they have an incredible amount of money and it has a lot of autonomy. It is like, yeah you give me those three things and I can do this too.” Riverbend shares many of those characteristics, so much that the same teacher wondered aloud that “it makes you think, am I really this effective.” When helping struggling students Riverbend has many advantage: very few students live in poverty, few are ESL learners, and the median home value and income are quite high.

Riverbend’s generous financial resources help it fund a master schedule that supports struggling students. Full time teachers at Riverbend are contractually required to teach five of seven periods in the schedule as well as a semester long duty. Before the change in the schedule, teachers who were not assigned to study halls supervised the cafeteria during lunch, a duty the building principal views as a “complete waste of time, but yet it needs to be done.” Schedulers are currently working to remove teacher assignments to the cafeteria and to employ paraprofessionals for that duty instead. This change will free up all teachers to supervise study halls and intervention centers.

Approximately 80 of Riverbend’s 1100 students qualify for the intervention center, where students are offered direct support. The administration scans over student grades every three
weeks to identify at risk students so that when “a student starts to struggle, based on data, [or] they start to fail …. [t]hey will be placed into one of those directed support rooms.” The intervention center provides a targeted location staffed by teachers to assist struggling students. One teacher in each of the math, science and English departments also works a reduced load in order to coordinate services in the directed support centers. These teachers are supported by a full time intervention coordinator. Teachers, department chairs, and the building principal agreed that implementation of the directed study model was a benefit of the master schedule’s evolution.

Overall, there was agreement over most of the positive aspects of the master schedule. Teachers, department chairs and the administration at Riverbend all noted similar benefits in the master schedule including focused time on student learning, student centered curriculum that is enabled and supported by the master schedule, practitioner autonomy in the use of their time dedicated to professional development and peer collaboration.

Limitations of the master schedule. In the focus groups with teachers and interview with the principal and department chairs, they identified several of the master schedule’s limitations.

Another limitation identified by selected teachers and department chairs was the difficulty of balancing team and individual responsibilities. All teachers, during their common planning time, work with teams and nearly all teachers at Riverbend are assigned multiple, different classes. Teacher respondents all indicated that they had difficulty in balancing the competing needs of different teams. Selected teachers also noted that the master schedule, as constructed, made it difficult for them to complete their numerous individual responsibilities like grading, lesson planning, and keeping in touch with parents. For these teachers, the most recent
change in the master schedule increased in their overall workload. Some disagreement among teachers, department chairs and the building principal existed in their perceptions of the limitations of the master schedule. Teachers expressed struggling to meet their numerous individual and collective responsibilities. Department chairs, whose five-course load is reduced to three courses, did not express this concern as frequently as teachers did.

Table 7

*Themes and Sub-Themes of Limitations of the Master Schedule*

<table>
<thead>
<tr>
<th>Themes and Sub-Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Schedule is not an efficient use of time</td>
</tr>
<tr>
<td>• irregular meeting schedule</td>
</tr>
<tr>
<td>• elimination of lab periods in science</td>
</tr>
<tr>
<td>• partial and limited rotation</td>
</tr>
<tr>
<td>• impact of band/chorus</td>
</tr>
<tr>
<td>(2) Difficulty of balancing team and individual responsibilities</td>
</tr>
<tr>
<td>• difficulty of being on multiple teams</td>
</tr>
<tr>
<td>• domination of core classes</td>
</tr>
<tr>
<td>• increase of teacher workload</td>
</tr>
<tr>
<td>• not enough time to complete individual tasks</td>
</tr>
</tbody>
</table>

A number of teachers and department chairs indicated that the schedule’s limitations included a perception that the master schedule did not use time effectively. Respondents identified the irregular meeting schedule of classes, the limited rotation of the master schedule, the impact of band and chorus, and the elimination of lab periods in science classes as ways that the master schedule did not use time effectively.

*Limited Rotation.* Participants identified the limited rotation, where the seven periods rotate three times within a limited framework as one way in which the master schedule does not use time effectively. Riverbend’s seven periods rotate on a six-day schedule, where every day at
least one class drops and on days for common planning time and advisory two classes drop. This rotation is segregated into three distinct blocks within which the same periods operate in a mini-rotation. Table eight illustrates the master schedule with the three separate rotations. In this table periods A, B and C are labeled in yellow while periods D and E are in red and periods G and F are in blue. Starting at the end of the day, periods F and G are always blocked together to accommodate students in the work-study program.

Table 8

Master Schedule with Three Rotations Highlighted

<table>
<thead>
<tr>
<th>Warning Tone</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
<th>Sample CPT Thursday</th>
<th>Sample Advisory Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:35</td>
<td>7:40-8:47</td>
<td>1</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>A</td>
<td>B</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>CPT 7:30-8:47</td>
<td>7:40:8:27</td>
</tr>
<tr>
<td>8:51-9:46</td>
<td>2</td>
<td>C</td>
<td>A</td>
<td>B</td>
<td>A</td>
<td>A</td>
<td>B</td>
<td>A</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Advisory 8:31-9:18</td>
<td>9:22-9:56</td>
</tr>
<tr>
<td>9:50-10:45</td>
<td>3</td>
<td>D</td>
<td>E</td>
<td>D</td>
<td>C</td>
<td>B</td>
<td>C</td>
<td>C</td>
<td>C</td>
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<td></td>
<td></td>
<td></td>
<td>Lunch 1 (10:49-11:13)</td>
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<td></td>
<td></td>
<td></td>
<td>Lunch 2 (11:18-11:42)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Lunch 3 (11:49-12:13)</td>
<td></td>
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<tr>
<td></td>
<td>4</td>
<td>E</td>
<td>D</td>
<td>E</td>
<td>E</td>
<td>D</td>
<td>D</td>
<td>D</td>
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<td></td>
<td>Lunch 1 (10:49-11:13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>E</td>
<td>E</td>
<td>G</td>
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<td></td>
<td></td>
<td>Lunch 1 (10:49-11:13)</td>
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<tr>
<td></td>
<td>6</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>G</td>
<td>F</td>
<td>F</td>
<td>F</td>
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<td></td>
<td></td>
<td></td>
<td>Lunch 1 (10:49-11:13)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dropped</td>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td>D &amp; B</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lunch 1 (10:49-11:13)</td>
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</tr>
</tbody>
</table>
Impact of work-study program. Work-study has become more available to Riverbend students with a vocational interest as the result of the adoption of the rotating master schedule. Before the adoption of a rotating schedule, students could take some of their required courses at Riverbend while being enrolled at a local vocational high school. Since the schedule rotates, the option of attending the local vocational high school has been eliminated.

Work-study students at Riverbend leave after the lunch period every day. To assure that work-study students do not miss scheduled classes, the master schedule is constructed with periods F and G always rotating at the end of the day. This way, work-study can be scheduled into blocks F and G of a student’s schedule and he can attend academic classes during the earlier five blocks of the day. The work-study coordinator describes that the schedule benefits these students so that they can “can go out and get some real hands on experience in a field of interest.”

However, few students participate in the work study program: In the 2011-12 school year Riverbend had 10 students enrolled in work-study, which was a normal amount. The highest enrollment in the program in recent memory was 24 students.

Influence of band, chorus, and part-time teachers on limited rotation of master schedule. Periods E and D are always fixed in the middle of the day in an effort to coordinate the popular band and chorus programs at Riverbend. Both band and chorus create an unusual challenge for any comprehensive high school master schedule in that, unlike most courses that are ability and age grouped, band and chorus include students from all grade levels. Additionally, many students interested in upper level Advanced Placement courses are also
enrolled in band; as a result, those courses cannot be scheduled during the same periods. This creates a scheduling challenge.

The remaining scheduling periods, A, B, and C rotate together and share time with the biweekly advisory period. These first three periods also accommodate the schedules of the school’s part time teachers. Most of the part time teachers teach selective upper level languages courses like Chinese or Latin. The world language department has another two part-time members who only teach during the morning rotation. This creates an additional challenge for the master schedule because if a student needs to take Chinese or an upper level Latin course, it is only offered in the morning.

This limited rotation was a source of frustration for many teachers and department chairs. The best expression of this frustration came from an social studies teacher who said that “one of the benefits of an alternative schedule is seeing your students at different times in the day, in terms where their readiness to learn might be different after lunch or first thing in the morning, so it does not allow that for us. I never see my American studies kids later in the day; it would be interesting and maybe beneficial to see them at a different time.” Teachers who worked with students in lower level classes also expressed concern about always seeing the same students right before or after lunch or always at the end of the day, when they might be less receptive to instruction. The principal acknowledged teacher’s concerns, but from his perspective, the schedule includes dozens of such tradeoffs and while not launching a defense of the limited rotation of the schedule; he felt that the schedule “is what it is” and that “you never have the perfect schedule.”

**Infrequent meeting schedule.** In addition to the limited rotation, teachers and department chairs also felt frustration with the infrequent meeting schedule of classes caused by a mix of
holidays, professional development days and of the daily dropped class in the master schedule.

Figure one includes a modified version of the Riverbend school calendar.
Figure 1: Riverbend School Calendar-modified to show partial/full school weeks

As seen in Figure 1, the school calendar at Riverbend includes 39 weeks of school but only 26 of these weeks meet without interruption. The infrequency caused by the school calendar is
exacerbated by dropping of periods in the master schedule. Dropping an additional class period every Thursday for advisory or common planning time adds to the sense of confusion over the schedule: teachers often responded that at Riverbend the dropping of classes, “still seems like a mystery.” A science teacher summarized the academic concern over the infrequency of class meetings saying “With science, and most specifically the more math based courses like chemistry and physics, if you have a student who struggles with that subject, missing that one day makes a difference in terms of their understanding of the content because you know they are not necessarily strong, so they are not going to go home and focus on practicing, and so seeing them every day helps the teacher navigate their practice time.” The math department chair also stated similar concerns over the frequency of class drops “especially in math, when you do not want to overload them with too much at a time and they need time to digest it and practice it.” Descriptors like gaps and blind spots were frequently used to refer to class periods dropped on Fridays or Mondays, which left a long break between classes over the weekend. Teachers and department chairs reported that they had “expressed theirs concerns to administration” and that administration “has been responsive,” but the scheduling being “what it is” no change has yet been made.

**Elimination of science labs.** When the current master schedule was adopted at Riverbend, science classes lost the opportunity to meet in a double block for lab periods. Before the current schedule, science classes that required a lab, like biology, chemistry, and physics, had additional time set aside in the master schedule for their labs. This extra period was referred to as a “double block” and met once in the rotation for each class. When the block was not meeting in its double format, students would be in a study hall and teachers would be in a preparation
block. Because of the constraints and demands of the new master schedule, the double block was eliminated and all science classes were reduced to 55 minutes.

All of the science teachers who participated in this study viewed the elimination of the lab period as a great disservice to their subject because, “it definitely impacts [students’] ability to learn basic science and lab skills. It does create, sometimes, issues in their understanding of the major concepts.” The science department chair described the labs in this new schedule as “rushed” and “it’s ‘Do A, B and C and it’s out you go,’ so there is no time for debriefing and discussing and processing.” While this is a concern for all science teachers, it is perceived to be most detrimental to the students in advanced placement science courses, which require lengthy labs. Teachers of these courses report that “we do the majority of the lab for them, so they don’t get the full experience.” Teachers compensate for the lack of lab time by starting the labs for students or encouraging them to come in for labs on Saturday or before or after school. Teachers reported that labs held outside of regular school time were not well attended by students.

This schedule change was seen differently by the building principal, who felt that it was more equitable than the old schedule. In his opinion, science teachers get 55 minutes for their classes, “just like everyone else,” though he conceded that the lack of lab time was as a “real concern.” In the previous schedule, science teachers taught four classes and had a lab period, compared to the five classes that all other full-time teachers were required to teach. Members of the department felt that the workload of the previous schedule had been more equitable, and that the addition of the extra teaching period and the elimination of the lab block unfairly increased their student load and overall workload.
All science teachers also cited the treatment of the Advanced Placement courses as inequitable. One science teacher explained that “in college they get three hours for a lab and we get 55 minutes.” From the building principal’s perspective, there is not a great need for the additional lab time because with regard to the schools scores on Advanced Placement exams “we do phenomenal, particularly in areas like biology, chemistry and physics.” Table nine displays the 2009 scores on Advanced Placement exams in science.

Table 9

2009 AP Scores in Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Total Students</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biology</td>
<td>31</td>
<td>61%</td>
<td>19%</td>
<td>6%</td>
<td>12%</td>
<td>0%</td>
</tr>
<tr>
<td>Chemistry</td>
<td>22</td>
<td>18%</td>
<td>27%</td>
<td>27%</td>
<td>23%</td>
<td>5%</td>
</tr>
<tr>
<td>Physics</td>
<td>27</td>
<td>63%</td>
<td>26%</td>
<td>11%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Though the department chair is aware that the data does not support the claim that extra-time is needed for science labs, in the Advanced Placement courses, the concern over the labs remains. A veteran Advanced Placement teacher offered a more blunt assessment stating, “as long as the scores do not drop then no one cares about the learning, only the scores and not the learning.” For the science department the elimination of the lab block is a serious limitation in the master schedule.

**Difficulty of balancing team and individual responsibilities.** While all teachers, department chairs and the administration view the presence of common planning time as a benefit of the master schedule, they noted the difficulty of being on multiple academic teams. During common planning time teachers work on academic teams, which only exist for certain largely required core-academic courses. Most of the core/required courses have academic teams,
but this is not always the case. For example, English 12 does not have a team, but it coordinates the senior project. Most teachers at Riverbend are on multiple teams because they teach multiple courses. Tables ten and eleven show the number of different courses taught by members of the English and Social Studies departments.

Table 10

*English department course assignments*

<table>
<thead>
<tr>
<th>Number of Courses</th>
<th>3 Courses</th>
<th>2 Courses</th>
<th>1 Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>8</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 11

*World Language department course assignments*

<table>
<thead>
<tr>
<th>Number of Courses</th>
<th>4 Courses</th>
<th>3 Courses</th>
<th>2 Courses</th>
<th>1 Course</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teachers</td>
<td>2</td>
<td>4</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

In the English department, 13 teachers teach 22 classes. In the world language, department 9 full-time positions (with two part-time teachers) teach 19 classes. These classes include levels. In the world language department, for example, there is a French, Spanish and Latin team. The Spanish program contains seven different academic levels from Advanced Placement Spanish to Spanish for Health Care. These differences include the fact that several of the classes are for different academic levels. At Riverbend, there are four academic levels. With Level 1 being the advanced/honors track and Level four specifically for students who need “applied learning.” Teachers are expected to offer different instructional approaches and different assessments for each academic level. This requirement adds an additional complication to the difficulty of being on different academic teams.
Teachers and department chairs reported that deciding which academic team to work with on any given day “was kind of random” and “not systematic.” With the majority of teachers having the potential to serve on as many as three different academic teams, the possible configuration of the teams seems almost endless. In a focus group with many math teachers, one teacher explained the difficulty of deciding what team to work with: “The number of variables and combinations, you know, it is a math problem. [Laughter abounded.] You know, you could have hundreds and hundreds of outcomes because we all have three preps.” Teachers and department chairs viewed the difficulty of being on different teams as often “overwhelming, because one of the teams is always going to get short changed.” When asked to describe how they make the teams work, teachers often replied “We just pull on one another and say ‘You’re coming with me today, we just need to get this done’.” It is common in departments that “most people cross team and so [they] only have strong teams established for the graduation requirement courses.” During common planning time, the movement of teachers between teams is normal.

Typically, common planning time begins with a meeting of the entire department. At the meeting, the agenda and goals for the day are discussed and team placements are decided. During the common planning time a substantive amount of time is spend on transitions and with team members coming and going and being “caught up” by their team members on what has occurred in their absence. During four of the common planning times that were observed, about one-fifth of the time was consumed by transitions. Overall, the difficulty of being on multiple teams was viewed as a challenge for the use of common planning time in the master schedule.

**Impact of band and chorus.** Another perceived limitation to the master schedule was the existence of band and chorus in stationary D and E periods. Band is scheduled during D period
and chorus is scheduled during E period. As previously stated, these classes are unique in that they enroll students in grades 9-12. The building principal stated that “band and chorus” drive a lot of the schedule. This is true because “a lot of these kids are high performing kids, so now you want your APs in there, so if that is going to happen, it has to happen outside of the band and chorus block.” Since the high performing band/chorus students also often take multiple AP classes, those classes cannot be schedule during either D or E period. The placement of band/chorus and the resulting impacts on Advanced Placement courses reinforces student-grouping patterns. As a result, Advanced Placement courses must be scheduled in either the first three periods of the day or the remaining two. The 14 different Advanced Placement courses then must be scheduled in the remaining five periods. This reduces the options for scheduling these classes and increases conflicts in student schedules.

While most respondents did not bring up band and chorus as a limitation of the master schedule, among those who did views were mixed on the extent to which band and chorus were limitations to the master schedule. Only a third of respondents commented on the impact of band and chorus and most viewed it as benign. One teacher expressed the general sentiment that band and chorus students, “tend to be involved in everything, but usually those are the students who can do it all.” On the other extreme was the view held by just one passionate respondent that the band and chorus represented the school’s misplaced priorities. This department chair summarized his view by asserting that the school has “no problem taking the kids out for four days to go to Disney or to go to do this all state jazz thing or this thing. There are years where we get slammed by music, it’s like, for an elective why are we allowing these kids to miss like up to six days to do music?” This viewed existed as an outlier perspective.
Increase in overall workload. A final theme that emerged in the discussion of the limitations of the master schedule was that some teachers and department heads felt that the scheduled had increased their overall workload. Both teachers and department chairs expressed that with the adoption of the current master schedule their “workload definitely has increased.” Many spoke of the dedication of their colleagues and of the dedication of the profession: “If you are a good teacher you take a lot of work home or you stay late and get your work done.” While this was a common view among teachers and department chairs, not surprisingly, the perspective of the building principal differed. According to the building principal, teachers at Riverbend, “have it pretty good.” In Table 12, The building principal offers a sample teacher schedule to support this assertion.

Table 12
“Typical” teacher schedule highlighting duties and preparation periods

<table>
<thead>
<tr>
<th>Warning Tone 7:35</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 3</th>
<th>Day 4</th>
<th>Day 5</th>
<th>Day 6</th>
<th>Day 7</th>
<th>Sample CPT Thursday</th>
<th>Sample Advisory Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:50-10:45</td>
<td>ELA 9 Level II</td>
<td>Prep.</td>
<td>ELA 9 Level II</td>
<td>Communicações II Level II</td>
<td>ELA 9 Level II</td>
<td>Communicações II Level II</td>
<td>Communication II Level II</td>
<td>C</td>
<td>C</td>
</tr>
<tr>
<td>Lunch 1</td>
<td>Prep</td>
<td>ELA 9 Level</td>
<td>Prep</td>
<td>ELA 9 Level II</td>
<td>ELA 9 Level II</td>
<td>ELA 9 Level II</td>
<td>E</td>
<td>E</td>
<td></td>
</tr>
</tbody>
</table>
Teachers who perceived that they had an increased workload saw students as the party that suffered. One department chair summarized this position saying “It hurts the students as well, because if we are prepping our labs after school we are not able to meet for extra-help” and then added it was not for a lack of effort on the teachers part because “many of my teachers are here daily to 4:30.” Teachers communicated that the use of common planning time and the increases collaboration, in addition to their numerous other obligations, took time away from their individual classroom responsibilities.
The limitations to the master schedule were focused around two dominant themes. Teachers who felt that the schedule did not use time effectively pointed to the irregular meeting schedule, the partial and limited nature of the schedules rotating, the elimination of science labs, and the impact of band and chorus. The other dominant theme that emerged was the difficulty of balancing individual responsibilities and collective goals. These concerns included the difficulty of being on multiple teams, and not having enough time to complete individual tasks.

**Findings and Analysis: Research Question 2 – How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?**

In exploring how the master schedule could be revised to improve student learning several themes emerged (see Table 13). Many of these themes address the needs expressed in respondents’ discussions of the master schedules limitations. Three themes emerged: getting a true rotation in the master schedule, having more frequent and effective common planning time, and having longer instructional periods built into the master schedule. In general, respondents felt that the schedule should be revised to emphasize aspects of the schedule they saw as strengths or eliminate/reduce aspects of the schedule that they saw as a limitation.

<table>
<thead>
<tr>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “True” rotation in the master schedule</td>
</tr>
<tr>
<td>• More frequent and effective common planning time</td>
</tr>
<tr>
<td>• Longer instructional periods built into the master schedule</td>
</tr>
</tbody>
</table>

**Additional and improved common planning time.** Improving common planning time was a dominant theme for how the schedule could be revised to improve student learning. For
some department chairs, this meant common planning time “every week” instead of every other week. Teachers often expressed a desire to simplify their common planning teams. For example, a teacher suggested faculty could be on a “priority team” for a quarter or semester. While this would limit their efforts on some classes, teachers would get the chance to “really focus on one thing.” Next academic year, the social studies department will pilot limiting to two the number of teams of which a teacher can be a member. In theory, this will allow teams to work for 25 minutes each during the common planning time. Since it is department chairs’ responsibility to plan and report to the principal on each common planning time, they had the most concerns about how to improve peer collaboration. They are beginning to consider teacher teams when assigning courses, because in the past “there hasn’t been thought about teaming, when teacher assignments were made.”

Incorporation of an extended learning block. While the science teachers obviously would like to have an extended period or a lab period incorporated back into the schedule, they are not the only group which expressed that desire. Several teachers advocated for an occasional extended period “for projects and labs and such.” Such a revision might include a fixed time slot, on a selected day(s), for an extended period. Classes would rotate into that period on an even basis; giving each period a routine extended learning time. There are two methods of achieving this: one where an additional class is dropped and the other where all other classes are shorted. Table 13 illustrates both options for a fixed extended learning time period.

Table 13

<table>
<thead>
<tr>
<th>Two options for an extended learning/lab period</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Warning Tone</strong></td>
</tr>
<tr>
<td>7:35</td>
</tr>
<tr>
<td>Time</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>7:40-8:47</td>
</tr>
<tr>
<td>8:51-9:46</td>
</tr>
<tr>
<td>9:50-10:45</td>
</tr>
<tr>
<td>Lunch 1</td>
</tr>
<tr>
<td>(10:49-11:13)</td>
</tr>
<tr>
<td>Lunch 2</td>
</tr>
<tr>
<td>(11:18-11:42)</td>
</tr>
<tr>
<td>Lunch 3</td>
</tr>
<tr>
<td>(11:49-12:13)</td>
</tr>
<tr>
<td>12:17-1:12</td>
</tr>
<tr>
<td>1:16-2:11</td>
</tr>
<tr>
<td>Dropped</td>
</tr>
<tr>
<td>Period</td>
</tr>
</tbody>
</table>

Both options present challenges. The dropping of a period in the master schedule exacerbates the irregular class-meeting schedule that frustrates teachers in current rotation. This schedule option would create two days, every week, where there would be two dropped periods and three days (on the full weeks) where only a single class was dropped. So that these double drop days did not meet consecutively, they could not be placed on either Wednesday or Friday (because of common planning time). The shortened schedule option also presents challenges. The extended period would have to take place in the morning as not to interfere with the lunch periods and the work-study program. This would create a situation where one class was significantly lengthened at the expense of cutting the other two morning classes in half. Such a tradeoff presents limitations that might outweigh its value.
**True master schedule rotation.** The final theme that emerged was modifying the master schedule in order to have a true rotation. This suggestion was popular with teachers and department chairs but would present challenges for the building principal. The first challenge would be that options for students in the work-study program would be severely curtailed. Finding businesses and other community organizations that could accommodate the rotating nature of the high school master schedule would be difficult. However, while the 10-24 students in the work-study program would likely suffer because of a true rotation in the schedule, the thousand other students might benefit. Then again, the perceived benefits might appear less tangible than the very real loss of work-study opportunities. Practitioners were aware these concerns and expressed that the “trade offs” were very real.

One change to the schedule was under consideration while this research study was being conducted: the Riverbend Public Schools were exploring a later start time. The push for the late start time came largely from the parents in the community who, informed by research that teens needed more sleep, pushed the issue. The superintendent of the district held a number of public forums to discus the issue. While this seemed like a potential for change for the school, practitioners showed little enthusiasm. Some of the respondents were dubious of the claim that teens needed more sleep, while others simply concluded, “If they have to come in later, then they will stay up later.” Additionally, some respondents pointed to similar explorations at neighboring districts that did not result in change “because of the impact that it would have on athletics.” Outside of starting and ending the school day at different times, the late start proposal would not otherwise affect the high school master schedule.
Comparing perceptions across groups

Shared perceptions. Teachers, department chairs and the building principal have general agreement on the strengths of the master schedule. All groups see themselves as having had a role in shaping the evolution of the master schedule, resulting in a perception of the schedule being “our schedule.” The sense of collective responsibility was evident in the language that respondents used to describe the school. Phrases like “our students”, “our schedule,” or “our challenges” communicate a sense of ownership and community. All three groups featured in this study considered their peer collaboration real and beneficial.

All of the groups of practitioners saw the main implementation of peer collaboration, common planning time, positively and as highly effective. The products of common planning time, common assessments and common projects were widely used and appeared to be embraced. All three groups in this study also viewed department and teacher autonomy as contributing to the success of common planning time. It would be easy to see how a less effective or collaborative environment could see autonomy as being “given no guidance,” but the opposite was true. From the building principal to the department chair to the teachers, all groups expressed positive views towards teacher autonomy.

Finally, the culture of collaboration and autonomy contributed to a sense that the master schedule focuses time on student growth. Each of the three parties reflected positively on the longer class periods, common assessments, and the interventions to help struggling students.

Differing perceptions. One of the major points of disagreement over the master schedule was the elimination of the science labs. While the building principal identified this as a “real concern,” it has clearly not been enough of a concern to warrant changing the master schedule. The opposition to the science department represented a categorical argument, while
the building principal’s opposition was consequential. For the science department, what is right is what works and science labs are the right approach to doing science, from the pragmatic outlook of the building principal the data, derived from Advanced Placement and NEACAP scores, does not warrant a change. For a self-proclaimed “data-driven” school like Riverbend, the data matters.

Another substantive point of disagreement between teachers and department chairs and the building principal would be the lack of a true rotation. For the building principal, no defense of the system was needed because “no schedule is perfect” and “it is what it is.” Again, this pragmatic outlook reflects his position as the creator and designer of the master schedule. This outlook is shaped by the finite nature of time during the school day and the fact that every addition in one area means that there is a subtraction in another area. Teachers, who do not have to answer publicly for programs like band and work-study, are freer to criticize their impact on the master schedule. Additionally, the concerns that teachers have over the limited rotation are less tangible than the building principal’s advocacy for the continuance of the work-study program.

The final contrasting view on the value of the master schedule involves disagreements over the existence of an increase in workloads for teachers. The view of the building principal that teachers have it “pretty good” contrast sharply with the teacher and department chair view that there is not enough hours in the day to do their job.

Overall, most of the contrasting views on the schedule related to the limitations and their consequential revisions on the master schedule. The department chairs tended to share most of the views of teachers, which is understandable since their main employment and identity is as classroom instructors rather than department administrators.
Summary of Research Findings

Teachers, department chairs and the building principal at Riverbend shared many of the same perceptions of the strengths of the master schedule. For all three groups the schedule allowed for a student centered learning environment. This student centered learning environment is perceived to be facilitated by a culture of collaboration at Riverbend. This collaboration exists both within departments and to a lesser extent inter-discipline. The major vehicle for collaboration at Riverbend is common planning time, which is also viewed positively by all practitioners.

The major limitations of the master schedule were identified as an ineffective use of time and the difficulty of balancing individual and collective professional responsibilities, though the second was primarily identified as a weakness by classroom teachers. The building principal and the teachers/department chairs also held differing views on the limitations of the master schedule.

Respondents’ views towards how best to revise the master schedule were largely shaped by their views of the limitations of the master schedule. Most respondents viewed the revisions as a solution to the limitations they identified. For example, the most frequent limitation that was identified was the lack of “true rotation” in the master schedule. For individuals who identified this limitation, the simple solution was to allow the master schedule to rotate. Other revisions to the master schedule involved strengthening already strong aspects of the master schedule. These ideas for revision include expanding common planning time and making it more effective.

CHAPTER V: DISCUSSION OF RESEARCH FINDINGS
This chapter contains a summary of the research findings, a review of the significance, the problem of practice and the methodology used in this study. The findings of the research study are discussed in relation to the theoretical frameworks and the literature review. Finally, the chapter presents implications for further research.

This study was completed to provide insight into teachers’ and administrators’ perceptions of the value of a master schedule that prioritizes regular peer collaboration and professional development. The results of this study are intended to help other schools exploring changes to their master schedules to build time for regular peer collaboration and professional development. This study was guided by two research questions:

1. How do teachers and administrators perceive their high school master schedule that prioritizes regularly scheduled professional development and collaboration impacting student learning?

2. How do teachers and administrators think the master schedule could be revised to better support teacher development and student learning?

Summary of the Problem

In any school, the master schedule is the means of allocating time. The decisions that a school makes about allocating time reflect strongly on the values and priorities of the school and the community it serves. If a school proclaims to want to help students who struggle with the regular curriculum, but does not set aside time to accomplish this, then the schedule reveals the school is not serious about intervention for struggling students. If a school proclaims that peer collaboration and regular professional development are priorities for its faculty, but does not provide time for that collaboration, then the claim is not sincere. While a school’s mission
statement or school goals may proclaim the vision of what the school strives to be, the master schedule reflects the school’s true identity.

The core feature of the comprehensive high school is the variety and depth of curriculum offerings that are available to high school students. Unlike students in elementary and middle schools, comprehensive high school students take an individualized program of courses, often at varying academic levels. In elementary school and middle school, whole classes travel together and have the same teachers and take and same enrichment or exploratory classes. While all students at a compressive high school take many of the same required classes, they have a wide variety of electives and academic levels from which to choose. As students mature, the comprehensive high school offers choices which help them transition into a post-secondary experience that suits their aptitudes and abilities.

As the student experience at a comprehensive high school varies tremendously from student to student, the experiences of teachers varies tremendously. Teachers at comprehensive high schools often teach multiple courses. Unlike middle school teachers, who generally teach students in only one grade and often in heterogeneously grouped classes, high school teachers typically prepare to teach multiple classes and academic levels each day. The master schedule must organize time in a way that meets all these demands.

If the breadth of demands on the master schedule were not complicated enough at a comprehensive high school, modern education reform adds additional challenges. As standardized testing becomes a larger factor for student and school success, comprehensive high schools struggle to find the time to remediate underperforming students. Mandates to increase time in learning, which arose in part to address underperformance, have driven schools to adopt
new scheduling paradigms like the block or alternating block schedule. These same concerns have fueled a push towards more educator collaboration and professional development.

Regular time for peer collaboration and professional development can be achieved through initiatives like professional learning communities and common planning time for teachers. At the elementary level, teachers work in self-contained classrooms from which their students are be called for grade wide enrichments in art, music, or physical education. Enrichment pullouts create time in the master schedule that teachers can use for common planning, lesson design, and assessment development, and so instituting peer collaboration and regular professional development is a relatively simple process. At the middle school, level teaming is common. Here a team consists of students who share a common set of teachers. As in the elementary schools, core academic teachers have an opportunity to meet and discuss their instructional strategies and approaches to assessment when students are scheduled to be in their enrichment classes.

The complexity of the comprehensive high school master schedule makes such regular peer collaboration difficult and cumbersome. Teachers who might want to collaborate between departments and between grade levels are often unable to find time to collaborate during the school day. Students in one core academic class, like English, could have any number of different social studies, math or science teachers. As most high schools, begin their day between 7:00 and 8:00 in the morning, there is no time to collaborate in the morning. After the end of the school day, many teachers are engaged in extra-help sessions or in advising and coaching extracurricular activities. Collaboration between teachers, no doubt, occurs in most schools, but unless the master schedule allows for regular time, the peer collaboration is fleeting and inconsistent which limits its efficacy. To work effectively, any systematic form of peer
collaboration and regular professional development must happen during the time assigned for the regular school day.

**Review of Methodology**

This study consists of a qualitative analysis of interviews and focus groups with teachers, department chairs, and the building principal of Riverbend High School. Data for this case study was also collected from a document analysis consisting of a variety of documents including, but not limited to the school’s master schedule, program of studies, NEASC reports, and documents from the Rhode Island Department of Education. I also conducted observations of teacher common planning time.

Teachers, department chairs, and the building administrator were interviewed about how the master schedule impacted student learning. Particular focus was paid to the extent to which peer collaboration and regular professional development contributed to student learning as perceived by teachers, department heads, and administrators. Respondents were asked to discuss the process by which the master schedule came about and their thoughts on the areas where the master schedule could be revised to improve student learning. A summary of the research findings was presented in Chapter Four where the findings were organized around major themes and sub-themes along with a comparing and contrasting views held by the different participants. This chapter presents a summary of those findings as well as an analysis of those findings in relation to the theoretical frameworks (Chapter One) and the literature review (Chapter Two).

**Summary of Findings**

The themes that emerged as a result of this study are best understood within the context of their respective research questions. When examining the strengths of the master schedule, teachers, department chairs, and the building administrator all perceived the master schedule to
(1) foster a school wide culture of collaboration, (2) value teacher autonomy, and (3) contribute to a greater emphasis on student-centered instruction. When examining the limitation of the master schedule, teachers and department chairs saw the dominant limitations as (1) inefficiency in time organization and (2) the difficulty of balancing team and individual responsibilities. Participants indicated three major responses to these limitations: (1) having a true rotation in the master schedule, (2) having more frequent and effective common planning time and (3) having longer instructional periods built into the master schedule.

Perceptions of the limitations of the master schedule offered more opportunity for disagreement between participants in this study. Some of the limitations perceived by teachers and department chairs were practical, while others were theoretical. For example, most teachers and department chairs felt that the irregular meeting schedule was a limitation of the master schedule. They objected to this irregular meeting schedule because it made the practical aspects of covering curriculum more difficult. The elimination of double blocks for science labs was also seen as a limitation. Science teachers felt that teaching science was impaired by not having adequate time for labs, although student test scores did not suffer so there was no measurable harm produced by the elimination of the labs. This limitation was based on a perception of how science should be taught and conducted and not on the actual results of students’ academic performance.

Perceptions of how to best revise the master schedule were relative to extending a perceived strength of the master schedule or revising a perceived weakness of the master schedule. For example, most respondents in this study viewed the time dedicated to peer collaboration as beneficial and as a result wanted more time dedicated to peer collaboration in master schedule.
The themes from Chapter Four are briefly summarized in the following section, after which they are analyzed using the theoretical frameworks (Chapter One) and findings from the literature review.

**Strengths of the master schedule.** Three themes emerged in exploring the strengths of the master schedule: (1) it supports a school wide culture of collaboration, (2) it values teacher autonomy, and (3) it emphasizes student-centered instruction.

**Supporting a school wide culture of collaboration.** All participants in this study identified that Riverbend High School had an effective and school wide culture of collaboration. This culture resulted from a variety of circumstances including some opportunities that were seized and some goals that were planned. The building principal and the department chairs indicated that they saw the massive turnover in faculty, due to retirements in the past decade, as an opportunity to build a culture of collaboration. Department chairs and the building principal stated that a desire and ability to collaborate was a determining of the hiring process. Teachers who were new to Riverbend confirmed this sentiment and reported that Riverbend’s widespread culture of professional collaboration appealed to them as applicants.

While most of the collaboration at Riverbend happens within departments; interdisciplinary collaboration also exists. Teacher respondents felt that the master schedule afforded them opportunities to work together. Examples of such collaboration existed between core academic subjects as well as between elective subjects. The American Studies classes were team taught by an English and Social Studies teacher in a double-linked period. The television production teacher worked with English teachers during common planning time to coordinate television stories with journalism and English classes. Respondents felt that these opportunities for collaboration existed because of the master schedule.
Valuing teacher autonomy. All respondents in this study indicated that teachers and department chairs had nearly full autonomy to decide how to allocate the time set aside for peer collaboration. All respondents indicated that this gave the faculty ownership over their common planning time and allowed common planning time to be based on student learning needs.

In addition to the opportunity to be self-directed in the use of common planning time, most department chairs reported an increased responsibility in planning district professional development days. Riverbend public schools are unique in that its work year is 187 days, the longest in the state of Rhode Island. Department chairs welcomed the opportunity to plan some of the districts’ professional development days and extended many of these professional development activities into common planning time.

Emphasizing student-centered instruction. The revised master schedule eliminated homeroom, extended class periods, developed common assessments, and implemented extensive interventions for struggling students, all of which were seen as effectively focusing time on student growth. Before the most recent master schedule was adopted, most teachers perceived homeroom as a waste of time. Rhode Island requires that all of its public high school dedicate 330 minutes to learning each week, and eliminating homeroom allowed Riverbend High School to have more class time and time for peer collaboration. Participants saw this change in the master schedule as a worthy and effective use of time.

Eleven minutes may not seem significant, but all respondents in this study viewed extending the class period from 44 to 55 minutes as a valuable aspect of the master schedule. Teachers all indicated the valuable aspects of a longer instructional period such as time for practicing a concept, or exploring a topic in greater depth, or giving students more opportunities
for group work and presentations. Everyone believed that extended class periods deeply benefited student learning.

Riverbend has also responded to RIDE mandates by implementing common assessments, one of the three choices (senior project, common assessments, and student portfolios) from which the Department requires schools select two. Riverbend teachers and department chairs viewed themselves as leaders in the development of their senior project and undertook the use of common assessments in much the same way. Some respondents, particularly in the English department, viewed themselves as pioneers of common assessments and felt that the master schedule afforded them the opportunity to pursue common assessments.

Like all schools, Riverbend High School makes efforts to help with students who struggle academically. Most participants in this study indicated that their master schedule allows for a variety of intervention strategies. The master schedule integrates intervention centers where students who are struggling academically can work on remediation strategies with a certified teacher. Teacher schedules within the master schedule were arranged to accommodate for these interventions by reducing the teaching load of those staffing the centers. The fact that Riverbend High School is located in an exclusive suburb, with generous financial resources for their schools and high relative property values, is essential for understanding the context that these inventions take place. Since the number of struggling students is relatively small, compared with the overall student population, Riverbend can easily afford to allocate resources to address the needs of struggling students.

Limitations of the master schedule. While there was substantive agreement among respondents on the strengths of the master schedule there were differing views of its limitations. The building principal primarily saw opportunities to increase the established strengths of the
current schedule. For example, the principal identified a need for more interdisciplinary collaboration as a limitation of the master schedule; overall, he felt that the schedule “is what it is” and “no schedule is perfect,” but did not perceive the schedule causing harm. Teachers and department chairs perceived differing aspects of the master schedule as actually causing harm to the learning process at Riverbend High School. Two themes emerged in identifying these limitations: the inefficiency of the schedule’s time use and the difficulty of balancing team and individual responsibilities.

**Schedule is not an efficient use of time.** Teachers and department chairs indicated that the master schedule’s limited rotation, band/chorus scheduling, the work-study program, infrequent meeting schedule, and elimination of science labs, were all limitations of the master schedule.

Band, chorus, and work-study demands forced the master schedule from a true rotation, in which the periods would rotate in order, to a limited rotation wherein two blocks are set aside for end of the day release of work-study students. Furthermore, the multi-grade scheduling demands of band and chorus restrict the scheduling of academic classes during those periods. The needs of band and chorus and of the work-study program are accommodated by a series of mini-rotations within the large schedule. Band and chorus are both extra-curricular activities and elective courses that students choose to take and are not part of the core academic requirements that a student needs to take to graduate. Teachers and department chairs saw this as placing non-academic needs above of the best interests of the students in their classes.

Both band and chorus presented a case where the needs of a small group of students conflicted with the needs of the majority of students. While most students at Riverbend are not in either band or chorus or work study, all students feel the impact of those classes on the master
schedule. While most classes at a comprehensive high school are grade level specific, band and chorus place a unique impediment on all aspects of the master schedule because they necessitate that students from all grade levels meet at the same time. As a result, band and chorus occupy two periods before lunch every day, forcing restraints on the master schedule such as the concentration of most of the Advanced Placement courses in the first three periods of the day or the two last periods of the day. Work-study presents a similar by confining the two periods during which work-study is conducted to the end of the day. As a result, classes that meet in the afternoon always meet in the afternoon and students who may learn their subject better at different times of the day do not get that opportunity.

While teachers viewed non-academic concerns as prioritized by the master schedule, they also felt that the irregular nature of the schedule’s rotation contributed to a reduction in the frequency of class meetings which was compounded by the school’s annual calendar, full of vacation and holidays. Every Thursday common planning time or advisory forces an additional dropped period on that day. For teachers and department chairs (who teach two-thirds of a full teacher’s load) the infrequency of class meetings created difficulties for student learning. For example, a class that meets on Wednesday may be dropped on both Thursday, because of the double drop, and Friday as a result of the regular drop. For the students in that class they may go from Wednesday to the next school week without meeting. Add in the holidays that frequently appear on Mondays and the class meeting schedule becomes more infrequent. Some of these difficulties included occasional long lapses between lessons and confusion, among students, to due dates for projects and class assignments.

Science teachers were firmly opposed to the schedule’s elimination of the double period for science labs. For these teachers the objection was theoretical and not practical:
teachers and the science department chair could not present any metric showing that students were learning less science without a double lab. Instead, these otherwise data driven teachers felt that scientific instruction without labs was incomplete and unnatural.

**Difficulty of balancing team and individual responsibilities.** The majority of teachers at Riverbend High School teach multiple different courses (often referred to as preps). While this is a common feature of a comprehensive high school, it creates difficulties for peer collaboration, because each teacher may be assigned to a team for each of the classes he teaches. With each teacher dividing time between multiple teams, meaningful participation in each team becomes difficult, and each team has difficulty drawing in all of its members during collaborative planning time.

With all of the initiatives, common planning time, and regular responsibilities of teachers at Riverbend, it is not surprising that teachers and department chairs indicated that they felt the master schedule led to an increase in overall workload, though the building principal asserted that teachers “have it pretty good”.

**Revisions to the master schedule.** Participants in this study generally felt that the master schedule could be revised to accentuate positives or to minimize and/or eliminate those negatives. Three themes emerged when reviewing participants’ responses to the question of revising the master schedule: (1) establishing a true rotation in the master schedule; (2) increasing common planning time, and (3) building a longer instructional period into the master schedule.

**True rotation.** Easily the most popular area of revision suggested by participants in this study was to eliminate the limited three-tiered rotation and utilize a true sequential rotation instead. This rotation would be popular among teachers and department chairs, but would
present a challenge for the building principal. This change would eliminate an effective work-study program because there would be no regular time that work-study students could arrange internships.

**More common planning time.** While establishing a true rotation presents many problems, the addition of more common planning time could easily be accomplished. Participants indicated that they would like additional common planning time to both widen and deepen peer collaboration. A deeper conceptualization of common planning time would mean more focus on the established purposes and department goals that drive common planning time. A wider conceptualization of common planning time would incorporate more interdisciplinary peer collaboration.

**Incorporation of an extended learning block.** While the science department clearly wanted to return to a regular extra period for labs, other participants in this study expressed a desire to revise the master schedule to include longer instructional periods. Extended learning blocks would provide opportunities in the master schedule for in-depth class projects, group presentations, guest speakers and other special activities. Though respondents spoke favorably of the idea, they were uncertain how an extended learning block would be incorporated into the master schedule.

**Discussions of Findings in Relation to Theoretical Framework**

The theoretical framework used to inform the design and analysis of this study included organizational culture theory and deconstructionism. The findings in relationship to each of these areas is discussed below.

**Organizational culture theory.** Organizational culture theory provides an understanding of how the school community constructs its own identity and values. Bush (2007)
states that one of the central themes of cultural organizational theory is that it “focuses on the values, beliefs and norms of individuals in the organization and how these individuals’ perceptions coalesce into shared organizational meaning” (p. 156). Organizational culture theory has been a vital tool in understanding how teachers, department chairs, and the building principal perceive their school master schedule that prioritizes peer collaboration and professional development.

Organizational culture theory is useful for looking at Riverbend High School as a school community. Morgan (1997) states, “that effective organizational change always implies cultural change” (p. 151). Riverbend High School has been through substantial organizational change over the past decade. In addition to the numerous changes to the master schedule, there has also been a substantial turnover of teachers due to retirement and changes in administrative leadership. While specific individuals have played important roles in promoting the organizational changes at Riverbend High School, the school community as a whole has been responsible for enacting those changes. Numerous examples exist of the school community enacting organizational change and then embedding that change into its daily practices. State law in Rhode Island requires common assessments. Part of Riverbend High School’s rational for adopting common planning time has been to facilitate time to create and revise common assessments. Rather than launching wholesale opposition or meekly complying with this mandate, teachers have made this part of their organizational culture. For example, social studies teachers maintain a large electronic database of their assessments that they freely share with new teachers and discuss and revise regularly. For a new teacher entering this department, organized peer collaboration is the cultural norm.
Battistich, Solomon, Watson and Schaps (1997) define a school communities as “places where members care about and support each other [and] actively participate in and have influence on the group’s activities and decisions, feel a sense of belonging and identification with the group, and have common norms goals, and values” (p. 137). Riverbend has nurtured a strong school community with a shared goal of creating a data driven professional learning community, a goal supported by all the stakeholders from classroom teachers to members of the school committee. In the hiring process, candidates are selected for their desire and ability to work collaboratively. At the district, level the school committee flew dozens of teachers to Adlai Stevenson high school in Illinois to see an exemplar of professional learning community in action. During common planning time, teachers stay within their agreed upon norms and refocus themselves from off-task conversations efficiently. After all of my observations, I agreed with the study’s participants that the school culture worked and was driven by improving student learning.

**Deconstructionism.** Deconstructionism is defined by The Oxford American Dictionary (2005) as “a method of critical analysis of philosophical and literary language that emphasizes the internal workings of language and conceptual systems, the relational quality of meaning, and the assumptions implicit in forms of expression.” Deconstruction examines the importance of unstated meaning and values. What deconstructionism allows is a means to take apart, deconstruct, the conceptual system that is a high school master schedule. When applied to a master schedule, deconstructionist theory emphasizes that the individual and not the institution, assigns meaning to the use and allocation of time.

Deconstructionism is helpful in uncovering the unstated and implied meaning of the high school master schedule. Voerman and Gustafson (2004) state that as a form of analysis
deconstructionism “instead of focusing on the explicit message of a text, the deconstructionist focuses on its hidden assumptions” (p. 83). One of the most profound hidden assumptions about the master schedule at Riverbend High School is in its evaluation of the works-study program. The entire school day’s rotation is stunted for the benefit of the 15-20 students in work-study. A thousand students will endure a master schedule that, for example, always gives them math at the end of the day when it may not be best for them, so that a dozen or so students can take part in work-study.

Since the work-study program predates the creation of the master schedule it reveals the power of the institutional inertia, even in a system that proclaims itself as dedicated to change. Once a program is begun, and produces some benefit and little harm, there does not exist the will to revise and/or alter the program. Also, the work-study program reveals that the Riverbend as a comprehensive high school continues to present a cafeteria style approach to education. This consumer mentality is based around the idea that the school must present options to their students. Finally, the impact of the work-study program reveals a larger insight into education reform. Most education reform is conceived of as additions to the existing system. More programs and initiatives to assist and develop areas that are thought of as needing improvement. In the case of adding the master schedule to include common planning time, the impact of work-study on the master schedule is unresolved.

The rotation is also fixed by band and chorus, which again places the priority of approximately 100 students above the needs of the remaining thousand. The commonality between these different groups is that they have community advocates who insist the school meeting the needs of these students. Within the context of presenting options to students, Riverbend has to present an option for the minority of students who are perceived as not likely to
attend college or university. Riverbend must present to the community that it has an option to help transition these few students in the larger community.

Deconstructionism helps explain the hidden but evident assumption that the stakeholders at Riverbend High School generally prioritize time dedicated to peer collaboration more than time dedicated to instruction. With all of the time allocated to common planning time, advisory, field trips, assemblies and athletic dismissals, time dedicated to instruction is given a relatively low priority. There exists no time in the master schedule where another school activity is preempted or interrupted for additional instructional time. The curriculum, as delivered through class instruction, is a matter of secondary importance.

Deconstructionism is also helpful in identifying the hidden assumption that the collective will of the academic department/common planning time team should hold priority over the will of the individual teacher. The assumption is if a majority of the team decides on, for example, an essay question then the question should be given. No latitude or consideration is given to the view that in this instance the majority may be incorrect and the minority view is forced to go along, less they be branded as not interested in collaboration and being a member of a professional learning community. The belief is that an individual teacher’s passion and skill at teaching are necessary to being an effective teacher, but they are not sufficient. The widely held belief at Riverbend is that to be an effective teacher one must have skill, passion and the ability to collaborate. The unstated assumption would be that an identical education is an equitable education. The stated assumption at Riverbend appears to be that collaboration can benefit the education of all students. The unstated assumption then is that individualism, in instruction and assessment, would cause harm to all students. The stated viewed is that the system is both more fair and efficient if every student is learning the same material in the same way. This would be
fallacious reasoning because it appeals to the popularity of an idea and not its inherent worth. In other words, just because the majority agrees that something is important, in the curriculum, and that it should be taught and assessed in a similar manner, that does not make it necessarily the most important area of content or skill.

Deconstructionism is particularly useful for analyzing the embedded meaning in a given situation and the various meanings of all relationships. For deconstructionists like Derrida (1976), power is an inherent feature in all relationships. The authority of the building principal at Riverbend High School played an important role in shaping this research project. The building principal at Riverbend High School was quite evasive about allowing me to observe common planning time. After consenting to the research project, the building principal was hesitant to coordinate an observation because, as he stated “I want you to see something good.” A deconstructionist analysis would state that he was aware that how his school was portrayed in this project would be a reflection of his leadership and thus he did not want to allow free access to teachers and their common planning time. Only after the researcher personally contacted several academic departments (thus making his denial a revelation of his desire to control the outcome of the observation), did the principal consent to the observations.

The building principal after consenting verbally, twice, to a voluntary electronic survey, removed his consent. After reading the questions the principal, who could not control the results of the survey, decided to remove his consent rather than take a chance with the outcome. His stated reason for not approving the survey was that “time did not permit it, at this time.” Considering the diverse interruptions of the school schedule, however, it is easy to see that the stated reason is not upheld by the daily practices. Because so many claims are made successfully against instructional time, time cannot be the sole reason that this claim was denied. A
Deconstructionist analysis might look beyond this cursory response see the potential for a threat to the authority and legitimacy of the principal.

Deconstructionism can also be used to help understand the positive responses that the researcher received when discussing the master schedule. Since Riverbend High School is located in an affluent community and is regarded as a successful school, participants in this study likely assumed that I was there to study some positive aspect of their schedule. Thus seeing their school and master schedule as worthy of study, they subconsciously concluded that it must be a valuable aspect of their school. The resulting positive comments, according to a deconstructionist analysis would be the result of their positive self-reflection.

**Summary.** The responses that practitioners shared about the values of the master schedule reveal that the school appears to have an effective organizational structure. The culture of the school is reinforced by the positive views of teacher autonomy in the planning and implementation of common planning time. Rather than view the lack of direction as an example of weak leadership and a lack of vision, the teachers and department chairs view their autonomy as an opportunity. While there is tension with regard to views on the master schedule’s impact on time for teachers to attend to all of their professional responsibilities, time for peer collaboration is still considered a priority. Rather than bitterly attend common planning time meetings filled with resentment of their use of time for correcting, calling parents, and planning, teachers and department chairs see the use of this time as valuable. This widespread endorsement of the master schedule is a product of the organizational culture of the school.

This culture developed gradually as the result of trial and error with input into the master schedule from teachers, department chairs, and the administration. Previous incarnations of the master schedule, with shortened common planning time and a rotating schedule, contributed to
the culture that largely views the master schedule as positive and effective. The faculty, who in large part began working at Riverbend High School during the process of schedule revision, have come to accept the master schedule as their own.

Organizational culture theory and deconstructionism offer both some competing frameworks for analyzing the master schedule at Riverbend High School. While this discord may seem to underline the validity of any conclusion, any deconstructionist analysis would already deny the existence of any objective truth about the master schedule. Deconstructionism allows for an explanation of the unstated and implicit meaning and impact of the master schedule. These unstated meanings include the prioritization of peer collaboration over instruction, the emphasis of the students on the powerful margins and the emphasis on the collective over the individual.

**Discussion of Findings in Relation to the Literature Review**

The literature review of this paper focused on four areas in relationship to the process of changing a high school master schedule to foster collaboration. These four areas are (1) an exploration of the recent developments and research related to high school master scheduling; (2) a look at how time is allotted for professional learning communities; (3) an examination of how common planning time is used in elementary and middle schools; and, (4) a theoretical look at time allocation in high school master schedules.

**Recent developments and research related to high school master scheduling.**

Throughout the 1990s, many American high schools transitioned from a traditional seven period days to a schedule with longer class periods. (Geiken & Larson, 1999, Rikard & Banville, 2005, Veal, 2000). Riverbend High School followed this trend and abandoned the traditional seven period schedule for a schedule that lengthens instructional time. The responses of teachers and
department chairs at Riverbend certainly echoed the sentiments of the National Education Commission on Time and Learning 1994 report that found that there was a shortage of instructional time in the school day (Lawrence & McPherson, 2000).

A major focus of the literature review for this project was the conclusion that quantitative measures were ineffective for measuring the efficacy of a school’s master schedule. This conclusion was the rationale and basis for the qualitative research design. None of the findings of this study contradict the premise that there does not yet exist a reliable metric for measuring the efficacy of a high school master schedule.

This study did not find that Riverbend restructured towards a small learning communities model. Small learning communities are defined as “small, interdisciplinary teaching and learning teams; rigorous and relevant curriculum and instruction; and a focus on inclusive programming and inclusive classroom practices” (Armstead, Bessell, Simbiante, & Plaza, 2010, p. 365). No respondent in this study mentioned any past or current movement towards the reorganization of Riverbend High School or its master schedule toward a small learning community. Riverbend’s affluence and success are likely reasons for the lack of perceived emphasis in this area. Much of the funding for the small learning community movement came from the Bill and Melinda Gates Foundation who have invested over $110 million into SLC reform efforts over the past decade (Thompson, 2011). The Gates Foundation has focused much of it’s effort on improving “underperforming” schools and since Riverbend is regularly regarded as one of the top performing schools in the region, no need was perceived.

Finally, the literature review explored how some schools, in response to the increased emphasis on standardized testing and school accountability, had modified their master schedule to include time for interventions and remediation. The findings from this study confirm this
Riverbend High School has made a number of modifications to the allocation of time in their school day to meet the needs of struggling students. Several core academic teachers have been given reduced teaching loads in return for their job supervising intervention centers. Teachers have been reassigned from the traditional non-classroom duty of supervising studies and lunches to help students in these intervention centers. Additionally, the school’s academic calendar places final exams two weeks before the end of school. This move was not made for the benefit of the majority of students but to meet the needs of struggling students.

**Professional learning communities.** While the literature on professional learning communities is extensive, the articles selected for this review focus on teacher perceptions of professional learning communities and attempt at coordinating regular time for professional learning communities. The term is so widely used that it is difficult to define, but a professional learning community can best be described as a collaborative effort of educators that focus on the end product of their efforts: the learning of the student (DuFour, 2004).

The literature review showed that in professional learning communities structural support, largely through a school’s master schedule, is a determining factor in perceived effectiveness. The findings of this research study partially support this claim. While the master schedule at Riverbend was essential to supporting the growth of the school’s professional learning communities it was not the only factor. School culture was also an essential contributing factor to the perceived success of Riverbend High School’s professional learning communities. While a part of the school’s culture is shaped by the allocation of time in the master schedule other factors are also significant. One of these factors includes the autonomy that teachers are granted in their common planning time. Another factor was the concentration on growing the culture of collaboration that drives the hiring process.
The literature on building a master schedule that includes time for peer collaboration through professional learning communities is scarce; the staff at Riverbend High School adopted their schedule through observation and trial and error. Respondents in the study, like the building principal, looked at other schools’ schedules rather than the professional and academic literature for a model of how to improve the master schedule. Part of this observation came from visits to school committee member Rich DuFour’s home school in Illinois. Other parts of the observation came from other local schools that were attempting to incorporate time for peer collaboration. This subject of trial and error from observing other schools was not part of the literature on how to construct a high school master schedule that incorporates time for regular peer collaboration and professional development.

Common planning time. The research completed by Mertens, Flowers, Anfara, and Caskey (2010) indicates that for many middle school teachers, the dominant tension of common planning time is between discussing specific student learning needs or discussing best instructional and assessment practices. Nearly all of the literature that focused on examining how teachers utilized their common planning time arrived at this conclusion. This research focused on middle school common planning time because the typical middle school master schedule utilizes a team teaching approach that makes the facilitation of common planning time achievable. The tension between discussing individual students and discussing strategies to improve instruction and assessment was not supported by the findings of this study.

Two reasons help explain why this tension, so evident at middle schools, was not evident at Riverbend. The most obvious reason is that teams of teachers at Riverbend High School did not share the same students. Most of the teams were organized by departments and for example, the tenth grade teachers on a department team would share the same subject matter and not the
same students. By contrast, most middle school teams are comprised of teachers from different academic subjects who share the same grade level students. A second reason would be that when this study was conducted at Riverbend High School, the use of common planning time was well into its third year. The building principal at Riverbend High School admitted that developing an effective use of common planning time was a gradual process. Some teachers, when common planning time began, took the lack of students in school as an opportunity to arrive late to school or catch up on school errands like photocopying and paperwork. The building principal described behavior like this as isolated. Teachers and department chairs mostly responded that during common planning time the only major rule that they stick with is “No correcting”. No respondent in this study cited off-task teachers as a feature of common planning time at the school. As a result, the practice of discussing instructional and assessment strategies was more deeply embedded into the culture of the school.

**Time allocation in high school master schedules.** Delany (2008) argues that the master schedule of a comprehensive high school creates a paradox. Comprehensive high schools typically offer a diverse program of studies, but the master schedule often limits the options students have to select courses from the program of studies. This conclusion was supported by this study.

Several examples support the idea that the wide variety of choice is limited by the allocation of time in the master schedule. Many students at Riverbend express an interest in participating in internships through the school’s work-study program. For students this option is an enriching and engaging way to learn more about a subject or skill of interest to them; however, few of Riverbend students take part (15-20 out of 1100) take part in work-study because it limits the rest of their schedule. By removing the last two classes of the day, all of the
student’s required courses are forced into the first five periods and thus they cannot often take
other courses of interest to them. Similar restrictions are created in the master schedule by band,
which forces Advanced Placement classes into either the first three periods or the last two
periods of the day. When these two preferences, (for band/chorus and advanced placement
courses) are paired, they limit student from other singleton options in the master schedule.

Validity and Limitations

Maxwell (2005) identified two threats to a qualitative research study: researcher bias and
reactivity. Maxwell stated that researcher bias cannot and should not be eliminated, but
awareness of the “researcher’s values and expectations should influence the conduct and
conclusions of the study” (p. 108). In addition, Maxwell notes “the influence that the researcher
has on the setting or individuals studied,” which he dubs reactivity (p.108). Like researcher bias,
reactivity cannot be eliminated, but instead must be acknowledged to understand how the
researcher is “influencing what the informant says, and how this affects the validity of the
inferences” (p.109). Maxwell dismisses the notion of “objective truth” as being possible in
qualitative research, but instead argues that a researcher should aim to achieve validity, which
gives “some grounds for distinguishing accounts that are credible from those that are not” (p.
106).

Concerns over biases were address in Chapter Three, where I discussed my lack of any
relationship either personal or professional with Riverbend High School and how potential biases
would be limited in this regard. Furthermore, I entered this project without preconceived ideas
about the benefit or harm of establishing time for peer collaboration in the master schedule.

Several strategies were employed to address reactivity. Both Maxwell (2005) and
Creswell (2007) recommend using triangulation, rich data, and negative case analysis. Creswell
states that in triangulation “researchers make use of multiple and different sources, methods, investigators and theories to provide corroborating evidence” (p. 208). Multiple sources of data included interviews, focus groups, observation, and data analysis. These data sources included perspectives from state and federal reports, accreditation reports, the researcher’s observations, and perspectives from department chairs, classroom teachers and the building principal. Rich data was based on verbatim transcripts and not, as Maxwell fears, what the researcher “felt was significant” (p. 110). The use of InVivo Coding allowed for the participants’ own words and thoughts shape the findings of this research study and helped to preserve the voice of the participant in the study. Creswell states that using rich descriptions allows the reader to “make decisions about transferability” (p. 209). As a result, the reader can determine the extent to which the conclusions of this research study are applicable to other learning environments.

Finally, throughout the analysis of the research data in this study discrepant evidence was considered in shaping the research questions and conclusions. The research study began with the research question “How do teachers and administrators perceive their high school master schedule that prioritizes regularly scheduled professional development and collaboration impacting other components of the master schedule?” During data collection it became apparent that the data did not support this question, largely because participants did not frame their understanding of the schedule in a way that would contribute to a rich exploration of this research question.

The greatest limitation of this study is that it is a single case study and that research was conducted only through one school year. Since this study examined only one school, during one school year, there exist a number potential variables that might have also shaped the conclusions of this study. The results from this study are not easily generalized to other schools because they
are shaped by the specific circumstances of Riverbend High School. Another potential limitation is that the master schedule that was the focus of this study was only in its third year of implementation. The participants’ views may be still influenced by the novelty of change or the desire to successfully implement this scheduling initiative.

**Conclusion**

When exploring the merits of different models of master schedule design quantitative measures offer little credible guidance. With the numerous variables of student population, teacher efficacy and school and community resources, it is difficult to isolate the impact that the master schedule can have on student learning. Given the ineffectiveness of quantitative measures of a master schedule, qualitative approaches offer the only real insights into the value of a comprehensive high school master schedule.

According to this qualitative study, practitioners felt that a comprehensive high school can have a master schedule that prioritizes peer collaboration and regular professional development. The conditions at Riverbend High School are important factors in the perceived success of the master schedule. Each part of the community at Riverbend High School plays a role in creating these largely ideal conditions. The communities’ social conditions and economic resources are favorable: The community is a desirable suburb whose prosperity and property value is directly tied into the continued success of the Riverbend public schools. The district and building leadership appear to have approached all recent initiatives in a collaborative and gradual
manner. The teaching faculty at Riverbend High School is selected for its desire to collaborate and have established a learning culture that propagates this collaborative culture.

This study sought to explore the impact that the master schedule of a school can have on peer collaboration, regular professional development and ultimately student learning. The master schedule of a comprehensive high school is the means of allocating time in the school day. This allocation of time reveals the priorities of a school community. Riverbend explicitly prioritizes peer collaboration, believing it has a positive impact on student learning and thus deserves designated time in the master schedule. While the school’s advisory system is allocated nearly as much time as common planning time, participants viewed it differently. Advisory is something the school has to do to comply with state law, while common planning time is both desired and a required.

Participants saw time in the master schedule for peer collaboration and professional development focused on student learning in two ways. First, respondents viewed their new schedule as benefiting student learning in contrast to the traditional seven-period schedule, where the school started. Respondents constantly contrasted the extended class period, the existence of peer collaboration, and the strengthened school culture of learning as strengths of their master schedule. Secondly, respondents in this study saw the master schedule as benefiting student learning through the use of common planning time. During common planning time teachers and department chairs refined assessments, discussed instructional strategies, pacing/planning and assessing student work.

This study found that for peer collaboration to be successful at Riverbend, time and autonomy were essential. Teachers and department chairs needed the time to build common assessments and develop their instructional strategies, but they also needed autonomy. Giving
teachers autonomy over their peer collaboration served a practical purpose. Teachers and
department chairs were closest to student learning. This proximity gave teachers and department
chairs the best-informed view on the learning needs of their students.

The other major finding of this study is that change in the master schedule necessarily
means sacrificing one priority for another. This basic truth of master scheduling was confirmed
in this study. When time is added for one activity, and the length of the school day remains the
same, then time is removed for another activity. Double blocks for science ended at Riverbend
High School when common planning time became a regular part of the schedule. The school’s
priorities shifted, in this instance, from an emphasis on time on learning to time for collaboration.

The use of common planning time also represents a shift in priorities away from time
dedicated towards individual preparation towards time for collaboration. This was manifested in
the increased workload, but also in the challenge for teachers of balancing ones obligations to
their team and their individual responsibilities. This study shows that if peer collaboration is
made a priority in a master schedule, through common planning time, professional learning
communities or any similar initiative, there will be something lost.

Significance of Study in the Field

This study is significant in the field of how to create regular time for peer collaboration
and professional development in the master schedule. The tremendous variety of extant master
schedule designs makes sense because each school’s master schedule should meet that school’s
individual needs. Riverbend High School’s success must be placed within the right context
before certain aspects of its schedule can be applied to other schools.

Riverbend High School was selected for this study for very specific reasons. First as a
researcher, I based my problem of practice on the limitations of the master schedule at the
comprehensive high school where I teach. Therefore, I sought out a school that had a schedule that was seeking to solve the problem that I had identified. When setting of on my research I had not yet reached a conclusion on whether or not I felt that peer collaboration was a worthy use of time or just merely another educational fad. Upon starting my research at Riverbend, I found a district with, by most measures, ideal learning conditions. The school system is extremely well funded and the school is well maintained and fitted with excellent resources. The student body consisted of few English language learners and few students who receive free and reduced lunch. Overall, the staff turnover, for reasons outside of retirement, is very low and all teachers at Riverbend are highly qualified in their subject areas. Riverbend, as a school community, is a school system that possesses a very high collective self-esteem. If high performing school that prioritized regular peer collaboration and professional development could not succeed under the ideal learning conditions of Riverbend, then what hope would it have for succeeding in most districts?

This context is important for learning from the practices of Riverbend High School. The findings of this study have relevance in the use of Riverbend’s experience with their master schedule as an exemplar. While most schools cannot change the social and economic conditions of their school as easily as they can change their schedule, the findings can have relevance for any school seeking to improve student learning through professional peer collaboration. Thus, if a schedule that was created to ensure regular peer collaboration and professional development could not succeed at Riverbend High School, it is difficult to see how it could succeed at other schools without Riverbend favorable learning conditions.

Several of this study’s findings may be useful for schools that are considering adopting a schedule with regular time for peer collaboration and professional development. The gradual
change of the master schedule at Riverbend has been helpful to the development of the master schedule. Each incarnation of the schedule, from traditional seven-period to its current schedule, came gradually and included feedback from all aspects of the professional community at Riverbend. This gradual process did include dramatic changes, but they were spaced out in a way that included feedback about the strengths and weaknesses of the master schedule.

Another significant finding was the efficacy of nearly full teacher and department autonomy on instructional matters during common planning time. Allowing teachers to have nearly full autonomy over the creation and implementation of the use of the common planning time and their common assessments/common projects is both the right thing to and effective. Allowing teachers and department chairs this autonomy respects the professionalism of the teacher and, more importantly, keeps the needs of students as the central focus of the common planning time.

Next Steps

Further research around the impact of the comprehensive high school master schedule on student learning through increased time for regular peer collaboration and professional development should be conducted. One of the areas that needs further research is exploring how teachers balance being on multiple academic teams. For example, a math teacher might teach an honors geometry course, a remedial algebra course, and a pre-calculus course during the same school year. At Riverbend High School, that teacher would be on three different professional teams simultaneously. Research into how to best prioritize those responsibilities and how to make the most efficient use of teachers allocated time for peer collaboration should be conducted.
This study focused on one type of master schedule, a rotating seven period, six class daily schedule with regular time for advisory and common planning time. Further research should be conducted into attempts to incorporate regular time for peer collaboration into high school master schedules. For example, building common planning time in a school with a semester based block schedule to an A/B block schedule, would present a separate set of challenges.

Finally, further research should be conducted into the construction of a comprehensive high school master schedule at a school that does not have the social and economic advantages of Riverbend. Many schools with significant student populations in need of intervention will have different demands on their master schedule than Riverbend. Research should be conducted to how those demands impact the remainder of the master schedule.

**Final Words**

While a master schedule may not, at first glance, appear to be a defining feature of a school, the master schedule plays a decisive role in shaping the experience of teaching and learning within a school. No individual despite the strength of his will can resist the influence of the structured influence of time during the school day that is created by the master schedule. Unfortunately, no reliable metric exists to measure the efficacy of the master schedule of a comprehensive high school, let alone the impact of peer collaboration on student learning. The variables are just too large. This study sought to explore the perceptions of teachers, department chairs and administrators on the value of a schedule that prioritized regular peer collaboration and professional development. The results indicate that given the right conditions, student learning does benefit from regular time allocated towards peer collaboration and professional development.
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Appendix A

Permission Letter Superintendent of Schools/Building Principal

October (insert date) 2011

Dear [Superintendent of Schools] and [Building Principal],

My name is Colin Everett. I am a social studies teacher at XXXXX High School and am currently working on my doctoral dissertation at Northeastern University. I am conducting a study regarding time allocated for collaboration and professional development in a high school master schedule. This study requires data to be collected at school, and I am requesting permission to elicit participation from teachers and conduct the study at school during the school day.

In this research study, I plan to investigate the perceptions that practitioners have of their high school master schedule. I am interested in how professional balance their individual professional obligations and their need to collaborate with their peers.

It is my hope that this study will help better understand the role of peer collaboration and regular professional development within a high school master schedule. Given the increasing demands on the high school master schedule my research may provide a better understand on how to design and implement an effective high school master schedule.

Should you have any questions regarding this study, please contact me directly [school phone number] (---000-0000), (000) 000—0000 (home) or the chairperson of my committee, Dr. Christopher Unger at Northeastern University, (000) 000=0000. Thank you in advance for your time.

Sincerely,

Colin Everett
High School Social Studies Teacher
High School
Doctoral Candidate, College of Professional Studies
Northeastern University, Boston
Appendix B

Signed Informed Consent Document

Northeastern University, College of Professional Studies

Investigator Name: Colin Everett

Title of Project: Changing a High School’s Master Schedule to Foster Teacher Collaboration with a focus on Instruction: A Case Study

Informed Consent to Participate in a Research Study
I am inviting you to take part in a research study. This form will tell you about the study, but the researcher will explain it to you first. You may ask this person any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?
You have been asked to participate in this study because you are a teacher or administrator at a public high school.

Why is this research study being done?
The purpose of this research is explore the role that peer collaboration and regular professional development have in the design of a comprehensive high school master schedule.

What will I be asked to do?
The researcher will be looking for you to participate in some of the following ways.
  - Participate in an interview with that will be audio taped
  - Allow the researcher to observe your time dedicated to peer collaboration and regular professional development
  - Participate in a focus group that will be audio taped
  - Complete an electronic survey

Where will this take place and how much time will it take?
Interviews will take place at a school during a convenient time and place for the participant and in a private office. Observations will take place during the time that is regularly scheduled for peer collaboration and/or professional development. Interviews will not exceed a half-hour each. The focus group will not exceed one hour. The survey should take approximately 15 minutes to complete.

Will there be any risk or discomfort to me?
There are no foreseeable risks involved in take part in this study. All responses will be kept confidential and the research will be destroyed after the project is completed.
Will I benefit by being in this research?
There will be no direct benefit to you for taking part in the study. However, the information learned from this study may help schools better understand the master scheduling process.

Who will see the information about me?
Your part in the study will be held in a confidential manner. Only the researcher of this study will see the information about you. No reports or publications will be use information that can identify you in any way. All audio tapes, pre-observation forms, and learning journals will be destroyed after analysis. All email links will be broken and documentation obtained from those links will be destroyed.

If I do not want to take part in the study, what choices do I have?
You are not required to participate in this study. Stopping your participation will not affect your professional standing. At any time during the study, you may refuse to answer questions or complete form, as well as end your participation. If you chose not to participate, do not sign and ignore this form.

Who can I contact if I have questions or problems?
Colin Everett
High School
Work # (  )
Email  
Chris Unger, Ed.D
Principal Investigator –Overseeing Study
Northeastern University, Boston
Campus #
Email:

Who can I contact about my rights as a participant?
If you have any questions about your rights as a participant, you may contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University Boston, MA 02115 tel. 617-373-7570, email: irb@neu.edu. You may call anonymously if you wish.

Will I be paid for my participation?
There is no compensation for participation in this study.

Will it cost me anything to participate?
There is not cost to participate in this study.
I have read, understood and had the opportunity to ask questions regarding this consent form. I fully understand the nature and character of my involvement in this research program as a participant and the potential risks. Should I be selected, I agree to participate in this study on a voluntary basis.

_________________________________
Research Participant (Printed Name)

___________________________________
Research Participant (Signature)       Date
Appendix C

Interview Questions for Master Scheduler(s)

1) How long have you worked on creating the master schedule?
2) Please describe the process you use to create the master schedule.
3) What are the benefits of your master schedule?
   a. Can you please give me some examples of that?
4) What are the weaknesses of your master schedule?
   a. Can you please give me some examples of that?
5) Please describe the challenges you face in balancing the master schedule?
   a. Can you please give me some examples of that?
6) What computer program do you use to create the master schedule?
7) Please describe the strengths and weaknesses of this program?
   a. Can you please give me some examples of that?
Appendix D

Interview Questions for Administrators and teachers.

1) How long have you worked in this school? What roles have you had during your tenure?
2) How have you seen the schedule change in your tenure?
3) Tell me the story of how your current schedule came about.
4) What are the benefits of your master schedule?
   a. Can you please give me some examples of that?
5) What are the weaknesses of your master schedule?
   a. Can you please give me some examples of that?
6) What impact does the schedule have on instruction?
   a. Can you please give me some examples of that?
Appendix E

Focus Group Questions

1. Please explain your Master Schedule to me.
2. Please tell me the story of how it came about?
3. What was the purpose, and the outcome of that process?
4. What are benefits over old master schedule?
   a. Can you please give me some examples of that?
5. How it benefits teacher collaboration?
   a. Can you please give me some examples of that?
6. How does it benefit professional development?
   a. Can you please give me some examples of that?
7. How does it benefit student learning?
   a. Can you please give me some examples of that?
8. How could your school’s master schedule be improved?
   a. Can you please give me some examples of that?
Observation Form

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<th>Date:</th>
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<tr>
<td>Time at start of observation:</td>
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<td>Time at end of observation:</td>
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<tr>
<td>Location:</td>
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<td>Participants:</td>
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<th>Descriptions</th>
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Appendix G

Electronic Survey (email)

Dear Teachers,

I would like you to participate in a web-based online survey. The survey is part of a research study I am conducting whose purpose is to understand the role of peer collaboration and regular professional development in a comprehensive high school’s master schedule. The survey should take you about 15 minutes to complete.

I have asked you to take part in this study because you are a group of individuals who will provide particularly meaningful perspectives. Your decision to participate in this study is completely voluntary. You do not have to take part, and you can refuse to answer any question. Even if you begin the online web-based survey, you can stop at any time.

Your decision to take part in this study is completely confidential. The research report will not identify you as an individual.

If you have any questions about this study, please feel free to contact me at 508-758-3745 or everett.c@neu.edu

If you have any questions regarding your rights as a research participant, please contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: 617-373-4588, Email: irb@neu.edu. You may call anonymously if you wish.

To find out more about the study and choose whether you would like to participate, please feel free to click on the link below. (insert link)

Thank you. I truly appreciate your time in this manner.

Colin Everett
Doctoral Candidate
Northeastern University
Appendix H

Dear Teachers,

I would like you to participate in a focus group. The Focus Group is part of a research study I am conducting whose purpose is to understand the role of peer collaboration and regular professional development in a comprehensive high school’s master schedule. The Focus Group should take about 30 minutes to complete.

I have asked you to take part in this study because you are a group of individuals who will provide particularly meaningful perspectives. Your decision to participate in this Focus Group is completely voluntary. You do not have to take part, and you can refuse to answer any question. Even if you begin the Focus Group, you can stop and leave at any time.

Your decision to take part in this study is completely confidential. The research report will not identify you as an individual.

If you have any questions about this study, please feel free to contact me at 508-758-3745 or everett.c@neu.edu

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To find out more about the study and choose whether you would like to participate, please hit reply to this email or email me directly at (everett.c@neu.edu).

Thank you. I truly appreciate your time in this manner.

Colin Everett
Doctoral Candidate
Northeastern University
Appendix I

Interview Request (email)

Dear Teachers/Administrator/Technology Coordinator,

I would like you to participate in an interview. This interview is part of a research study I am conducting whose purpose is to understand the role of peer collaboration and regular professional development in a comprehensive high school’s master schedule. The interview should take no more than 30 minutes to complete.

I have asked you to take part in this study because you are an individuals who will provide particularly meaningful perspectives. Your decision to participate in this study is completely voluntary. You do not have to take part, and you can refuse to answer any question. Even if you begin the interview, you can stop at any time.

Your decision to take part in this study is completely confidential. The research report will not identify you as an individual.

If you have any questions about this study, please feel free to contact me at 508-758-3745 or everett.c@neu.edu

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To find out more about the study and choose whether you would like to participate, please hit reply to this email or email me directly at (everett.c@neu.edu).

Thank you. I truly appreciate your time in this manner.

Colin Everett
Doctoral Candidate
Northeastern University
Appendix J

Electronic Survey

I am inviting you to take part in a research study. This form will tell you about the study. You do not have to participate if you do not want to. If you decide to participate, please click on the link below and you begin the survey.

Why am I being asked to take part in this research study?
You have been asked to participate in this study because you are a teacher or administrator at a public high school.

Why is this research study being done?
The purpose of this research is explore the role that peer collaboration and regular professional development have in the design of a comprehensive high school master schedule.

What will I be asked to do?
The researcher will be looking for you to participate in an electronic survey.

Where will this take place and how much time will it take?
The survey should take approximately 15 minutes to complete.

Will there be any risk or discomfort to me?
There are no foreseeable risks involved in take part in this study. All responses will be kept confidential and the research will be destroyed after the project is completed.

Will I benefit by being in this research?
There will be no direct benefit to you for taking part in the study. However, the information learned from this study may help schools better understand the master scheduling process.

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You are not required to participate in this study. Stopping your participation will not affect your professional standing. At any time during the study, you may refuse to answer questions or complete form, as well as end your participation.

Who can I contact if I have questions or problems?
Colin Everett
High School
Chris Unger, Ed.D
Principal Investigator –Overseeing Study
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Will I be paid for my participation?
There is no compensation for participation in this study.

Will it cost me anything to participate?
There is not cost to participate in this study.

I have read, understood and had the opportunity to ask questions regarding this consent form. I fully understand the nature and character of my involvement in this research program as a participant and the potential risks.

To participate in the survey please click here (insert link).

1) What is your position at this school,
   a. Classroom teacher
   b. Non-classroom teacher professional (guidance counselor etc…)
   c. Administrator
   d. Paraprofessional
   e. Other, please describe.

2) How long have you been working at this school,
   a. 0-2 years
   b. 2-5 years
   c. 5-10 years
   d. More than ten years

<table>
<thead>
<tr>
<th>The master schedule at my school allows me adequate time to: Prepare for my classes at school.</th>
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<td>Strongly Agree</td>
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<tr>
<td>The master schedule at my school allows me adequate time to:</td>
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<td>Correct student work during the school day.</td>
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<tr>
<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Collaborate with my peers to improve instruction.</td>
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<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Work with students who are struggling academically.</td>
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<tr>
<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Collaborate with my peers to attend to the needs of students with learning disabilities.</td>
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<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Contact and/or meet with parents or guardians.</td>
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<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Maintain an online gradebook.</td>
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<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Maintain a classroom website.</td>
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<tr>
<td>The master schedule at my school allows me adequate time to:</td>
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<tr>
<td>Participate in regular school or district professional development.</td>
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<td>The master schedule at my school allows me adequate time to:</td>
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<td>Write student recommendations.</td>
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<tr>
<td>The master schedule at my school allows me adequate time to:</td>
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<td>Attend to routine paperwork.</td>
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<td>The master schedule at my school:</td>
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<tr>
<td>Prioritizes academics over other aspects of the school.</td>
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<td>The master schedule at my school:</td>
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<td>Allows for a variety of approaches within a given lesson.</td>
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<td>The master schedule at my school:</td>
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The master schedule at my school allows:
For opportunities for deep explorations into the curriculum.

The master schedule at my school:
Meets the learning needs of my students.

The master schedule is currently configured in a way that effectively supports student learning.

Please add your comments in the box below.

What, if any, are the strengths of your school’s master schedule (please describe)?

What, if any, are the areas where your school’s master schedule can improve (please describe)?
In what ways do you think that the current schedule of your school effectively supports and/or does not support student learning?

Thank you very much for your participation. This concludes the first phase of my data collection. In the next week or two I will ask if those participating in the survey would not mind participating in a confidential Focus Group as well. This is completely voluntary. Again, I thank you very much for your participation.

Colin Everett

Doctoral Candidate

Northeastern University