School Schedules And How They Impact Student Perceptions Of Stress

David C. Flocco
Seton Hall University

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SCHOOL SCHEDULES AND HOW THEY IMPACT STUDENT PERCEPTIONS OF STRESS

By
David C. Flacco

Dissertation Committee
Charles Achilles, Ed.D., Mentor
Anthony Colella, Ph.D.
Peter Greer, Ed.D.
Mark Boyce, Ph.D.

Submitted In Partial Fulfilment
Of the Requirements for Degree
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2004
Dedication

Mom and Dad
For teaching me the importance of education
I have to begin my list of acknowledgements by thanking God. I am so blessed by Him—from my family, to my career, to completing this project I thank God.

My mentor, Chuck Achiles, has been a source of support, guidance, and encouragement for me. His timely feedback on drafts and ideas was always highly professional, respectful, and valuable. I am forever in his debt.

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Imagine you are 16 years old. You wake up at 5:30 a.m., take a quick shower to shake out the cobwebs, get dressed, eat breakfast, and sit down to complete the homework you could not finish the night before. Your school day begins at 8:50 a.m. with Advanced Placement (AP) United States History, followed by AP Chemistry. AP Calculus, 19th Century British Literature, and AP French, not to mention the myriad electives you must take—such as Physical Education, health, and art. Your day does not end when classes conclude at 3:00 p.m. After school, you grab 15 minutes with a teacher for extra help, head off to practice or a game, arrive home around 6:00 p.m. (at the earliest), eat dinner, get to your violin lesson, and sit down to start your homework at 8:00 p.m. By midnight, you have to go to sleep because you cannot keep your eyes open. Your homework is not finished, but you have another solid hour of study time tomorrow morning before you leave for school. Before you know it, the alarm sounds at 5:30 a.m., and it starts all over again. Are you tired just thinking about it?

This researcher contends that the above scenario is not far from the norm for many college-preparatory high school students in this country. The thought of putting in 15-hour days, as a high school student or an adult, is a daunting one. Some adults adhere to such a schedule out of necessity—to keep a roof over their heads and food on the table. Others do so because they have yet to master the skill of time management, and thus their personal and professional lives are "out of balance." Still others do it at the
urging of a spouse or an employer. None of these situations applies to your typical high schooler.

So, why do so many of today's traditional college-prep students lead overscheduled lives? Hardy (2003) interviewed some of his friends in a few local high schools and found their stories to be frightening. Students pass up sleep, enroll in an inordinate number of honors and AP courses, and overschedule themselves to gain an advantage over the hundreds of thousands of other high school students. The school nurse at Acalanes High School in Lafayette, CA stated that

Students respond to the pressure of gaining admission to college by loading up on Advanced Placement courses and a dizzying array of extracurricular activities. Sleep becomes the one part of their schedule that becomes expendable. I don't know how many kids will sit in my office and say 'I don't know what I'm going to do when I get out of high school.' And this kid will be 15! (p. 18)

In addition, Lynne Harr, a counselor at Acalanes, described a meeting with a senior who, by all accounts, has above average credentials for college, including a 3.2 grade point average. "She is absolutely terrified," Harr said, "and probably rightly so -- that she won't get into anything." Jeff Maher, 18, a senior at Acalanes, talks about high achievers breaking into tears when they get less than an A in a course. But unlike many high schools, where grade inflation is rampant, it is not easy to be perfect at Acalanes, and the competition puts incredible pressure on students to stand out. "That kind of rigor is why Ivy League admission officers like the school," Maher said. "They know an 'A' from Acalanes means something. Harvard takes one or two students from certain public
high school. So what they’re doing early on is pitting kids against each other.” Maher recently scored a perfect 800 in the SAT II writing test; his friend got a 790 and was pondering studying for it all over again. (p. 19)

This pressure to achieve at the high school level is producing a generation of college students that are driven by perfectionism. This problem has become so rampant that some college administrators are leading campaigns against the kind of fastidiousness that drives students to work and rework papers until they are ‘A’-quality. This need for perfection results in college campuses filled with students who suffer from stress-related conditions and serious mental health issues. Undergraduate administrators across the country are so concerned that they have begun to take major steps to address this issue.

Rimer (2004) reported that

Private and public colleges alike have begun offering a wide range of services and activities intended to help students negotiate what used to be considered the ordinary rites of passage: homesickness, sophomore existential angst, romantic relationships. There are now free massages and dogs to cuddle in exam seasons, biofeedback workshops, and therapists to help students work through their first C. (p. A1)

Kevin Kruger, the associate executive director of the National Association of Student Personnel Administrators, as cited in Rimer (2004) stated, “This movement is an indication of colleges trying to be more proactive rather than waiting for students to flunk out, have a breakdown, or whatever the outcome is going to be” (p. A21). As colleges
make these programs more available, students are utilizing them. At some schools, counseling referrals are up almost 25%.

Research suggests that this desire and need to be "perfect" begins at an early age. In their book *The Overscheduled Child: Avoiding the Hyper-Parenting Trap*, Rosenfeld and Wise (2000) spoke of the disservice we do our children as parents and educators when we force them into too many activities. Despite potential athletic excellence, for example, a 14-year-old whose normal day runs 16 hours due to school, after school activities, practice, and homework will not have the opportunity to experience the joys of adolescence. According to Rosenfeld and Wise

We underestimate the toll this fast-track lifestyle takes on our children, even the ones who really might have a shot at the big-time. If a twelve year-old gymnast has Olympic potential, wouldn't it really benefit her to move a thousand miles away to live with some master coach and see her family only on occasional weekends? Is a schedule of sixteen hours a week of skating lessons good for any adolescent? These frenetic schedules and intense and competitive activities may indeed help our children hone their athletic abilities, but will they help them grow into happy, well-adjusted adults who will have the skills they need to build satisfying lives and families of their own? (p. xxvi)

Recent movements in this country have attempted to address this notion of overscheduling our children. Peterson (2002) stated that an "increasing number of grass-roots groups are calling for time out. No more scheduling kids from breakfast to bedtime" (p. 7D). Their goal is to slow down the pace of life for our kids with the hope of creating more family time. Slowing down the pace of life will not only increase the
potential of having more family time, it will also undoubtedly lead to a less stressful life for our kids. Because so much of a child’s day is spent in school and because of the dangers associated with overly stressed students, administrators need to do whatever they can to create a school atmosphere that mitigates stress.

Statement of the Problem

The empirical evidence suggests that our kids lead an overscheduled and frenetic life, and this pace of life produces stress in students. Students who experience stress are more likely to become vulnerable to other potential dangers such as depression and suicide. Therefore, the normative condition indicates that stress should be mitigated among high school students.

Administrators of independent schools are faced with the challenge of creating a balance between a rigorous college-preparatory environment and an enjoyable high school experience. Unfortunately, the priorities in most independent schools are oftentimes out of balance—as teachers and administrators seek to both prepare students for college study and position them best for the college admissions process. Students feel the pressure from their parents, the school culture, or their inner selves to take the most rigorous course in a discipline, rather than the course in which they might be more interested, because it will serve them better in the college admissions process. In addition to the co-curricular activities and community service hours in which these students engage, some students in some schools do 4 or 5 hours of homework a night! Those students save their larger assignments for the weekend—when they have all day to write a paper or prepare a monologue. This type of workload may be the norm for many
college students but college students have more time built into their day to accomplish such assignments and they are more equipped to handle the heavy workload since they are more mature and better educated. The question remains, “Should high school be more difficult than college?” Should our alumni come back to us after their first semester and say, “Wow, I never thought college would be so easy?” Some school leaders would respond, “Yes, high school should be harder. That’s why parents pay $20,000 per year to send their kids to our school. We provide them with the necessary skills to achieve success in college.”

Others would argue that we do our students a disservice when they cannot enjoy the social aspects of high school or spend quality time with family. Instead of attending a family picnic on a Sunday afternoon, they are at home completing a physics lab. Rather than attending a lecture on a topic of interest or simply having unstructured time to be a teenager, they must stay home and complete 100 pages of reading in Jane Eyre.

Consequently, students, for the most part, experience an inordinate amount of stress for people their age.

While data suggest that student stress is a major problem, it only scratches the surface of a much deeper problem – how time is spent. Students today are overscheduled and overburdened and as a result, they lead fast-paced lives. Students need to take time to slow down, reflect, relax, and just be kids – and we, as school administrators, have a responsibility to provide them with that time.

In response, this project addresses the notion of time, time allocation and how, if at all, time impacts upon student stress. Several factors contribute to adolescent stress and it is beyond the scope of this paper to attempt to consider all of the common factors.
Therefore, this study is delimited to the allocation of time in school and how it impacts student stress. In this study, the researcher a) compared a traditional seven-period, 50-minute schedule and a modified block schedule; b) measured the levels of student stress within these different schools; c) determined the relationship between the type of schedule in which students participate and the level of stress they experience; and d) presented conclusions for school leaders regarding scheduling that allows college preparatory students to maximize their potential while minimizing undue levels of stress.

**Purpose of the Study**

The purpose of this study was to investigate and compare the academic schedules of two independent day schools and how each may influence student perceptions of stress. One school used a traditional seven-period, 50-minute schedule and the other used a modified block schedule. With factors such as academic rigor, geographic location, and student age matched as closely as possible within the parameters of informed consent and voluntary participation, the researcher compared the influence of two different types of schedules. The goal, using both qualitative and quantitative methods, was to close a gap in the research between the empirical problems of overscheduled and overly stressed students and the normative condition of mitigating that stress. The researcher attempted to answer the following questions in relation to each school in the study:

1. To what extent do high school students’ perceived demands of academic life create perceptions of stress?
2. To what extent do high school students’ peer interactions and/or their classmates’ feelings toward them create perceptions of stress?
3. To what extent does the school schedule predict emotional manifestations of high school students' perceptions of stress?

4. To what extent does the school schedule predict physiological manifestations of high school students' perceptions of stress?

5. To what extent do teachers' attitudes towards high school students create perceptions of student stress?

Significance of the Study

The literature on stress as it relates to academic schedules is incomplete; however, researchers (e.g., Helms & Gable, 1989) have studied student stress and the dangers associated with it, and have made suggestions for coping. Reisberg (2000) found that student stress, especially among females, is on the rise. In addition, the research as it relates to stress and teenage depression, substance abuse, and suicide is exhaustive. Kintzi (1994), Clarrer & Lascen (1994), and Diekstra & Garnefaki (1995) found that students who were depressed were more likely to consider suicide and to abuse drugs. Brown and Shaw (1997) found a positive correlation between depression and aggression among teenagers and Kirkpatrick-Smith (1992) found that depression and substance abuse are significant predictors of suicide.

In addition to the research available on the dangers of student stress, there was also research available on school schedules. Canady and Retig (1998) explored the block schedule and theorized about its effects on student achievement. Some research (i.e., Canady & Retig, 1995; Matarazzo, 1999) has suggested that the 4x4 block schedule contributes to student learning and achievement, while other research (e.g., Lindsay,
2002) shows that "block scheduling does not provide an academic benefit and can even seriously harm academic achievement in school" (p. 4).

Concerning behavioral and emotional factors, research indicates that schools operating under a block schedule experience a more positive climate (Schoenestein, 1995). Other research suggests that longer classes lead to fewer distractions, fewer disciplinary infractions, a cleaner school environment and thus, an improved climate (Canady & Rettig, 1995). However, research on the topic of block scheduling and how it relates to stress is incomplete. This study attempts to close that gap.

This research can be valuable to school leaders in several ways. With the prospect of stress manifesting itself in higher rates of depression and suicide in teenagers, discovering ways to reduce student stress should be a priority for school administrators. Findings that support one form of scheduling over the other can provide administrators with insight into how they might innovatively organize their school day in order to reduce the amount of stress students' experience. Lastly, the results of this research can contribute to the development of a useful schedule model for high school administrators that would help to mitigate the stress among their students.

**Delimitations and Limitations**

This study was delimited to two independent day schools and involved students in the 10th and 11th grades only. One limitation is the ability to measure stress quantitatively among these students. Although the researcher used a survey instrument to assess perceptions of stress, stress is a perceived emotion that varies under similar circumstances for different people. Therefore, the researcher attempted to enrich the
research by incorporating both quantitative and qualitative techniques. Despite recent studies (Reese, 2004) to suggest that teacher stress can lead to student stress, this study did not explore the influence that these school schedules may have had on faculty or administrators and it did not include students in the public schools. The researcher was concerned only with perceptions of student stress in school and how these perceptions related to students’ academic lives. The study did not take into account the myriad of outside stressors such as family and friends, nor did it differentiate between distress (the stress that is disagreeable with the body) and eustress (the stress that can be positive for the body). Lastly, while teachers in a block schedule may use teaching methods that differ from those used by teachers following a traditional schedule, this study did not take teaching methods into consideration.

Definition of Terms

1. Average Achieving Students: Students with a grade-point average (GPA) between 2.51 and 3.49 out of 4.00.

2. College Preparatory Students – Students in a high school with a graduation rate over 95% and with the same percentage matriculating at a four-year college. The academic program’s primary purpose is to prepare students for the academic rigor of college or university life.

3. 4 x 4 block – A schedule that divides the school day into four 90-minute blocks. Students complete a “year-long” course, such as Algebra I, in 18 weeks as opposed to the traditional 36 weeks (Schoenste, 1995).

4. High Achieving Students: Students with a GPA of 3.50/4.0 or higher.
5. Low Achieving Students: Students with a GPA of 2.50/4.0 or lower.

6. Modified Block Schedule – A form of block scheduling where classes meet for longer than 50 minutes (e.g., 70 minutes) per period, every other day throughout the entire year.

7. School Schedules – The daily class schedule that is incorporated in a school. Two different types of schedules were used in this study.

8. Stress – Selye (1956) define stress in two ways: (a) “a state manifested by a syndrome,” (p. 55) and (b) “the common denominator of all adaptive reactions in the body” (p. 54). Stress is the physiological reaction to external pressures.

9. Traditional 50-minute – A schedule in which the classes, including lunch, are divided into 50-minute blocks that rotate within a 6-day cycle. Classes are completed in the traditional 36-week school year. The traditional schedule in this study included 7 periods per day.

10. Unstructured time – Time that is not dictated or controlled by outside influences (e.g., watching T.V., playing with friends)

Organization of the Study

The research on the impact of longer class periods on student achievement, student satisfaction, and school climate is exhaustive and mixed. In this study, the researcher investigated the relationship between school schedules and perceived student stress. The researcher also recommended schedule elements that may alleviate student stress, and the researcher tried to close a gap in the research on the relationship between school schedules and student stress.
Chapter 1 presented the purpose of the study, background information, statement of the problem, significance of the study, research questions, delimitations, and definitions of terms. Chapter 2 presents a review of the related research and literature within the following four constructs: (a) overscheduling, (b) stress, (c) time, and (d) clock scheduling. Chapter 3 presents the methodology of the study, divided into the following sections: (a) introduction, (b) design, (c) instrumentation, (d) data analysis (e) data collection, and (f) summary. Chapter 4 presents an analysis of the descriptive and quantitative data through t tests and regression analysis as well as qualitative data. Chapter 5 presents the summary, findings, conclusions, discussion, and recommendations for further practice and further study.
Chapter 2
Review of Related Research and Literature

Introduction

The purpose of this study was to investigate and compare the academic schedules of two independent day schools and determine to what extent those schedules influenced student perceptions of stress. Chapter 2 presents the review of research and literature on four related areas, and develops a thesis for the study:

1. The overscheduling of our high school students and how that overscheduling may lead to higher amounts of perceived or real student stress.
2. The dangers of stress and how it can contribute to detrimental conditions, such as depression, and such destructive behaviors as substance abuse and suicide.
3. The relationship between school schedules and other structured time (such as extracurricular activities) and the importance of time on the school day.
4. A brief review of scheduling in America's high schools, particularly the recent attention given to block scheduling and other alternatives to traditional schedules.
5. A theoretical framework and thesis for the present study.

The research indicates that student stress is on the rise and that this stress can lead to teenage depression, substance abuse, and suicide. In addition, the research on block scheduling does not favor one type of schedule over the other with regard to student achievement, teacher satisfaction, and teaching methodology. It is in the backdrop of this research that this study takes place.
Scheduling and Overscheduling

Much of the blame for overscheduling of school-age youth is being placed on parents, and particularly those parents whose children attend independent schools. These parents wish to create a schedule for their child that will produce a résumé that deems their son or daughter worthy of admission to an Ivy League institution. This pressure is unhealthy for some high school students. Rosenfeld and Wise (2000) spoke of the "out-of-whack" priorities that some parents have when it comes to raising their kids. They cite extreme examples to demonstrate their point.

The message the kids get is that they cannot ever, for a moment, take comfort and satisfaction in being who they are. They should take inspiration from the deep pain of inadequacy. They should learn to use every second of their day productively. They should learn that life is tough, and they should internalize that particular lesson as early as possible. They should know that nothing comes from nothing, even love and respect. That anything and everything takes hard work, and no one loves anyone just for who they are. That the aim is accomplishment, character comes in a rather distant second. The goal is admiration, not affection and community. As the insightful student noted, the kids had better be ridiculously good or they will never amount to anything at all. Extreme? Of course it is. (p. 162)

They described the effects of this pressure on students these days by citing the following example from a talented student attending a southern college:
One of the major parental concerns these days seems to involve the enormous pressure placed on adolescents (I'm thinking particularly of high-school-aged students) in both the social and academic realms. Obviously peer pressure speaks for itself. However, I myself have noticed the ever-growing demands on students to strive to get into "THE" college. The résumés that kids these days need to have to get into a good school floors me—presidents of several clubs, valdictorians (etc.) of their classes, leadership conferences, community involvement...the list goes on. Undoubtedly, this must place an enormous strain on parents who want their children to succeed, as well as on the students, who are forced to deal with these pressures in the midst of a time of psychological struggle. Does it force an adolescent to grow up too early, or does it prevent him or her from dealing with the pressing issues of that stage of development, leading to difficulties later on? (pp.155:156)

Many articles have been written in recent years about high school stress and the effects of stress on school culture. Mariantes (1999) spoke of the "Mozart Effect" that has parents scrambling to expand their classical CD selections to start infants off on the right intellectual foot. That mentality continues through the primary and middle grades as parents prepare their children to do whatever is necessary to develop a high school résumé that will impress college admissions counselors. The competition to get into a "good college" has changed the psyche of the American youth. No longer are kids satisfied with mowing lawns during the summer to earn some extra cash. High-powered internships that impress college admissions committees and the neighbors down the block...
are increasingly becoming part of the adolescent high school experience. Increased pressure to enroll in advanced courses is an unhealthy epidemic among America’s high schoolers, causing some to take classes that are too difficult for them. They then spend an inordinate amount of time studying to earn a “C”, which adds further stress. This need to excel is beginning earlier and earlier, suggested Marlantes (1999):

It’s as if the heat generated by a global economy — not to mention growing competition to get into good colleges — has had a trickle-down effect. No longer is it good enough by junior or senior year to have achieved top grades, be captain of a varsity team, volunteer at a soup kitchen, and play sax in the band. Those in search of a bright future are getting a new message: the need to excel across the board starts in the freshman year. (p. 2)

Marlantes also refers to books that give our students, according to Marlantes, poor advice by discussing high GPA and strength of schedule in the freshman year. Baer, as cited in Marlantes (1999) said

Each and every high school class affects your GPA, and colleges care about your GPA...take ceramics if you want, but be aware that your top-choice university probably places more importance on your understanding of physics than your ability to work a kiln. (p. 2)

Marlantes (1999) presented the other side of the argument in expressing the views of some prominent child psychologists who suggest that the pressure on high school students to achieve early in their high school careers is creating stress for them. As cited
in Marlaces, Hersk, who spent several years documenting the lives of adolescents, wrote
that, "there is a direct relationship between this increased pressure and some of the
tremendous acting out social behavior we're witnessing" (p. 3). This pressure is not
healthy. Many students are too stressed, and something has to be done.

This pressure is applied not only during the school year, but also throughout the
summer months. Some parents are now enrolling their children in summer sleep-away
camps that place an emphasis on academics, particularly Scholastic Aptitude Test (SAT)
prep. Imagine that. The old bastion of juvenile fun, summer camp, that was once a place
where kids could go to be, well... kids, is no longer! At some camps children are now
trading campfire songs and "kick-the-can" for vocabulary lists and test-taking strategies.
Gubnerick (2003) reported a rise in the number of academic offerings at summer sleep-
away camps. Under pressure from their parents, kids are enrolling in these courses so as
not to let a summer go by without academics. As an example, Gubnerick described two
such camps:

At SuperCamp, based in Oceanside, CA, kids will spend 66% of their time on
academics, including something called "quantum learning" (translation: note-
taking and organization). Maine Teen Camp has not one but two lake and offers
campers hiking trips in the White Mountains and rafting trips down the Kennebec
River. Participants in the new College Board program, however, will spend most
of their three weeks at camp taking SAT drills and working on their college
essays – as well as hitting college campuses for visits. Parents will even be sent
their kids practice tests so they can track any progress. "The important thing is for
kids to be ready when the tests hit." (pg. W7)
In an article about the effects of the fast-paced life our students lead, Hardy (2003) explained that such an existence for these kids is unhealthy. He cited mental health research and conversations with school administrators and students in an average American high school as evidence that we are, in fact, placing an inordinate amount of pressure on students. While there is little research available on stress levels in K-12 education, Hardy used two recent studies to show that the "percentage of students being treated for depression at Kansas State University had doubled between 1989-2001" (p. 18). In short, Hardy argued that youth are experiencing undue amounts of pressure – be it self-imposed or from parents and colleges – that, ultimately, are unhealthy and dangerous. He did not distinguish between the high achievers and low achievers, proposing that stress affects all students.

Stress and pressure – both external and self-imposed – affect kids all along the achievement spectrum. For high achieving students, it’s harder than ever to get into a top college or a state’s flagship university. In part that’s because of the sheer number of students competing for a limited number of spots. At Berkeley, for example, where admissions officers refer to this generation as “Tidal Wave II,” it’s almost twice as hard to gain admission as it was 10 years ago...Low achieving students, especially those from poorer areas, face a different challenge – simply staying in school. And being held back a grade raises the stakes. Numerous studies show that grade retention doesn’t help students’ academic success and may increase dropout rates. (pp. 19-20)
The related literature and research on the oversheduling of today's youth indicates that many independent school students feel an undue amount of pressure to succeed. This pressure is coming from myriad places - society, school, parents, etc. As if the school year alone did not create enough stress, the time that was once used to relax and reenergize for the upcoming school year is now filled with academic camps. Instead of spending summer evenings sitting around the campfire, our kids are now burning the midnight oil preparing college essays. This need to succeed and hopefully gain admission to the "best" college is producing a generation of overly stressed, anxious teenagers. When feelings of anxiety and stress get the best of them, there are a variety of ways that students can respond.

**Stress**

In the seminal book on stress, *The Stress of Life*, Selye (1956) investigated important aspects of stress, from identification of stress to dissection of the diseases associated with stress, and the implications and applications of this bodily response to outside forces. Stress is a perceived emotion - as evidenced by the fact that preparing for the holidays, for some, produces an undue amount of stress and for others, creates a time of joy and happiness - a time to share with family and friends. Each person adapts to stress in his/her own way. As Selye explained:

No one can live without experiencing some degree of stress all the time. You may think that only serious disease or intensive physical or mental injury can cause stress. This is false. Crossing a busy intersection, exposure to a draft, or even sheer joy are enough to activate the body's stress-mechanism to some extent.
Stress is not necessarily bad for you; it is also the spice of life, for any emotion, any activity that causes stress. But, of course, your system must be prepared to take it. The same stress which makes people sick (sic) may be an invigorating experience for another. (p. vii)

Selye made connections between the inability to adapt to stress and diseases of the kidney, the heart, and blood vessels. In addition, uncontrolled stress can cause inflammatory diseases, nervous and mental diseases, sexual dysfunction, difficulty with digestion, metabolic diseases, as well as cancer and other diseases of resistance. These diseases were the potential results of uncontrolled stress in the 1950s and are still the risks today. However, the greatest concern for the researcher, and the reason for this study, is the growing body of more recent research that suggests that stress may lead to teenage substance abuse, depression and other mental illnesses, and ultimately suicide.

For example, studies (Dawes et al. 2000; Kosten et al. 1986; Sinha et al. 2000) have reported that individuals exposed to stress are more likely to abuse alcohol and other drugs or experience a drug relapse. In an analysis of studies regarding factors that can lead to continued drug use among opiate addicts, Brewer, Catalano, Haggerty, Gainey, and Fleming (1998) found that high stress predicted continued drug use, while McEwan & Sapolsky (1995) found that chronic stress can impair memory and may impair cognitive function. Additional research (Kreek, et al. 1998; Piazza & LeMoal, 1996, 1998) found that there is an overlap between neurocircuits in the brain that respond to drugs and those that respond to stress.
In a seminal book on the effects of a brain addicted to drugs, Dupont (1997) linked stress and anxiety disorders to substance abuse. In discussing the difference between addiction to medicines and addiction to stimulants and narcotics, he explained that self-medication means the use of intoxicating drugs (such as alcohol, cocaine, heroin) to treat unpleasant feelings (such as severe stress and anxiety, depression, or pain)...Drug abusers do not abuse any medicine that does not produce reward or reinforcement...For example, people with panic disorder do not abuse antidepressants even though they block panic attacks. Drug abusers do, however, abuse stimulants and narcotics that make them feel better (p. 116).

In other words, if a child is feeling overstressed and overscheduled and that feeling goes unnoticed, and the child has limited stress-coping mechanisms, then his brain may tell him to look for something to make him feel better — something that will make that “out-of-control” feeling and the stress go away.

Williams (2002), in The National Institute of Drug Use Association (NIDA) surveyed New York City residents in the wake of the 9/11 terrorist attacks and discovered high levels of posttraumatic stress disorder (PTSD), which led to a documented increase in reports of depression and substance abuse. The report quantified the relationships between stress, depression, and substance abuse. According to the report:

Stress has long been recognized as one of the most powerful triggers for drug craving and relapse to drug use. Research has shown that survivors of disasters are prone to stress-related problems such as PTSD and depression. People who
experience major trauma and those with PTSD and depression may self-medicate with drugs or alcohol to relax, cope with stress, or relieve symptoms. “This study is one of the first to capture data on the effects of stress on substance abuse patterns,” says Dr. Jacques Normand. “The increase in substance abuse found here was of significant magnitude. This study reminds counselors and treatment providers to be alert to increased use of alcohol, tobacco, and marijuana in the wake of (stressful) events.” (p. 1)

Stress can cause people to begin using substances that help to combat the “out-of-control” feeling that stress creates. In the NIDA study (Williams, 2002), the researchers found that 3.3% of the 1008 respondents reported that they began smoking cigarettes after the attacks, 19.3% began drinking alcohol, and 2.5% began smoking marijuana. The percentage of those who increased their use of cigarettes, alcohol, or marijuana was 9.7%, 24.6%, and 3.2% respectively, after the attacks. Almost 29% of respondents reported that they were smoking more cigarettes and/or marijuana and/or drinking more alcohol. Among those who were already using these substances before September 11, 2001, 41.2% smoked more cigarettes and 41.7% drank more alcohol after the attacks. The NIDA notes (Williams, 2002) reported that Dr. Vihov, a researcher in the study, said “The survey results are significant for the sheer numbers of people revealed to be affected by the disaster (stress), the scope of the problem on a citywide scale, and challenges to the delivery of services” (p. 10).

Gorski (2002) presented a workshop in January 2002 on Trauma, Tragedy, and Stress and the implications of stress on the untrained human body. He argued that there
are interpretations of stress or shock from a traumatic event. One of the interpretations comes from the untrained person who says, "I can't cope" or "I'm helpless." The untrained person then needs to deal with these reactions by putting up survival defenses. Those survival defenses may include the old adage: “fight, flight, or freeze.” Fighting may include getting angry, finding a target, and lashing out to create the illusion of control. Flight is a fear-based response that may produce anxiety and emotional reasoning leading to a desire to run and hide or to suppress the anxiety and fear with substances like alcohol and drugs. Freezing, according to Goski, can cause depression, a feeling of becoming immobilized, and giving up hope.

The National Institute of Mental Health (2000) listed stress as one of the leading causes of depression in today’s adolescents. Uncontrolled depression and feelings of despair lead to more serious health risks and ultimately may lead to suicide. The 108th Congress has recognized youth suicide as a public health tragedy. Senator Gordon Smith (R-Ore.) introduced a youth suicide prevention bill honoring his son, Garrett Lee Smith, who committed suicide in September 2003. The bill is an amendment to the Public Health Services Act and calls for, among other things, “increased statewide funding of youth early intervention programs and prevention strategies.” (Congressional Record, July 8, 2004)

In addition, Jones (2001) reported that the best way to prevent suicide is to identify and treat kids with depression and substance-abuse problems. Research has shown that 90% of people who kill themselves have depression or another diagnosable mental or substance abuse disorder. According to a summary Suicide Statistics, Information: Healthy Place.com (2004)
1. The suicide rate in young people has increased dramatically over the last several decades;

2. According to the National Mental Health Association (2003), the rate of suicide for teenagers has nearly tripled since 1960, making it not only the third leading cause of death for teenagers, but the second leading cause of death for college students;

3. According to the U.S. Center for Disease Control and Prevention, more teenagers and young adults died as a result of suicide since 1999 than cancer, heart disease, HIV/AIDS, birth defects, stroke and lung disease combined.

4. According to the American Association of Suicidology, for every older teen and young adult who takes his or her own life, 100-200 of their peers attempts suicide;

5. Between 500,000 and 1 million young people attempt suicide each year. In 1997, suicide was the third leading cause of death in 15 to 24 year olds and the fourth leading cause of death in 10 to 14 year olds;

6. In 2002, there were 1817 deaths from suicide among the over 18 million in adolescents aged 15 to 19, with a gender ration of 5:1 males to females. The strongest risk factors for attempted suicide in youth are depression, alcohol or other drug use disorder, and aggressive or disruptive behaviors.

Research indicates that many high school students are overscheduled and lead lives that are too fast-paced and hectic. This type of approach to life is creating a generation of overstressed students who might experience long-term health problems. As previously stated, stress can lead to depression, substance abuse, and suicide. Slowing down the pace
of life or adding time to our day may be a remedy to excess stress. In the next section, the
notion of time and how it is used in schools is researched and analyzed.

Time

After almost 2 years of intensive study and debate, the National Commission on
Time and Learning (1994) issued its report, Prisoners of Time. The report begins

Time is the missing element in our great national debate about learning and the
need for higher standards for all students. Our schools and the people involved
with them – students, teachers, administrators, parents, and staff – are prisoners of
time, captives of the school clock and calendar. We have been asking the
impossible of our students – that they learn as much as their foreign peers while
spending half as much time on core academic subjects. The reform movement of
the last decade is destined to flounder unless it is harnessed to more time for
learning. (pg. 7)

Time plays a vital role in the improvement of student learning and achievement.
There is a wealth of research to suggest that time-on-task – the actual amount of time a
student is engaged in academic coursework – effects student achievement. Despite the
recent wave of literature and research on this topic, the debate on how to use time in
school has been raging on for more than 120 years, according to the commission’s report.

The National Commission on Time and Learning (2004), investigated the impact
of time on learning and achievement in our schools. The Commission recommended that
“time become a factor in supporting learning, not a boundary marking its limits” (p. 2)
and identified a few areas of needed change in order to break down the barriers to student learning. The first is the fixed clock and calendar. Schools do not have to structure their day in the traditional 45- or 50-minute periods to which they have become accustomed, and students do not need to learn in the assembly-line style that may have been necessary at the turn of the century. If educators are willing to move away from those set blocks of time and consider the possibility of flexible scheduling, the door to increased achievement may be opened.

The Commission also suggested changing today's school schedules to meet the demands of the outside world. The school schedule was modified to resemble the assembly line at the turn of the century by parading students from one class to another, every 45 minutes, eight times a day, 5 days a week. The problem is that today's students are not preparing exclusively for assembly-line work. Presently, many college courses are taught in longer, seminar-style classes that run anywhere from 90 minutes to 3 hours, and do not meet at the same time each day. The Commission argued that when school schedules are confined to 45-minute periods, 7-hour days, and a 180-day school year, they do their students a disservice. It stated that in order to allow students the maximum opportunities for success, the "shackles of time" must be struck from schools. Only then will students have the time to digest the material and engage in it on a deeper, more meaningful level.

School learning time is an important resource that can and should be used to augment student achievement. Additionally, the allocation of time must be considered in any comprehensive effort to improve student learning. Seifert and Beck (1984) reported that only 52.4% of total class time was spent on academic learning tasks. Benton-Kupper
(1990) reported that less than 30% of the school day is devoted to instruction tasks as a result of increased demands placed on educators such as extra duties, clerical tasks, and professional development. He suggested that other factors interfering with school learning time include mismanagement of time by students and teachers, pullout programs, co-curricular activities, and administrative policies.

Goodlad (1984), after investigating over 35 school districts and observing over 1000 classrooms, suggested that

Individual school staffs need to become more self-conscious about the efficient use of students’ time in school, and individual teachers need to become more aware of how class time is utilized. I am convinced that all schools could pick up at least two hours each week of additional class time by aligning practice with policy in regard to beginning and ending times for the school day, recess, and lunch breaks. I am equally convinced that all or almost all teachers could add 10% more time to instruction and learning each week without creating undue pressures in the classroom through shortening “opening exercises” and “clean-up” activities. Both sets of gains would be derivable by doing more quickly and efficiently these and other things now done casually or inefficiently. (pp. 127-128)

For over a century now, the Carnegie unit of scheduling has dominated the American educational scene. Under this structure, teachers teach five classes per day, each approximately 45 minutes in length, and meet with anywhere from 125-166 students
per day.¹ Students typically enroll in six courses that meet every day during a 180-day school year. In a typical high school there are seven periods a day, including lunch and a homeroom/advisory period. As Carroll (1994) argued,

Regardless of the schedule, students are taught in classes that last approximately 45 minutes. This is an impersonal, procrasten structure that prevents the teacher from working closely with each student. Indeed, a student may go through an entire day – or several days – without having a meaningful interaction with a teacher. (p. 2)

Carroll said that this structure is one in which teachers cannot effectively teach and students cannot effectively learn.

Carroll’s solution was to test the Copernican Plan in which classes are taught in longer increments – addressing the necessity of increased time-on-task that the research indicated would improve student achievement. Carroll (1994) argued that the Copernican Plan fundamentally changes the way educators in schools use time. Classes are taught in 90-minute blocks or longer, and there can be as few as two classes of 180 minutes each per day or four 90-minute classes per day as in the 4x4 block schedule. Some measurable benefits of this plan, according to Carroll, were that students would (a) be enrolled in fewer classes at a time, allowing them to focus their energies more efficiently; (b) be in classes with fewer students, allowing more individualized instruction; and (c) master 25% more material.

Because this type of scheduling plan has come under much scrutiny, Carroll felt the need to solicit the aid of outside, objective researchers to evaluate its effectiveness. A

¹This number drops dramatically when dealing with Independent Schools. The average load for a teacher in the schools in this study was four sections and 55–70 students per day.
Harvard-based external evaluation team analyzed the impact of the first Copernican pilot program in the Masconomet Regional High School in Boxford, MA. Findings, as cited in Carroll (1994), indicated that

1. Students, due to the increased time spent with their teachers and the relationships that ensued, were able to function in long macro classes of two hours.

2. Teachers did not find the longer classes to be draining.

3. Students in the block system learned as much as students in the traditional system, and completed 13% more courses by the time they graduated.

4. Students retained as much information under the block schedule as they did under the traditional schedule.

5. In-depth instruction and varied methodological techniques by teachers were significantly more effective under the Copernican method as opposed to the traditional one.

6. School climate, including discipline referrals, dropout rates, suspensions and teacher/student satisfaction improved under the Copernican Plan.

7. Under the Copernican Plan, student mastery increased by as much as 46% in some schools with a median mastery increase of 18% across the board (pp. 4-10).

Canady (1995) identified three areas of concern that today’s educators face: providing quality time, changing school climate, and providing varying learning time. These issues can be addressed, argued Canady, by including longer periods of instruction. He argued that students traveling through a six-, seven-, or eight-period day encounter the same number of pieces of unconnected curriculum each day, with little opportunity
for in-depth study.” This assembly line schedule contributes to the “depersonalizing nature of high schools” (pp. 1-2). In addition, Canady stated that longer blocks of class time would reduce discipline referrals, as there are fewer classroom changes, less free time, and more time under the supervision of an adult in the community. Thayer and Shortt (1999) reported (after a Virginia Department of Education survey of urban, suburban, and rural schools) that when time is used well in schools, school climate improves and learning opportunities increase.

Wood (2002) argued that our schools are not the democratic, child-centered learning communities they should be. He argued that they are becoming more and more like factories that cram more structured minutes into every day, adding new programs while not taking others away. Wood stated, “for this new century of information and speedy communication, we clearly need different models of learning communities – models that foster thinking, dialogue, and meaningful relationships” (p. 545). He made an analogy between “child-time” and “adult-time.” Children live in the here-and-now, or real time. To rush through their classes and thus, their important developmental time is, according to Wood, “contrary to the nature of children and will do irreparable damage to their minds and souls.” (p. 546) Wood argued that “we need to explore both the quantity and quality of educational time; we need to examine the way we structure and schedule time and how we use it... by changing the way we structure time we can change the lives of our students...” (p. 546)

Therefore, Wood (2002, pp.547-549) recommended a model to foster real instructional change in schools. Highlights of the six specific recommendations include
1. Allow time for in-depth learning, investigation, and contemplation by narrowing
   the scope of the curriculum and lengthening time blocks.
2. Allow students and faculty time for reflection throughout individual classes and
   the school year.
3. Change the school schedule to allow more time for teachers, staff, administrators,
   and parents to interact with one another (pp. 547-549).

In short, Wood recommended that we take time • • time for learning, time for
developing relationships, and time for reflection. He concluded the article by saying, “If
we truly wish to transform our schools into challenging, exciting, and secure places, we
need an education system that is dedicated, from top to bottom, to giving teachers more
time to teach and children more time to learn” (p. 550).

Taking more time to teach and learn will inevitably slow down the pace of life
among our young people and reduce the chance of an adolescent leading a frenetic,
overstressed life. While this will not eliminate the problem of overscheduling and student
stress, it will go a long way towards creating a school atmosphere that is calmer and less
harried. Creating time in the school day through a more flexible form of scheduling then,
may be the answer.

Block Scheduling

An educator would be hard pressed to ignore the research conducted over the past
decade regarding time use and scheduling in America’s schools. The Carnegie style of
scheduling, where students are shuffled through the academic day and change their
course of travel up to nine times between 8:00 a.m. and 3:00 p.m., has been in existence
Since Henry Ford introduced the assembly line, according to Roberts (2002), the original intent of this type of scheduling was to train students to work the same schedule as the assembly line so that they would eventually become efficient factory workers. In these schools, emphasis was placed on the core courses of instruction that included math, science, social science, language, and English, with little attention paid to non-academic courses such as music, art, and physical education.

Over the years, because of new professional options opened to high school graduates, the need arose for a more diverse academic experience for students, so courses in home economics, industrial arts, business, and citizenship were added to the core offerings. The result has been a jam-packed, fast-paced schedule that allows students to be exposed to a variety of different subjects. This schedule has caused American education to drift away from the in-depth, content-centered curriculum upon which the system was built.

Over the past decade, longer class periods have been presented as a solution to the fragmented school schedules under which our schools have regularly operated. There are various forms of this 'block' scheduling. The Northwest Regional Educational Laboratory (NWREL) summarized five different scheduling options available in schools (1997, pp.1-2):

The Intensive Block: In this format, students attend two core classes at a time for sixty days. Classes are approximately 120 minutes in length. School years are organized into trimesters.
The 4x4 Block: In this format, students take four classes, each ninety minutes in length, for 120 days, or one semester. They take another set of courses during the second semester.

The A/B Alternating Block: Students attend eight classes, each ninety minutes in length, over two days.

The Modified Block: This schedule allows a school to be flexible and address its particular needs. A school may feel the need to have two blocked classes and three traditional classes per day or run a block schedule Monday through Thursday and a traditional schedule on Friday.

The Parallel Block: Used primarily in elementary schools, the parallel block takes a class of students, divides them into two groups – one group stays with the classroom teacher for language arts or science, the other goes to PE or music. After a specified time, the groups switch. The benefit here is more individualized instruction.

As cited in the NWREL report, the benefits of block scheduling to the students, according to various researchers (i.e. Buckman, King, & Ryan, 1995; Canady & Retig, 1995; Huff, 1995; Reid, 1996; Schoenstein, 1995; Thayer & Shorty, 1999) were as follows:

Increased exposure to a variety of teaching techniques;
Improved grades and scores;
Better attendance rates and fewer tardies;
Less likelihood of experiencing academic failure;
Fewer classes to prepare for in the case of 4x4 and more time to prepare for them in the case of the A/B format;

Longer lunch blocks for club time or other activities that would otherwise have to be held after school. (pg. 2)

In schools that use a form of block scheduling, according to this NWREL report, students experienced a more positive climate, have an environment with fewer distractions, and may use fewer books. Schools using block scheduling received strong support from teachers, students, parents, and administrators.

Researchers from the Metropolitan Educational Research Consortium (MERC) studied a variety of high school schedules and their impact on student achievement, teacher and student satisfaction, and teaching strategies (Pinapa & Westfall, 1997). The study indicated longer class periods led to an improvement in overall student performance in terms of grade-point averages (GPA) and test scores, greater teacher and student satisfaction, more varied teaching methodology, and a “calmer” school environment. The researchers examined two schools with traditional 50-minute schedules and four schools with a block schedule or variations of a block schedule. Initially, only the alternative A/B block schedule seemed to support higher scholastic aptitude test (SAT) scores. But, after one year all forms of block scheduling showed similar SAT score improvement. Teachers and students in this study stated that the learning environment improved because they could pursue concepts in greater depth and augment their problem-solving skills during the longer class periods.
Other research has demonstrated the positive effects of block scheduling on school climate, student achievement, and teacher methodology. Eineder and Bishop (1997) conducted an Ohio high school staff's action-research project in which they examined the effects of a recently implemented block-scheduling arrangement on student achievement, behavior and student-teacher relations. They found that students earned higher GPAs, more students attained honor roll status, disciplinary referrals dropped, teacher-student relations improved, and more teachers and students preferred block scheduling than not. Stader (2001) conducted a study that compared block scheduling to a traditional schedule in small Missouri high schools. He found that administrators and teachers were supportive of block scheduling because it stimulates change in teacher methodology, improves school climate, and enhances student achievement in at least some academic disciplines. Thayer and Shortt (1997) reported that block scheduling in the Virginia Public Schools resulted in fewer disciplinary problems, improved standardized testing, and a strong teacher preference for this format over traditional scheduling. Backman et al. (1995) reported that block scheduling not only helped to increase attendance and GPAs, but also led to school climate gains in the areas of safety, success, involvement, commitment, interpersonal competence, and satisfaction. Ryan (1996) suggested that fewer and longer classes accommodate more cooperative learning styles and enhance student academic performance. Snyder (1997) conducted a study at an Indiana high school comparing school-wide GPAs, standardized test scores, attendance data, and disciplinary records to school baseline data from the 2 years prior to implementation of the block schedule. He found that there was significant improvement in school-wide GPAs for all but two departments and slight improvement in semester-
exam grades. According to the study, there was also an 8% increase in the number of students on the honor roll, increased scores on the American College Testing Assessment (ACT), state proficiency exams, and SATs, as well as improved attendance. While Advanced Placement (AP) scores dropped slightly, students, faculty, and parents expressed high levels of satisfaction with the new schedule.

Not all research on block scheduling is positive, however, and some is inconclusive. For example, Williams (1999) investigated the effects of block scheduling on student learning. The study compared the GPA’s of one group of students during their 9th grade year while under the traditional 7-period day to the GPA’s of their 10th grade year under the 4 x 4 block schedule. The results indicated no significant differences between the students’ freshman and sophomore GPAs. Frager (1997) gathered a series of articles on block scheduling, and the data reinforced the claim that the effectiveness of block scheduling on student achievement was relatively inconclusive. Wronkovich (1998) reported that the existing empirical evidence was ambivalent regarding academic benefits of the block schedule, particularly for mathematics achievement, and that alternative scheduling seemed appropriate in some curricular areas, but not necessarily in others.

Among the many critics of block scheduling, Lindsay (2002) maintained that block scheduling does not provide an academic benefit and can seriously harm academic achievement in schools. He identified a fundamental “common sense” problem of adolescent attention span, especially among the learning disabled. He argued

When a 50-minute class becomes a 90- or 100-minute class, what happens? To maintain attention, less instruction and more “fun”
activities are needed. This “transformation” seems to be the greatest possible about block scheduling in the minds of some proponents, but in practice it means a watering down of course content. Proponents utter the empty slogan, “less is more,” meaning that less is covered but more is learned, but are unable to substantiate any rhetoric. (p. 4)

Lindsay (2002) cited retention of information as a second problem, arguing that students cannot retain the information they learn from the fall of one school year to the spring of the next. His third issue was that less total time is spent on core classes in typical block programs than the traditional programs because one 90-minute class has 10% less time than two 50-minute classes. According to Lindsay, “Where this occurs, there may be extra electives possible during the school year, but spending less time on math, English, and other core courses would seem destined to contribute to the watering down of content.” (p. 5) Lindsay also stated that “the reduced frequency of exposure to material and the rote block of attention span limitations in the longer classes can be predicted to spell trouble. In fact, major peer review studies show empirical evidence of such harm. This data casts [sic] doubt upon the oft-repeated claim that ‘less is more’ under the block.” (p. 6) As cited in Lindsay, two major studies conducted in Canada, one by Beeson of the University of British Columbia and the other by Raphael, Wahlstrom, and McLean in the Ontario schools, found that achievement, across the board, was higher in schools running traditional schedules than in those with block schedules.

Gould (2003) asked the ever-important question: “Will one schedule actually help the kids learn more and enable their teachers to teach more effectively? And if so, how
will they know if it did” (p. 34)? His thesis cited several studies in states such as Iowa, Texas, North Carolina, and Illinois, and argued that “it is not so much the allocation of daily class time that influences a student’s performance. Instead, it is what teachers and students choose to do with time once it is given to them” (p. 34). Gould added

Surprisingly, and contrary to our original hypothesis, we have discovered that when comparing mandatory state exams, voluntary ACT tests, grade point averages, attendance rates, and discipline referrals, there were no statistically significant differences between 4 x 4 block and traditional students...Quality and not quantity of classroom time is what appears to determine real and meaningful learning. Either block scheduling or traditional schedules are well able to deliver quality. A shortage or surplus of relative quantity, however, seems to guarantee little, if anything. (pp. 34-35)

Most research on block scheduling, in terms of its effect on student achievement, community-wide satisfaction, and school climate, is positive, while some studies are inconclusive. The sharpest criticism comes from those who question how teachers will use the extra time given to them. They argue that if teachers are not willing to change their philosophical approach to teaching, then a block schedule can be detrimental to student learning. The research does not clearly support one form of scheduling over another in relation to student achievement, but favors the block in terms of community support and school climate.
Summary

The research indicated that adolescents are overscheduled in today's society. These overscheduled, frantically paced lives lead to undue amounts of stress in kids, which, in turn, lead to higher rates of depression, substance abuse and teenage suicide.

Although the research was mixed on the impact of longer class periods on student achievement and teacher methodology, these considerations are beyond the scope of this study. Some studies showed that longer periods increase student achievement in all major academic disciplines and improve school climate, while others demonstrated student difficulty with retention, especially in the early levels of foreign language, in classes longer than 50 minutes. Some research indicated that in block scheduling, there was higher achievement among AP students, while other research showed lower achievement among AP students. The research was indeed mixed.

Although longer and fewer classes per day, according to the research, can slow down the pace of the day for our students, some research indicates that longer class periods slow down the pace of life in a school, thereby leading to a more positive school climate and less stress among the student body. Four 90-minute periods instead of seven 50-minute periods create an atmosphere that is more positive and calm. However, the available research does not address how stress is impacted by longer class periods. The present study begins to address the relationships between school schedules, time and student stress.

In short, research seemed to suggest that students are overscheduled and that overscheduling can lead to an increased amount of student stress that could manifest itself in drug and alcohol use, depression, and suicide. Administrators need to slow down the
pace of life in school in an effort to reduce the risks of overscheduling and stress on our students. If having longer class periods slows down the pace of school life, while research on the impact of such class length on student achievement is inconclusive, administrators have a responsibility to investigate the possibility of offering longer class periods in schools.
Chapter III
Methodology

Introduction

The purpose of this study was to investigate and compare the academic schedules of two independent day schools and determine to what extent those schedules influenced student perceptions of stress. There were two schools in the study – one employing a traditional academic schedule and the other, a modified block schedule. During the fall of 2003, sophomores and juniors in both schools were administered a survey instrument to assess their perceived stress levels. From each school, randomly selected groups of high-achieving, low-achieving, and average-achieving students participated in focus groups. This chapter provides an overview of the research design and a description of the methodology, including population and samples used, the method and instrumentation, data collection, analysis, hypothesis testing and conclusion. The researcher was guided by the following questions in relation to each school in the study:

1. To what extent do high school students’ perceived demands of academic life create perceptions of stress?

2. To what extent do high school students’ social interactions and/or their classmates’ feelings toward them create perceptions of stress?

3. To what extent do teachers’ attitudes towards high school students’ create perceptions of student stress?

4. To what extent does the school schedule predict emotional manifestations of high school students’ perceptions of stress?
5. To what extent does the school schedule predict physiological manifestations of high school students' perceptions of stress?

Because the research and literature reviews for this study provided no strong evidence supporting one schedule over the other, the researcher operationalized the work around a null hypothesis. Given the exploratory and descriptive nature of the study, the significance level for testing was set at $p \leq .10$ (two-tailed).

Relative to student perception, the key null hypothesis of this study is:

H₀: Students in School A (under the traditional seven-period schedule) perceived no difference in stress levels than did those students in School B (under a modified block schedule).

Any differences that were found were tested for significance $p \leq .10$.

**Design**

This study relied heavily on descriptive data. By relying on observations of both faculty and students at a particular point in time, this study was cross-sectional in nature. The researcher observed and described the actions and perceptions of individuals (i.e., teachers, administrators), groups (e.g., students), and two specific organizations (i.e., school A and school B). Investigating these entities and relying on people's memories involved ex post facto research.
Purposeful sampling techniques were used in selecting the schools in this study. Babie (2002) defined purposeful sampling as "selecting a sample based on the basis of knowledge of a population, its elements, and the purpose of the study" (p. 178). Both schools used in this study were independent day schools, located in the same geographical region of the country, with similar graduation requirements, academic rigor and college placement statistics, with an average of 80-120 students per grade, and an average class size of between 12 and 16 students. The major difference between the two schools was the daily schedule. One school ran a traditional model of 50-minute classes and the other employed a modified block schedule (See Appendix B):

School A has a Grade 10 and Grade 11 student population of N=215 and the sample for this study was n=60. School B had a Grade 10 and Grade 11 population of N=173, and the sample for this study was n=52. Students were selected through informed consent letters from the researcher that had to be signed by a parent or guardian in order to participate.

Instrumentation

The study incorporated both quantitative and qualitative methods. Because of its high reliability and validity numbers (See Tables 1-3), this researcher analyzed quantitative data collected on The School Situation Survey (SSS) (Helms & Gable, 1989) to assess sources of perceived student stress as it relates to academic stress, teacher interactions, and peer interactions. The survey also measured manifestations of stress by assessing the emotional and physiological impact experienced by the student. Through
focus group interviews and observations, this researcher collected qualitative data to assess attitudes and feelings of student stress as related to school schedules and the pace of the school day. Faculty in each school were also interviewed to assess their perceptions of how the schedule affects their students.

In School A, the SSS was administered to 60 students in Grades 10 and 11, or approximately 27.9% of the possible students to be surveyed. In School B, the SSS was administered to 52 students in Grades 10 and 11, or approximately 27.6% of the possible students to be surveyed. The first page of the survey consisted of initial questions designed to generate groups of students who spent a similar amount of time per day engaging in activities outside of the classroom, including homework, co-curricular activities, sleeping, and unstructured time. The second page of the survey comprised questions of the actual SSS. The questions on page one were

1. How much time do you spend per day, on average, doing homework?
   - Less than 1 hour
   - 1-2 hours
   - 2-3 hours
   - 3-4 hours
   - More than 4 hours

2. How much time do you spend per day, on average, participating in co-curricular activities?
   - Less than 1 hour
   - 1-2 hours
   - 2-3 hours
   - 3-4 hours
   - More than 4 hours

3. How much time do you spend per day, on average, sleeping?
   - Less than 6 hours
   - 6-7 hours
   - 7-8 hours
   - More than 8 hours

4. How much time do you spend per day, on average, in unstructured time (time that is not structured for you by outside influences)?
   - Less than 1 hour
   - 1-2 hours
   - 2-3 hours
   - 3-4 hours
   - More than 4 hours
Of the 60 students in School A who were administered the survey, 13 (21%) were low achievers and 17 (28%) were high achievers; the remaining 30 (50%) in the sample were average-achieving students. Of the 52 students surveyed in School B, 10 (19%) were low achievers, 15 (28%) were high achievers, and the remaining 27 (52%) in the sample were average-achieving students.

The SSS instrument is constructed of seven different scales: four scales related to school-related sources of stress and three scales that assessed the manifestations of that stress. The sources of stress scales, as described in Helms and Gable (1989), are:

1. The Teacher Interactions scale was comprised of six items assessing the students' perceptions of their teachers' attitudes towards them. A representative item: "I feel that some of my teachers don't really care about what I think or how I feel." Students whose scores are high on this scale are most likely to have negative perceptions of their teachers' feelings toward them and are possibly experiencing stress as a result of their interactions with teachers.

2. The Academic Stress scale was comprised of three items associated with anxiety about student performance. A representative item: "I am afraid of getting poor grades." Students whose scores are high on this scale are likely to be experiencing stress relative to their grades, to test taking, and to general academic performance.

3. The six items of the Peer Interactions scale relate to students' interactions with other students. A representative item: "Other students make fun of me." A student whose stress level is related to peer interactions would have a high score on this scale.
4. The Academic Self-Concept scale, for which there were four items, deals with
students' perceptions of their own academic standing. A representative item: "I do
good work in school." Because these items are reversed scored, high scores on
this scale indicate a poor academic self-concept.

The manifestations of stress scales, also cited in Helms and Gable (1989), are:

1. The Emotional scale contained six items. A representative item: "I feel upset."
Students whose scores are high on this scale are probably experiencing frequent
feelings of emotional discomfort.

2. The Behavioral scale also contained six items that identify stress-related
behaviors in school. A representative item: "I talk back to my teachers." Students
who misbehave or act out in school are likely to score high on this scale.

3. Three items defined the Physiological scale. A representative item: "I feel sick to
my stomach." High scorers on this scale are likely to be experiencing frequent
physiological symptoms of stress.

Alpha coefficients were generated for the SSS scales derived from the item-level
factor analysis. Table 1 shows the reliability estimates (α) for the total composite sample
of 7,036 students in the original SSS, as well as for the 1,507 in the grade-level cluster,
10-12. These reliability estimates are considered moderate to high given the fact that the
SSS is an affective measure and that the estimates support the appropriate sampling of
items from each content domain (Helms & Gable, 1989).

Test-retest data obtained from a sample of 621 seventh- to ninth-grade students
are reported in Table 2. The interval between administrations was 3 weeks. Reliabilities
ranged from .61 for the Physiological scale to .71 for the Teacher interaction scale. Since the SSS measures affect, which is more variable or personal-state dependent than other aspects of the individual, these data are supportive of the stability of the perceptions of stress levels over time (Helms & Gable, 1989).

Table 1

<table>
<thead>
<tr>
<th>Sources of Stress</th>
<th>Total (N=7036)</th>
<th>Grades 10-12 (n=1607)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Stress</td>
<td>.73</td>
<td>.78</td>
</tr>
<tr>
<td>Teacher Interactions</td>
<td>.78</td>
<td>.80</td>
</tr>
<tr>
<td>Peer Interactions</td>
<td>.68</td>
<td>.69</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Manifestations of Stress</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional</td>
<td>.80</td>
<td>.83</td>
</tr>
<tr>
<td>Physiological</td>
<td>.68</td>
<td>.73</td>
</tr>
</tbody>
</table>
Table 2

Test-Retest Data from Sample of Seventh – Ninth Graders

<table>
<thead>
<tr>
<th>SSS Scale</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Stress</td>
<td>.67</td>
</tr>
<tr>
<td>Teacher Interactions</td>
<td>.71</td>
</tr>
<tr>
<td>Peer Interactions</td>
<td>.69</td>
</tr>
<tr>
<td>Emotional</td>
<td>.65</td>
</tr>
<tr>
<td>Physiological</td>
<td>.61</td>
</tr>
</tbody>
</table>

\(n=621;\) 3-week interval

Simple correlations were used to examine the construct validity of the SSS. The A-Trait scale of the State Trait Anxiety Inventory for Children (STAIC) (Helms & Gable, 1989) was administered to the 1,111 fifth-, seventh-, and ninth-grade students during the administration of the test. Based on the general anxiety proneness construct measured by the A-Trait scale of the STAIC, it was hypothesized that significant positive correlations would be found with all seven of the SSS scales. Table 3 represents the resulting correlations that were supportive of the construct validity of the SSS scales (Helms & Gable, 1989).

The highest correlation appeared with the Emotional \((r = .71)\) scale, perhaps resulting from the fact that the A-Trait scale contains a number of items pertaining to feelings of anxiety. The next highest relationships were found with Academic Stress \((r = .52)\) and Physiological \((r = .46)\), again perhaps due to the similarity in item content between the SSS scales and the A-Trait scale.
Table 3

Construct Validity of SSS Scales

<table>
<thead>
<tr>
<th>SSS Scale</th>
<th>Correlation to STAIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Stress</td>
<td>+.52</td>
</tr>
<tr>
<td>Teacher Interactions</td>
<td>+.29</td>
</tr>
<tr>
<td>Peer Interactions</td>
<td>+.33</td>
</tr>
<tr>
<td>Emotional</td>
<td>+.71</td>
</tr>
<tr>
<td>Physiological</td>
<td>+.46</td>
</tr>
</tbody>
</table>

Data Collection

Research began in the fall of 2003 after permission was obtained from the Headmaster of each school and all students and their parents. In an effort to eliminate bias and coercion since the researcher is an employee at School A, an independent researcher conducted all aspects of data collection in School A. The SSS was administered to all willing informed-consent participants from the populations by the conclusion of the first semester of the school year. The focus groups were stratified and randomly selected in both schools through a random-selection calculator program to identify an equal number of high-achieving, average-achieving, and low-achieving students from each of the two Grades, 10 and 11. After analysis of the quantitative data, focus group questions were fine-tuned to enrich the data collected through the surveys. An independent researcher who served as the group moderator conducted the focus group session in School A. The researcher conducted the focus group session in School B. The
focus group sessions were audio taped. These data were analyzed for themes, attitudes
and perceptions relative to each other.

Data Analysis

Independent test and multiple regression analyses were performed using the
statistical software package SPSS 11.0. Although all students completed the entire
survey, only the questions relating to the sources of academic stress, teacher interaction,
and peer interactions, along with the emotional and physiological manifestations of stress
were used in the final analysis. Options for each question modeled a Likert-type scale
response, with the frequency dimension ranging from Never to Always (i.e. 1 = never, 2 =
rarely, 3 = sometimes, 4 = often, 5 = always).

An independent samples t test was used to compare the sample mean and standard
error of the mean for each source and manifestation of stress. By using this test, the
researcher was able to measure the central tendency of the sample mean distribution and
the amount by which each of the two samples deviates from its mean. The schedule type
(traditional vs. block) was used as the grouping variable and the sample mean for variable
I (students on a traditional schedule) was compared to the mean in variable 2 (students
on a block schedule) for each source of stress (academic stress, teacher interactions, and
peer interaction) and each manifestation of stress (emotional and physiological). Because
the mean and standard deviation of the entire population is unknown, an independent
sample t test was done. The t test determined whether the difference between the sample
means of each differ significantly from chance. A significance level of p ≤ .10 was used
as the determinant of statistical significance. Calculations of the level of significance determined whether the hypothesis was accepted or rejected.

A linear multiple regression analysis was performed to determine to what extent the school's schedule affects each source of stress. In all models, the dependent variable was the school schedule \( Y \) and the \( R^2 \) and the adjusted \( R^2 \) values indicated how much of the variance in each independent variable was determined by the schedule. The standardized \( \beta \), \( F \)-value, and \( t \)-value of each model determined if the analysis was significant. The independent variables for each model were as follows:

- In model 1A, the independent variable was academic stress \( X_1 \);
- In model 1B, the independent variables were academic stress \( X_1 \) and teacher interactions \( X_2 \);
- In model 1C, the independent variables were academic stress \( X_1 \), teacher interactions \( X_2 \), and peer interactions \( X_3 \).

A linear multiple regression analysis was also performed to determine to what extent the school's schedule affects each manifestation of stress. In all models, the dependent variable was the school schedule \( Y \) and the \( R^2 \) and the adjusted \( R^2 \) values indicated how much of the variance in each independent variable was determined by the schedule. The standardized \( \beta \), \( F \)-value, and \( t \)-value of each model determined if the analysis was significant. The independent variables for each model were as follows:

- In model 2A, the independent variable was the emotional manifestations of stress \( X_1 \).
In model 2B, the independent variables were the emotional manifestations of stress \( X_1 \) and the physiological manifestations of stress \( X_2 \).

To enrich the research and to help the researcher explain statistical results, 12 students from each school were randomly selected (through a calculator- selection program) to participate in focus groups. The goal was to examine the perceptions of students in two different groups, each in a different school following a different schedule. The focus-group sessions were audio taped and the following questions were asked. Probing questions were asked as each interview took on its own form:

1. Would you describe the pace of your school day as too fast, too slow or just right? Why?

2. To what extent do you believe that the school schedule contributes to the overall pace of your school day?

3. What impact do you perceive the length of the class period has on the speed with which the class progresses?

4. What impact do you think the length of the class period has on teacher methodology?

5. To what extent do you believe that the school schedule contributes to the amount of homework you do per day?

The data were organized through a coding system. According to Krahwohl (1998), coding provides a lens through which data can be viewed in a relational structure. The a priori codes used to organize the qualitative data for this study included
overscheduling, stress, time, and block scheduling thus matching sections from the
literature review in chapter 2. The following steps were taken to gather, organize, and
analyze the data from the focus group interviews:

1. The audicapes from the interviews were transcribed to create a word-for-
word transcript of each interview.

2. The transcripts were read and reread to identify themes, repetitions and
relationships.

3. Tentative codes were devised from the literature review (a priori) into
which the data were categorized: overscheduling, stress, time, and block
scheduling.

4. Using a different highlighter for each category, the researcher reviewed
the transcripts and coded each line of the transcripts into the above categories.

5. As other trends and themes became evident, they were added to the list of
categories.

6. A matrix was developed to display the information in a way to describe
the relation between two or more of the variables and the number of times certain
words or phrases were used in each category in each school.

7. A few instances of verbatim narrative were used from the data for each
code to provide descriptive examples.

Other qualitative data were gathered through unstructured observations and
discussions with students, faculty, and administrators in each school. While spending
time at each school, the researcher gained perspectives on teacher and student perceptions
of their schedule. Faculty were asked to address their perceptions of methodology and their perceptions of student stress levels. Students were asked to address their perceptions of teacher effectiveness, homework load, and grades.

Summary

This chapter presented the design and methodology for this study. In an effort to understand whether school schedules contributed to student stress, a combination of quantitative and qualitative research methods was used. An independent t-test and multiple regression models were used to assess stress levels in students following a traditional schedule and those following a modified block schedule. Computing the appropriate statistical value and determining its significance at \( p \leq 0.10 \) set the criteria for the rejection or acceptance of the hypothesis. Chapter 4 presents an analysis of the descriptive and quantitative data through t-tests and regression analysis as well as qualitative data.
Chapter IV
Analysis of the Data

Introduction

The purpose of this study was to investigate and compare the academic schedules of two Independent Day Schools and determine to what extent those schedules influenced student perceptions of stress. This chapter reports the results of the data analysis carried out using the statistical software package SPSS 11.0 as well as the results of focus group interviews and the individual discussions with faculty in both schools. The research questions are as follows, in relation to each school in the study:

1. To what extent do high school students’ perceived demands of academic life create perceptions of stress?
2. To what extent do high school students’ peer interactions and/or their classmates’ feelings toward them create perceptions of stress?
3. To what extent does the school schedule predict emotional manifestations of high school students’ perceptions of stress?
4. To what extent does the school schedule predict physiological manifestations of high school students’ perceptions of stress?
5. To what extent do teachers’ attitudes towards high school students’ create perceptions of student stress?

Because the research and literature reviews for this study provided no strong evidence supporting one schedule over the other, the researcher operationalized the work
around a null hypothesis. Given the exploratory and descriptive nature of the study, the significance level for testing was set at $p \leq 0.10$.

Relative to student perception, the key null hypothesis of this study is:

$H_0$: Students in School A (under the traditional seven-period schedule) perceived no difference in stress levels than did those students in School B (under a modified block schedule).

Through survey research and qualitative focus groups and individual interviews, the above research questions were answered. This chapter presents the method and design for the study, beginning with an explanation of the descriptive data, the quantitative data (including reliability, $t$ test, and regression analysis), qualitative data (including a priori codes and faculty discussions), and summary.

**Descriptive Data**

School A was an independent day school enrolling 427 students in Grades 9 - 12. There were 108 students in Grade 10 and 107 students in Grade 11 during the 2003-2004 school year. Located in the northeast United States, 100% of its graduating seniors matriculated at four-year colleges upon graduation; 71% of the graduating seniors from the Class of 2003 matriculated to schools that Barron's (2002) has identified as "most" or "highly" competitive (See Appendix A). In order to graduate, students must take 4 years of English, 3 years of math, science, and history, and complete the third level in any one of three foreign languages (French, Spanish, Latin). Students must take health and physical education each year and complete nine credits (or the equivalent of three semesters) of art and a year of citizenship education in Grade 10. For the Class of 2003,
the mean GPA was 3.01/4.0 and the mean SAT score was 1205 (587 verbal, 618 math). The average class size was 14 and the ratio of students to faculty is 8:1. School A runs on a traditional 50-minute schedule; classes rotate through a six-day cycle, meeting 250 minutes (5 classes X 50 minutes/class) per cycle.

School B was an independent day school located in the northeast United States with an enrollment of 332 students in Grades 9 − 12 with 82 students in Grade 10 and 91 students in Grade 11. Ninety-nine percent of students in School B matriculated at a four-year college upon graduation; 65% of the graduating seniors from the Class of 2003 matriculated to schools that Barron’s (2002) identified as “most” or “highly” competitive. Students are required to take 4 years of English, 3 years of math, history and foreign language, and 2 years of science in order to graduate. In addition, students must take health and physical education each year and satisfy requirements in the arts as well as in community service. The mean GPA for a student in the Class of 2003 was 3.12/4.0 and the mean SAT score was 1120 (543 verbal, 577 math). The average class size was 12 students and the ratio of students to faculty was 7:1. School B runs a modified block schedule; classes meet 210 minutes per week. Descriptive data comparing the two schools on the matching variables of interest are presented in Table 4. Sample daily schedules for each school are provided in Appendix B.
Table 4

Descriptive Data for Schools A & B (Class of 2003)

<table>
<thead>
<tr>
<th></th>
<th>School A</th>
<th>School B</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>((n = 60))</td>
<td>((n = 52))</td>
<td></td>
</tr>
<tr>
<td>Enrollment, 9 through 12</td>
<td>427</td>
<td>332</td>
<td>95</td>
</tr>
<tr>
<td>Enrollment, 10 &amp; 11</td>
<td>215</td>
<td>173</td>
<td>42</td>
</tr>
<tr>
<td>% of students matriculating into college</td>
<td>100%</td>
<td>99%</td>
<td>1%</td>
</tr>
<tr>
<td>% of students attending most or highly competitive colleges</td>
<td>71%</td>
<td>65%</td>
<td>6%</td>
</tr>
<tr>
<td>Mean GPA</td>
<td>3.01</td>
<td>3.12</td>
<td>.10</td>
</tr>
<tr>
<td>Mean SAT Score</td>
<td>1205</td>
<td>1120</td>
<td>85</td>
</tr>
</tbody>
</table>

Quantitative Data

\textit{t} test data. An independent samples \textit{t} test was used for a comparison of the mean difference of students in School A and School B on three sources of stress – academic, teacher interactions, and peer interactions – along with two manifestations of stress – emotional and physiological. In all analyses, the student sample \((n)\) was 60 (A) and 52 (B). Table 5 shows the abbreviated results. A more thorough description of the data in SPSS format is in Appendix C.
Table 5

*t* test Data for Students in School A and School B

<table>
<thead>
<tr>
<th>Type of stress</th>
<th>Mean difference School A &amp; School B</th>
<th><em>t</em>-value</th>
<th><em>p</em>-value</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic (AS)</td>
<td>1.12</td>
<td>1.77</td>
<td>.380</td>
<td>-0.30</td>
</tr>
<tr>
<td>Peer interactions (PI)</td>
<td>.81</td>
<td>1.39</td>
<td>1.67</td>
<td>-0.26</td>
</tr>
<tr>
<td>Emotional (E)</td>
<td>3.03</td>
<td>3.53</td>
<td>.001</td>
<td>-0.73</td>
</tr>
<tr>
<td>Physiological (PH)</td>
<td>.43</td>
<td>.85</td>
<td>.39</td>
<td>-0.17</td>
</tr>
<tr>
<td>Teacher interactions (TI)</td>
<td>-.34</td>
<td>-.48</td>
<td>.71</td>
<td>0.09</td>
</tr>
</tbody>
</table>

For academic stress (AS) the mean stress level for the students in the traditional schedule was \( M = 10.60 \) (standard deviation \( SD = 3.65 \)), and the mean stress level for the students in the modified block schedule was \( M = 9.48 \) (\( SD = 2.94 \)). The overall difference in the mean scores was 1.12 and the effect size was -.30, which indicates a medium effect. These results provided a *t*-value of 1.77 and a *p*-value = .08, which confirmed a statistical significant (*p* ≤ .05) student stress level relating to academic stress, favoring lower levels of stress for the students in the modified block schedule.

For peer interactions (PI) the mean stress level for the students in School A was \( M = 10.93 \) (\( SD = 3.06 \)), and the mean stress level for the students in School B was \( M = 10.12 \) (\( SD = 3.15 \)). The overall difference in the mean scores was .81 and the effect
size was -.26, which indicates a small effect. These results indicate a $t$ value of 1.39 significant at $p = .167$, indicating no statistical significance in differences in student stress levels relating to peer interactions, although the mean stress level was slightly lower for students in School B.

For the emotional manifestations (E) of stress the mean stress level for the students in School A was $M = 15.80$ ($SD = 4.13$), and the mean stress level for the students in School B was $M = 12.77$ ($SD = 4.93$). The overall difference in the mean scores was 3.03 and the effect size was -.73, which indicates a large effect. These results indicated a $t$ value of 3.54 and a $p$ value of .001, confirming a difference in student stress levels relating to the emotional manifestations (E) of stress, with lower levels of stress for the students in School B.

For the physiological manifestations (PH) of stress the mean stress level for the students in School A was $M = 7.33$ ($SD = 2.53$), and the mean stress level for the students in School B was $M = 6.90$ ($SD = 2.78$). The mean difference was .43 and the effect size was -.17, a small effect. The $t$ value of .86 significant at $p \leq .39$, indicates no statistical significance for differences in student stress levels relating to the physiological manifestations (PH) of stress.

For teacher interactions (TI) the mean stress level for the students in School A was $M = 12.87$ ($SD = 7.43$), and the mean stress level for the students in School B was $M = 13.21$ ($SD = 4.06$). The overall difference in the mean scores was -.34 and the effect size was -.10, which indicates a small effect. Results show a $t$ value of -.49 significant at $p \leq .71$, indicating no statistical significance for differences in student stress levels.
between School A and School B relating to teacher interactions. The mean stress level was slightly lower for students in School A.

Regression analyses. A multiple regression analysis was performed to test to what extent the schedule predicts the stress level of students relating to three sources of stress – academic (AS), peer interactions (PI), and teacher interactions (TI). Three separate regressions were run in model 1 where the school schedules were the dependent variables for each model. Table 6 shows results of the regression models only. While data explaining each of the sources of stress within the model are explained in this section, full SPSS printouts are found in Appendix C.

The regression analysis for model 1A shows an $R^2$ value of .028, which indicates that AS explains 2.8% of the variance when school schedules were the dependent variable. AS yielded an $F$-value of 3.12, a $\beta$ of -.17 and a $t$-value of -1.77 significant at $p \leq .080$, indicating a lower perceived stress level for students in School B. To determine the significance of this model an ANOVA yielded an $F$-value of 3.12. The significant $F$-value for the multiple regression model 1A on schedule type indicates that the predictor variable, academic stress, influences student stress when the school schedule is the dependent measure.
<table>
<thead>
<tr>
<th>Model #</th>
<th>Variables</th>
<th>$R^2$</th>
<th>$F$-value</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1A</td>
<td>Academic stress (AS)</td>
<td>.028</td>
<td>3.12</td>
<td>.080</td>
</tr>
<tr>
<td>1B</td>
<td>Academic stress (AS), Peer interactions (PI)</td>
<td>.039</td>
<td>2.21</td>
<td>.115</td>
</tr>
<tr>
<td>1C</td>
<td>Academic stress (AS), Peer interactions (PI),</td>
<td>.057</td>
<td>2.17</td>
<td>.096</td>
</tr>
<tr>
<td></td>
<td>Teacher interactions (TI)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The regression analysis for model 1B shows an $R^2$ value of .039, which indicates that AS and PI explain 3.9% of the variance with school schedules as the dependent variable. AS yielded a $\beta$ of -.15 and a $t$-value of -1.57 significant at $p = .120$. PI yielded a beta of -.11 and a $t$-value of -1.13 significant at $p = .260$. Since AS yielded a stronger beta value and $t$-value than PI, academic stress has more of an impact on the variance than peer interactions. To determine the significance of this model, an ANOVA yielded an $F$ value of 2.21. The insignificant $F$ value ($p = .115$) for the multiple regression model 1B on schedule type indicates that when PI is added to AS there is less effect than when AS is analyzed alone when the school schedule is the dependent measure.

The regression analysis for model 1C shows an $R^2$ value of .057, which indicates that the combination of AS, PI and TI explain 5.7% of the variance when school schedule is the dependent measure. AS yielded a $\beta$ of -.19 and a $t$-value of -1.90 significant at $p<
.060. TI yielded a $t$ of .15 and a $t$-value 1.43 significant at $p = .156$. PI yielded a $t$ of -.15 and a $t$-value of −1.48 significant at $p = .142$. Since the value of the $t$ became stronger and the significance level strengthened to $p \leq .060$, academic stress has a stronger impact on student stress than teacher interactions and peer interactions when the school schedule is used as the dependent variable. To determine the significance of this model an ANOVA yielded an $f$-value of 2.17. The significant $f$-value ($p \leq .096$) for the multiple regression model 1C on schedule type indicates that when TI is added to PI and AS there is a more significant impact than if PI and AS were analyzed alone.

A multiple regression analysis was performed to test to what extent the schedule predicts the stress level of students in relation to two manifestations of stress—emotional and physiological. Two separate regressions were run in model 2 where the school schedules are the dependent variables for each model. Table 7 shows results of the regression models. While data explaining each of the manifestations of stress within the model are explained in this section, full SPSS printouts are found in Appendix C.

The regression analysis for model 2A shows an $R^2$ value of .102, which indicates that the emotional manifestation (E) of stress explains 10.2% of the variance when school schedule is the dependent measure. E yielded a $t$ of -.32 and a $t$-value of −3.54 significant at $p \leq .000$ favoring the stress level of students in the modified block schedule. The significant ($p \leq .000$) $F$-value of 12.53 indicates that the school schedule can be a predictor of the emotional manifestations of stress.
Table 7

Regression Model Analysis for Manifestations of Stress of Students in School A & B

<table>
<thead>
<tr>
<th>Model #</th>
<th>Variables</th>
<th>$R^2$</th>
<th>F-value</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>2A</td>
<td>Emotional</td>
<td>.102</td>
<td>12.53</td>
<td>.001</td>
</tr>
<tr>
<td>2B</td>
<td>Emotional,</td>
<td>.118</td>
<td>7.32</td>
<td>.001</td>
</tr>
<tr>
<td></td>
<td>Physiological</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The regression analysis for model 2B shows an $R^2$ value of .118, which indicates that the emotional (E) and physiological manifestation (PH) of stress explains 11.8% of the variance when school schedule is the dependent measure. E yielded a t-value of -3.72 and a β of -.41, significant at $p \leq .000$, favoring the stress level of students in School B. PH yielded a t-value of 1.42 and a β of .156 nonsignificant at $p = .160$. Therefore, the emotional manifestations of stress are more predictable than the physiological manifestations of stress when the school schedule is used as the dependent variable. The significant ($p \leq .001$) F-value of 7.33 for the multiple regression model 2B on schedule type indicates that a school schedule can be a predictor of the emotional (E) and physiological manifestations (PH) of stress.

Summary of quantitative data. In conclusion, the analyses of the quantitative data indicate that the academic stress (AS) a student experienced in the modified block schedule (School B) was significantly lower than the academic stress a student experienced in the traditional schedule (School A). The strongest significance level and F-value of the regression models were the emotional manifestations (E) of stress, which
means that the school schedule was a significant predictor of the emotional manifestations (E) of student stress. In addition, when analyzed together, the school schedule may be a predictor of both the emotional (E) and the physiological (PH) manifestations of stress. That stress is lower in a modified block scheduled school (School B) than in a traditionally scheduled school (School A).

**Qualitative Data**

The qualitative data were coded from the focus group interviews. The four a priori codes used to organize qualitative data for this study included overscheduling, stress, time, and block scheduling as derived from the literature review. What follows are raw data and representative quotations from responses in each of the a priori codes. A transcript of the focus group interviews is in Appendix D.

Twelve students from each school were randomly selected to participate in focus groups. Depending on student schedules, some interviews were held in groups of two or three; some were held with just the researcher and one student, and some were held with as many as 12 students in a group.

**Overscheduling.** Each time a respondent used the words overscheduled or something closely related (e.g., crazy, hectic, busy, draining, tired, exhausted, non-stop, frenetic, or burnout), a numerical value equivalent to +1 was assigned. Each time a respondent used the words less crazy or less hectic, a numerical value of −1 was assigned. School B employs a different schedule on Monday than on the other days of the week. All of their classes meet on Monday—eight classes for 40 minutes each. The researcher
demonstrated that the perceptions are different among the students in School B on Monday (when classes are shorter) than on Tuesday–Friday (when classes are longer). The net score for the overscheduling section is shown in Table 8.

Table 8

Overscheduling Analysis for Students in School A and School B

<table>
<thead>
<tr>
<th>School and Schedule</th>
<th>Overscheduling (Net Values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator Words</td>
<td>Crazy, less crazy (-), hectic, less hectic (-), busy, draining, exhausted, tired, non-stop, overscheduled, frenetic, burnout</td>
</tr>
<tr>
<td>Traditional</td>
<td>34</td>
</tr>
<tr>
<td>(School A)</td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>5</td>
</tr>
<tr>
<td>(School B)</td>
<td>20 (Monday*)</td>
</tr>
</tbody>
</table>

Note: *On Mondays, School B meets all eight periods of the day, for 40 minutes each.

Students in School A used words relating to overscheduling a set value of 34 times, and students in School B used words relating to overscheduling a net value of 5 times. When referring to Mondays, the day that School B students meet all eight of their classes for 40 minutes each, students used words that referred to overscheduling a net value of 20 times. Students in School A used words relating to overscheduling seven times more frequently than did students in School B, when speaking about Tuesday through Friday in School B. When speaking about Mondays, students in School B used words relating to overscheduling four times more frequently than about any other days of the week in their school.
Within the focus group interviews, students made comments that supported the summary above. When asked whether they found the pace of their day to be too fast, too slow, or just right, a student in School A (traditional) reported that

My day feels pretty hectic – too rushed. We move from class to class, have a break in the morning and a long one for lunch, but for the most part we move from class to class every 50 minutes. Sometimes I feel like when we get rolling on a cool topic in English or history, for example, and the class just ends. It's hard for us to get that momentum back the next time we meet.

Another student in School A reported that

I think it (my day) is pretty hectic. Things move pretty fast. There are some built in breaks like recess and lunch, but for the most part, I would say that from the time I get up in the morning until I go to bed at night, my day is pretty hectic.

A student in School A began the following statement with the word "burnout" to describe the way she feels:

Burnout happens – for me, anyway. From the time I get up in the morning until the time I get into bed at night, my day moves pretty quickly. I am exhausted by the end of the day. Could I get burned out by that? I suppose so. Probably. If I slow down, I don’t feel as much pressure right away, but it will catch up to me later on because I don’t get done what I need to get done and that creates more stress for me.
When talking about the pace of their days, a School B student reported that Mondays are different than the rest of the week.

Mondays are the most hectic because we meet every class for 40 minutes – and we have less time to get from class to class. During an average Monday class, it will take us 5-10 minutes to settle down, we review the homework, talk about what is coming for the week, then do a little bit of work, and then we leave – it’s crazy.

When asked if they are more tired at the end of a Monday than on any other day of the week, one student in School B said:

I would say so, yes. It’s not draining because of the material we learn, it’s different than that. It’s draining because we are constantly in motion, changing classes…what is it, seven times? Yes, seven times. Changing classes seven times is a lot more than three or four times and when you add that to after school activities, it’s a lot. The other days aren’t too bad, though.

A School B student juxtaposed the two types of days in the following comment:

On the days with 75- and 100-minute classes, we might be forced to cut a discussion short, but the teacher almost always gets through the material in a more relaxed time frame. If a teacher has control over the class, then it seems to run more smoothly. But, we have teachers who don’t necessarily run the best classes, so it always seems as though we are rushing towards the end – of any class.
The qualitative data suggest that students in School A perceive a more frenetic pace of life than do students in School B. The only day that students in School B refer to an overscheduled or frenetic life on a consistent basis is Monday when they meet all of their classes for 40 minutes each. During the rest of the week students in School B, as compared to the students in School A, certainly seemed to experience a less frenetic and less harried school day.

**Stress.** Each time a respondent used the word stress or something related (stressful, medium stress, high stress), a numerical value equivalent to +1 was assigned. Each time a respondent used the words less stressful or low stress, a numerical value of −1 was assigned. The net score for the stress section is shown in Table 9.

The data in Table 9 demonstrate that students in School A used words relating to stress a net value of 17 times and students in School B used words relating to stress a net value of .7 times. When referring to Mondays, the day when School B students meet all eight classes for 40 minutes each, they used words that related to stress 7 times. Students in School A used words relating to stress two-and-a-half times more often than did students in School B, even when speaking about Mondays.
Table 9

**Stress Analysis for Students in School A and School B**

<table>
<thead>
<tr>
<th>School and Schedule</th>
<th>Stress (Net Values)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indicator Words</strong></td>
<td>Stressful (+), less stress (-), relaxed (-), medium stress (+), low stress (-),</td>
</tr>
<tr>
<td>Traditional</td>
<td>17</td>
</tr>
<tr>
<td>(School A)</td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>.7</td>
</tr>
<tr>
<td>(School B)</td>
<td>7 (Mondays*)</td>
</tr>
</tbody>
</table>

*Note:* On Mondays, School B meets all eight periods of the day, for 40 minutes each.

In the focus group interviews, students made several comments in support of the above summary. When asked about how the schedule contributes to the overall pace of his school day, a student in School A (traditional) reported that

Having some free periods during the day helps to break up the monotonous of the day and gives you more time to do things, but then there are days that I feel really stressed because I meet all of my classes and the day feels rushed because I am going from class to class, meeting all five on one given day, which makes things very stressful - not to mention because I have all that homework.

A topic raised with the students in School A was the level of stress they experience on days in which they have more time, such as a day when one or two of their major classes do not meet. One student in School A responded by saying:
I experience much less stress on those days. On the days I have double lunch (100 minutes as opposed to 50) the stress level goes down so much with that extra 50 minutes, the day seems so much more relaxed. I definitely feel less stress when I have fewer classes and less stress on the nights I have less homework. It’s no secret...I think we all feel that way.

Regarding the topic of stress, one student in School A reported that
When people come out of a class they might say, “Oh, I just took a really hard test or I have a ton of homework tonight or I’m so stressed out.” It’s like the first thing people talk about. I have a friend who stresses out about everything – tests, papers, quizzes, homework checks – everything. She can’t enjoy herself on the weekend because she has too much to do and feels as though she must do it now or it will not get done and she will continue to stress out. This place is pretty stressful – a lot of us feel burnout every once in a while.

School B students responded differently about their stress level depending upon the day of the week. For example, speaking about Mondays, one student said
The weekends are more stressful, believe it or not, because you have to do all of your homework because you meet all of your classes on Mondays. On the days we don’t meet every class, the night before is less stressful.
When students spoke about the perceptions of stress levels among students in School B, it depended, many times, on the length of the class period. For example, one student said

For the longer classes, teachers don’t seem as rushed so as to stick to a plan. During the shorter classes, it seems as though less time is wasted, and that makes it more stressful. Whereas during the longer periods, teachers are a bit more relaxed and not as rushed to get things done. I like the longer periods more.

Another student in School B said

Teachers definitely, like, teach slower in the longer classes. It’s a lot more relaxed – the longer periods. On Mondays, you come in and there are notes already on the board. On the other days, you come in and teachers take their time getting into it (class), but once they do, you can really explore a topic without worrying about the end of class coming too quickly. There are more options available to a teacher in a longer class.

Qualitative data suggest that the perceptions of stress are stronger in School A that employs a more traditional schedule of 50-minute classes. The focus group interviews indicated that students perceive a more relaxed atmosphere when there is more time in a class period such as 75 minutes or even 100 minutes. Students in School B perceived there to be a more harried and frenetic approach by the teachers on Mondays when all classes meet as opposed to the other days of the week.
Time. Each time a respondent used the word time or something that indicated the need for more time, a numerical value equivalent to +1 was assigned. Each time a respondent used the word time or something related that indicated there was enough time, a numerical value of -1 was assigned. The net score for the time section is shown in Table 10.

Table 10

<table>
<thead>
<tr>
<th>Indicator Words</th>
<th>Time (Net Values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional (School A)</td>
<td>11 (+37, -26)</td>
</tr>
<tr>
<td>Block (School B)</td>
<td>-5 (-10, +5)</td>
</tr>
<tr>
<td>9 Monday* (+15, -6)</td>
<td></td>
</tr>
</tbody>
</table>

Note: *On Mondays, School B meets all eight periods of the day, for 40 minutes each.

Students in School A used words relating to time a net value of 11 times, and students in School B used words relating to time a net value of -5 times. When referring to Mondays, which is the day that School B students meet all eight of their classes for 46 minutes each, they used words that related to time a net value of 9 times. Students in School A used words relating to the need for more time more than 7 times as much as did students in School B (+37 to +5), but only a little more than twice as much when students
in School B spoke about Mondays (+37 to +15). In School A, words relating to time were mentioned on 61 occasions, 60% of which were mentioned as a need for more time to spend in a class or to relax or slow down. In School B, words relating to time were experienced 15 times, 33% of which were mentioned as a need for more time to spend in a class or to relax or slow down. On Mondays in School B, that percentage rose to 57% (15 of 26 times).

The interviews combined several comments that support the findings above. When asked what effect more time had on her stress levels, a student in School A reported that

I remember last year I only had one free period (per six-day cycle) and that put a lot of stress on me because I didn’t have a lot of time. This year I have five free periods (per six-day cycle) and that has really reduced my stress level because I have more time.

When asked if they get a sense that some teachers rush through the last few minutes of a class period to get through the material, a student in School A reported

Yes, absolutely. If you see the teacher is rushing, you pay less attention because you know that they are just breezing though it, and if they had planned the time better, they probably could have kept my attention throughout the class. One of my teachers begins the class slowly and then I feel as though he is rushing at the end because he wants to get through the material and doesn’t have the time he needs. We might be talking about something interesting and then he needs to stop us literally in mid-discussion and move on to get to the material. Sometimes I feel
as though he is trying to do too much – give us too much information – and that takes away from some of the really important stuff that we needed to get to.

A student in School A added

Sometimes, when a teacher is showing a movie or something, there is time for the movie and that’s it. So, I think the time impacts the way the teacher conducts the class. If there was more time, there could be a discussion after the movie. If there is less time, maybe we don’t see all of the movie and we end up having just a lecture or a discussion. I feel like if there was more time, we could do more things.

When students in School B were asked similar questions about methodology and how the end of a class feels in their school, one reported that

The 75-minute class is slower, a bit slower in that the teacher doesn’t seem to present the material as rushed as they might in a 40-minute class. In English you can have better discussions, more activities. The more time the teacher has, you know 100-minutes vs. the 75-minutes vs. the 40-minutes, the more time they have to do different things. It does depend on the teacher. Some teachers use the lab period (100-minutes) for activities, which is great. In Chem, for instance, we take a daily quiz, go over it, review the homework from the night before, do a lesson, and have time for practice exercises – having the extra time is good in Chemistry.
Another student in School B said
On Mondays (40-minute classes) teachers are rushed and they inevitably run out of time. On other days, that doesn’t happen as much. On the 75 and 100-minute classes, we might be forced to cut a discussion short, but the teacher almost always gets through the material in a more relaxed time frame.

When asked to explain what their classes are like on Mondays versus the other days, a student in School B said that
Monday is basically what you are going to be doing for the rest of the week – like you really don’t have a whole lot of work, it’s kind of review for what you will do for the rest of the week. You really don’t get a chance to sit and relax in your Monday classes because it is not a long period. Classes are short and quick – you go from one class to the other – with little time to sit and relax or learn or discuss, like we can do during the 75- or 100-minute classes.

This qualitative data seemed to suggest that the shorter class periods (50-minute classes in School A and 40-minute classes in School B) do not provide enough time for student reflection and effective teacher methodology. That methodology, to be fair, does depend on the teacher’s use of that time. In School A, students mentioned more frequently that they needed more time than students in School B did. The students in School B mentioned that Mondays prove challenging to them and the teachers because there is not enough time to do anything substantive like there is on the other days of the week.
Block scheduling. Each time a respondent used the words schedule or something related to the schedule (alternating days, drop block), a numerical value equivalent to 1 was assigned. The net score for the schedule section is shown in Table 11.

Table 11

Block Scheduling Analysis for Students in School A and School B

<table>
<thead>
<tr>
<th>School and Schedule</th>
<th>Scheduling (net values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator Words</td>
<td>Schedule, alternating days, drop block</td>
</tr>
<tr>
<td>Traditional</td>
<td>14</td>
</tr>
<tr>
<td>(School A)</td>
<td></td>
</tr>
<tr>
<td>Block</td>
<td>14</td>
</tr>
<tr>
<td>(School B)</td>
<td></td>
</tr>
</tbody>
</table>

Students in School A used words relating to schedule 14 times, and students in School B used words relating to schedule 14 times. The number of times students in each school referred to the schedule (or used words related) was the same, suggesting that the schedule is not really on the minds of students more so in one school than it is in another.

A topic of conversation among students in both schools was the fact that their classes rotate on a daily basis (see Appendix D). When asked to describe the pace of her school day, a student in School A said:

I think it is just right. There is a lot of time for free period, time you can do homework and interact with other students, and the block, rotating schedule
allows you to miss one class per day, which helps reduce the stress. The varying schedule makes certain days go by faster than others.

When asked to comment on how much he believes the schedule contributes to the amount of homework he has each day, a student in School A said:

Dropping the class every day helps – it helps you catch up. I like the drop block each day, that way I only have to prepare for a certain amount of classes a day, maybe three or even two, depending on the schedule. Sometimes, though, I have all five classes to prepare for on a given night – that is stressful.

Another student in School A added:

I think the schedule has a direct impact on the amount of homework you get because I get much less homework on C days when I have only three classes because I could spend time the night before getting my other homework done, which leads to more free time on C days.

When asked the same question about the pace of the day, a student in School B responded by saying:

The alternating days are good in some ways and bad in others. On days that I have a lot of homework, those days are the most hectic; the lab period (100 minutes) lengthens the period, giving us more time to do work in class. If the teachers don’t vary what they do, too much time is not a good thing; it gets boring.
Another student in School B said

I think the schedule has everything to do with the pace of the day. For instance, on Mondays, it's crazy here. The shorter the classes, the more crazy it is. The longer the class period, the less hectic the day.

On the topic of how the schedule contributes to the amount of homework, a student in School B responded

I would say that the schedule effects when I do my homework, rather than how much I do for each class. We pretty much have a similar amount of homework due for each class. I have two classes on Tuesdays, so my Monday nights are pretty light – I might try to get ahead on those nights. On Wednesdays I have my three hardest classes, French, math, and history, so Tuesday nights are sort of a nightmare. I manage it though.

This qualitative data suggest that the schedule does impact the pace of the day. For students in both schools, the schedule also influences the time of the day when homework is completed. In addition, students in both schools tend to like the fact that not all of their classes meet every day. Dropping a class or two or three tends to reduce their perceptions of stress.

Faculty discussions and researcher observations in the schools. The comments among the faculty in School A vary according to their length of time in education and their familiarity with the schedule they currently operate. In School A, most senior
faculty (those at the school 20 years or more), seem to find comfort in the present symmetrical schedule, with each class meeting for 50 minutes, and each section dropping once every 6 days. As a senior faculty member in the math department said, "I don't mind the schedule. Sometimes I feel rushed to get things done, but for the most part, I like the rhythm and the pace of the day. It is comfortable." For the senior faculty in School A, comfort was a recurring theme. As one senior faculty member said, "I don't like change. I've been doing what I've been doing for 25 years. It's going to take a lot to get me to change what I do."

Juxtaposed to the senior faculty in School A are those School A faculty who have been at the school for fewer than 15 years. The tone of the conversation changed as the issue of schedule was raised with them. When asked about the daily schedule, one member of the English department who has been with the school fewer than 5 years remarked, "It's a bit monotonous. Sometimes I think I would like to experiment with longer classes just for the sake of mixing things up. I like the continuity of this schedule, but there are days when I do run out of time and would appreciate another 20 minutes to really delve deeper into a topic."

Those members of the School A faculty who previously taught at a school with longer class periods spoke from a different perspective. One teacher related, "I used to teach at a school with longer blocks than ours and I liked it. It allowed me to get into more depth with the material, even though I only met them (students) every other day. It was a boarding school, but it still worked well for retention of material and student learning did not suffer, from what I could tell. You have to change the way you teach."
The necessity to change the way a teacher teaches during longer class periods seemed to be a recurring theme among the discussions that the researcher had in School A.

In School B, the faculty were extremely positive about the daily schedule, with the exception of Mondays. Some recurring themes regarding the longer class periods were: more time to get into greater depth, stronger retention of material, and greater flexibility to teach in different ways.

This school is an interesting test case because classes vary in length from 40 to 75 to 100 minutes. The researcher had the opportunity to speak to School B faculty about the differences they experienced in classes of different lengths. The perceptions about the Monday schedule (40-minute classes) were not as positive as those about the other days of the week. While faculty members do not teach every period on a Monday, they feel rushed and seemed to have little time to do anything of a serious academic nature. As one member of the history department said, "On Mondays, I avoid new material. I use it for catch up, for review, for short quizzes, to plan the week, etc. It's good to touch base, but not a whole lot of academically serious work goes on."

For just the opposite reason, the 100-minute classes drew criticism among some members of the faculty. New to the 2003-2004 daily schedule, these classes present faculty with a different challenge. As one senior member of the faculty stated, "The 100-minute classes are too long. It's hard to keep the kids on task after an hour and 20 minutes or so."

While the 40-minute classes are too short and the 100-minute classes are too long, the 75-minute classes are the favorite among each member of the faculty in School B for a variety of reasons. They perceived that the retention (e.g. students retention of material)
was as strong in these classes as in the other classes. They also felt that meeting every other day prepared students well for a typical college class schedule. One faculty member stated:

I like the longer periods – you can go into greater depth and the fact that we see them every other day prepares them well for what they will experience at the college of their choice as those classes meet two or three times per week. They have to keep up with the material – like they do here.

Another faculty member supported the claim that retention is as strong with the longer class periods as with the shorter ones by saying that:

Students perform equally well on (sic) longer periods as they did on (sic) shorter ones. In this schedule students are challenged to keep up with their work even though they don’t see us everyday. The homework they are given is critical in (sic) retention. It has to be meaningful and appropriate for what you are trying to accomplish. If they do their homework, and the classes are meaningful, my experience has been that they retain the material as well as they did when we met our kids everyday.

Having longer class periods places the responsibility on the students to be self-learners because of the length of time they spend working with each other. While teachers need to change the way they approach teaching, in longer classes students must also become more active learners. Some students might not like the greater responsibility a longer class period places on them, but, according to some teachers in School B, it
might make them better students in the long run. As one member of the foreign language department said

For a foreign language teacher, the schedule is probably less than ideal for students and much more ideal for faculty. There is more student-to-student time on task, and less teacher-to-student time on task, which puts the learning on the students. I don’t know how comfortable the students are with that time on task with their peers, but as an educator, it is what I strive for in my classes. The more students try to solve problems on their own, the more prepared they are to not only learn and retain the material, but for problem solving in the future.

The data gathered through discussions and observations of faculty indicate some positive attributes of the 75-minute classes in School B. Faculty appreciate the opportunity to differentiate their teaching and place greater responsibility on the student for his/her own learning. In School A, most of the faculty the researcher spoke with like the traditional schedule they have, but are open to experimenting with longer class periods.

Summary

Chapter 4 presented the data collected in this investigation. Analyses of quantitative and qualitative data were made of data obtained from the School Situation Survey (Helms & Gable, 1989) (quantitative) and focus group interviews (qualitative). The quantitative data were analyzed by using SPSS 11.0 and the qualitative data were analyzed through a coding process.
Chapter 5 presents an interpretation of the data and conclusions. Insights gained through the research are presented in a manner that extends the knowledge base contained in chapter 2. In addition, suggestions are offered to school administrators for possible ways to schedule their school days in order to minimize student stress.
Chapter V
Summary, Findings, Conclusions, and Discussion

Summary

The researcher’s purpose for conducting this study was to investigate and compare the academic schedules of two independent day schools and determine to what extent those schedules influenced student perceptions of stress. School A used a traditional seven-period, 50-minute schedule and School B used a modified block schedule. With factors such as academic rigor, geographic location, and student age matched as closely as possible within the parameters of informed consent and voluntary participation, the researcher compared the influence of two different types of schedules on the perceptions of student stress. The goal, using both quantitative and qualitative methods, was to close the gap between the empirical problems of overscheduled and overstressed students and the normative condition of mitigating that stress.

The research on block scheduling and how it might relate to student stress is incomplete. This study attempted to close that gap in the research. With the prospect of stress manifesting itself in higher rates of depression and suicide in teenagers, discovering ways to reduce student stress should be a priority for school administrators. Findings that support one form of scheduling over the other provide administrators insight into how they might innovatively organize their school day in order to reduce the amount of stress students perceive. The results of this research may help produce a useful schedule model for high school administrators that would help to mitigate the stress level among their students while not diminishing student achievement.
This 2003-2004 study incorporated both quantitative and qualitative methods. The researcher analyzed quantitative data collected on The School Situation Survey (SSS) (Helms & Gable, 1989) to assess sources of perceived student stress as it related to academic stress, teacher interactions, and peer interactions. The survey also assessed manifestations from the emotional and physiological impact experienced by the student. Through focus group interviews and observations, the researcher collected qualitative data on students' attitudes and feelings about stress as related to school schedules and the pace of the school day. Faculty in each school were also interviewed to assess their perceptions of how the schedule affects their students.

Because the research and literature reviews for this study provided no strong evidence supporting one schedule over the other regarding academic achievement, the researcher operationalized the work around a null hypothesis. Given the exploratory and descriptive nature of the study, the significance level for testing was set at $p \leq .10$.

Relative to student perception, the key null hypothesis of this study was:

$H_0$: Students in School A (under the traditional seven-period schedule) perceived no difference in stress levels than did those students in School B (under a modified block schedule).

Any differences that were found were tested for significance at $p \leq .10$. The detailed analysis of data is found in chapter 4, and data details are in Appendix C.
Summary of Findings

Research question #1. To what extent do high school students' perceived demands of academic life create perceptions of stress?

The t test indicated a statistically significant difference ($p < .08$) in student perceptions of academic stress (AS) between School A ($M = 10.60$) and School B ($M = 9.45$). Students in School A perceived higher stress levels from AS than did those students in School B. The regression analysis indicated that the schedule was a strong predictor of AS. In answer to research question #1, students in School A experienced more stress related to AS than did students in School B.

Research question #2. To what extent do high school students' peer interactions and/or their classmates' feelings toward them create perceptions of stress?

The t test indicated no statistically significant difference ($p = .17$) in student perceptions of peer interactions (PI) and the stress that PI creates between students in School A ($M = 10.93$) and in School B ($M = 10.12$). While students in both schools experienced stress relating to PI, the difference was not due to the schedule. The regression analysis indicated that the schedule was not a significant predictor of stress that results from PI. In response to research question #2, PI did not create more student stress in one school than in the other, regardless of the schedule.
Research question #3. To what extent does the school schedule predict emotional manifestations of high school students' perceptions of stress?

The t test indicated a statistically significant difference ($p \leq .001$) in the perceived emotional manifestations of stress (E) between students in School A ($M = 15.80$) and School B ($M = 12.77$). Students in School A experienced more E than did students in School B. The regression analysis indicated that the schedule is a significant predictor of high E. In response to research question #3, the school schedule can be a significant predictor of high E in schools.

Research question #4. To what extent does the school schedule predict physiological manifestations of high school students' perceptions of stress?

The t test indicated no statistically significant difference ($p = .39$) in the perceived physiological manifestations of stress (PH) between students in School A ($M = 7.33$) and School B ($M = 6.90$), even though the level in School A was a bit higher than in School B. However, the regression analysis indicated that the schedule is a significant predictor of both E and PH when analyzed together. In response to research question #4, the school schedule is not a significant predictor of high PH in schools. When examining levels of E and PH combined, the schedule can predict higher levels of perceived student stress.
Research question #5. To what extent do teachers' attitudes towards high school students' create perceptions of student stress?

The test indicated no statistically significant difference (p = .71) in student perceptions of their teachers' attitudes (TI) toward them and the stress that TI creates between students in School A (M = 12.87) and School B (M = 13.21). While there was stress experienced by students in both schools related to TI, the difference was not related to the schedule. The regression analysis indicated that the schedule was not a significant predictor of the stress that occurs from TI. In response to research question #5, TI did not create more stress in one school than in the other, regardless of the schedule.

Conclusions

The importance of this study lies in the fact that there is not a body of research or evidence on the topic of school schedules and how they influence perceptions of student stress. A review of the research on how time is used in schools, both in importance and in structure, is presented in chapter 2. The frenetic pace of life that college-preparatory students lead today and how overscheduling may lead to undue amounts of stress is presented as well. Finally, the data on the dangers of stress among teenagers demonstrate that if stress in young people goes unchecked, the effects can be devastating.

Considering that students spend more than half of their day in school or participating in activities relating to school (e.g., homework, after school sports, etc.), school administrators should examine how students are scheduled during the school day. The research on how the daily schedule influences perceptions of student stress is at the
core of this research. Below is a discussion of the findings of this study and their relationship with the research presented in chapter 2.

Overscheduling. Several studies (Gubemick, 2003; Hardy, 2003; Marantes, 1999; Rosenfeld & Wise, 2000) demonstrate a push in society from both students and parents alike for students to achieve at the unhealthy expense of enjoying their childhood. Students in both schools in this study felt similarly about the extent to which their lives were overscheduled. Because they were students in two independent day schools in an already competitive environment and region of the country, the students in this study were much like those discussed in the overscheduled research section. However, students who attended schools with different types of schedules (traditional vs. block) had different perceptions regarding the pace of their day and their lives.

The focus group interview results suggested that students in School A perceived a more frenetic pace of life than did students in School B. The only day that students in School B referred to as overscheduled or frenetic on a consistent basis was Monday, the only day when all classes meet for 40 minutes each. During the rest of the week, students in School B perceived that they experienced a less frenetic and less harried school day, certainly as compared to the students in School A. Therefore, results indicate that the schedule can create a more frenetic life for students during the school day. Students in a school that employs 40- or 50-minute classes reported days that were more hectic than did students in a schedule with longer periods in the day.
Stress. Research suggests that overscheduling can have a devastating effect on students. A student who leads a frenetic and harried life can experience excessive amounts of stress. Several studies (e.g., Dawes et al., 2006; Kosten et al., 1986; Sinha et al., 2000) indicate a strong correlation between exposure to stress and substance abuse. The National Institute of Mental Health (2000) listed stress as a leading cause of depression in today’s youth. According to a 2003 report from the same agency, the strongest risk factors for attempted suicide (the third leading cause of death among teenagers, and second among college students) are depression and substance abuse. Therefore, school administrators and parents should try to mitigate the stress that students experience.

The quantitative analysis and the qualitative interview data suggested that students perceive stress to be higher at School A, the school with seven, 50-minute periods per day, than in School B, the school with a modified block schedule. The test and regression analyses indicated that students in School A perceived more stress than did the students in School B and that the schedule was a significant predictor of that stress. The focus group interview results indicated that students perceived a more relaxed atmosphere when there was more time in a class period, such as 75 or even 100 minutes. Students in School B perceived a more hurried and frenetic approach by teachers on Mondays, the only day when all eight classes meet for 40 minutes each, as compared to the other days of the week when classes are longer.

Time: Some studies (e.g. Canady, 1995; Carroll, 1994; Goodlad, 1984; National Commission on Time and Learning, 1994) indicate that increased time-on-task will
improve student achievement, reduce discipline referrals, and create a more personalized approach to learning. How school administrators structure student time contributes to creating an atmosphere of learning and focus that students need in order to achieve their full potential.

The qualitative data suggest that a day with more and shorter class periods does not provide enough time for student reflection and differentiated instruction. While that type of pedagogy depends largely on the teacher, students in School A mentioned more frequently that they needed more time than students in School B. Students in School B mentioned that they needed more time only on Mondays when there is not enough time to do anything substantive in class like there is on the other days of the week. Monday is the day when the schedule in School B is most like the traditional schedule of School A.

Scheduling. The block scheduling research relating to student achievement (as shown by GPA and standardized test scores) is exhaustive and mixed. Some studies (e.g., Bishop, 1997; Canady, 1995; Pisaia & Westfall, 1997) indicated higher student achievement, better teacher satisfaction, and a more positive school climate in block scheduled schools. There is evidence (Frager, 1997; Williams, 1999; Wrodkovitch, 1998) to support that the effectiveness of block scheduling is minimal and the empirical evidence is ambivalent regarding the academic benefits of the block schedule. One harsh critic of the block schedule identified a common-sense problem with longer classes, that students cannot retain material in large chunks of time, but offered no statistical evidence or data to support his “common sense” theory (Lindsay, 2002).
The qualitative data gathered in this study show that students perceive that the schedule does impact the pace of the day and the time of day when homework is completed, but not more so in one school than the other. Students in both schools tend to like the fact that not all of their classes meet on a given day. Not surprisingly, dropping a class or more, per day, tends to reduce students’ perceptions of stress. It is reasonable to argue that all students would welcome more time in the day.

Null hypothesis. Students in School A (under the traditional seven-period schedule) perceived no difference in stress levels than did those students in School B (under a modified block schedule).

Two aspects of the findings allow the researcher to reject the null hypothesis. First, with many of the indicators of stress (school location, academic rigor, college placement statistics, graduation requirements, school population, and type of student) controlled for, the researcher has confidence that an appropriate sample of students and schools was studied. Second, both the quantitative and qualitative research show that stress is perceived by students to be higher, in a variety of forms, in the school with the traditional schedule (School A) than it is by students in the school with the modified block schedule (School B).

Recommendations for Practice, Policy, and Further Research:

Practice. The results of this study have practical and policy implications. First, all students, especially those in a college preparatory environment, experience stress in
some fashion. Administrators need to be cognizant of that fact and not ignore it. Second, there is a pressing need for administrators to examine how time is allotted in their schools. Using the mission of the school as a compass, administrators need to prioritize decisions relating to the use of time. Third, administrators and parents have a responsibility to use time during the academic year wisely, rather than asking overly stressed, frenetic young people to give up their summer vacation to study SAT vocabulary and write college essays. This presents a most challenging phenomenon for educators. Parents are competitive with each other and want to “brag” about their child’s accomplishments, therefore pushing them to achieve. Administrators want the school profile to list the best colleges and universities, and feel compelled to push their students to achieve. Pushing a child or student to achieve and encouraging a true summer vacation may run counter to one another. Fourth, provide an atmosphere conducive to learning that includes opportunities during the day for student reflection, relaxation, and unstructured time. Given the competitive world of college admissions, students will already inherently work hard and teachers will inherently challenge students. Fifth, since research indicates that block scheduling is not detrimental to student achievement and longer periods can minimize perceptions of student stress, school administrators should investigate schedules with longer classes.
Policy. The most important policy recommendation based on this study is to seek
daily schedules that slow down the pace of the day while maintaining high academic
standards and allowing time for student reflection. Below is an example of one model
Independent school schedule, built on the results in the present study.

Table 12
Proposed Independent School Daily Schedule

<table>
<thead>
<tr>
<th>Time</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<td>1</td>
<td>5</td>
<td>2</td>
<td>6</td>
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<td>7</td>
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<td>6</td>
</tr>
<tr>
<td>1:00-2:00</td>
<td>4</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>2</td>
<td>6</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>2:30-2:50</td>
<td>Adv</td>
<td>Sch</td>
<td>Mtg</td>
<td>Clubs</td>
<td>Cl Mtg</td>
<td>Adv</td>
<td>Sch</td>
<td>Mtg</td>
</tr>
<tr>
<td>Grp</td>
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</tr>
</tbody>
</table>

The far left-hand column represents the time that each class begins and ends. Each
class is 80 minutes in length, which allows plenty of time for differentiated instruction,
varying methodology, and student reflection. The third period of the day, from 11:00 a.m.
to 12:50 p.m. is an 80-minute academic class with a 25-minute lunch block. In both
School A and School B, one half of the student body, or roughly 200 students, could eat
during the first 25 minutes of the period, or from 11:00 a.m. to 11:25 a.m. and then attend
a class from 11:30 a.m. to 12:50 p.m. The other one-half of the student body would attend
class from 11:00 a.m. to 12:20 p.m. and eat lunch from 12:25 p.m. to 12:50 p.m. If the
lunchroom does not accommodate more than 200 people then lunches could be split into
three or four periods. For example, a student could have class for 25 minutes, lunch for
25 minutes, and then report back to class for the remaining 30 minutes of the period.
While not an ideal scenario, it might be the only way to accommodate a large student population. The last period of the day is a common 20-minute period when, depending on the day of the cycle, students and faculty would alternate between advisor group, school meetings, clubs, and class meetings. This can be placed anywhere in the school day, but this researcher recommends those periods be at the end to minimize the loss of academic time for athletes leaving early for contests. School leaders need to identify their priorities, of which academics has to be at the top. Therefore, the common period is placed at the end of the day. Ten-minute passing times, rather than the usual five (or even three), allow students and faculty to take their time getting from one period to the next.

The letters across the top of the schedule refer to a day of the week. In order to fully rotate eight periods through a schedule, there has to be an 8-day cycle. Practical experience tells this researcher that rotating periods throughout a schedule is optimum for both students and faculty alike. In other words, in the above schedule “1” block meets the first period of the day once (A day), the last period of the day once (C day), during lunch once (E day), etc. Schedules could be based on 4, or even 2 days, but the fewer days, the less the rotation. The only stipulation for this rotation is that the number of days in the cycle be even. Days of the week are not used (Monday, Tuesday, Wednesday, etc.) in order to avoid a certain period in the schedule always meeting during first period on a Monday or during last period on a Friday. In this schedule, each day would be assigned a letter from A-H and then the cycle would start over again. For example, if A day were a Monday, and assuming a full 5-day week, the week would end with E day on Friday and pick up the following Monday with F day. The next cycle would begin the following Thursday with A day.
Each number refers to a period taken up by a class. Assuming that 1 block was English, 2 block was history, 3 block was music or fine arts, 4 block was science, 5 block was math, 6 block was foreign language, and 7 block was used to alternate between physical education/health and a free period or study hall, 8 block would be available for those students who choose to double up in a fine or performing art, a foreign language, or another academic major. Students who choose not to double up in an area may use that time to catch up on homework, relax with friends, or see a teacher. By not assigning lunch to a specific period of the day (e.g., Lunch 1 or Lunch 2), this schedule builds in 80 minutes of unstructured time that allows students to: a) slow down the pace of the day, b) begin the evening’s homework, c) take a music or voice lesson, or d) take perhaps take an additional class.

In response to the positive feedback from all students in the study regarding the dropping of an academic class per day, this schedule also requires that students prepare for only two or three classes per day instead of four or five as in a traditional schedule. For example, on a given night before A day a student would have to prepare for English (period 1), history (period 2), and science (period 4). They would likely not have music or art class homework, with the exception of daily practice if the student is a musician, or a long-term art portfolio if he/she is a fine arts student. Before B Day that student would need to prepare for only math (period 5) and foreign language (period 6). Seven period would be his/her physical education and health class, and 8 period, for the most part, a free period. While 8 period could be used for another academic major, many students would have it as a “free.”
While all daily schedules have challenges, the benefits of this schedule include longer classes (which slow down the pace of the day and reduce perceptions of stress), the rotation of class periods, and the flexibility of the extra period. The above sample schedule is based on the findings of the research in this study, the literature review, and the practical experience of the researcher.

Further research. Despite the fact that many different factors have been controlled for in this study, the researcher cannot overlook that the subjects are different students in different schools. Additionally, the faculty are different, the configurations of the buildings are different, and the administrators are different. Regardless of how much one controls for all the factors that create a perception of stress, the atmosphere in School A inevitably differs from the atmosphere in School B. Given the fact that the average GPA in School B (3.12) is higher than the average GPA in School A (3.01), and the average SAT score in School B (1187) is lower than the average SAT score in School A (1205), the researcher concludes that the academic rigor in School A is a bit higher. This could explain the higher perceived stress levels in School A. That fact concerns the researcher. To address this problem somewhat, a study could be conducted in the same school with similar students. The researcher recommends a cross-sectional analysis of the students in one school to control for different atmosphere and rigor inherent in different schools.

In School A, which presently employs a traditional schedule, a base-line stress test, similar to the School Situation Survey (Helms & Gable, 1989) could be administered to the entire student body during the present school year. After instituting a
schedule that includes longer classes, the same survey instrument could be administered to the entire student body and the results compared. Presumably, one would have the same atmosphere, as schools do not change much from year to year, as well as a closer representation of a similar student body from one year to the next. A similar methodology could then be used to analyze the data and see if differences in perceived stress levels exist from one year to the next.

Another area of further study might include investigating the perceived stress level of students in another school that employs 42-minute classes throughout its daily schedule as compared to School A, School B, or both. A methodology similar to that in the present study could be used to discover whether or not the students in the additional school that employs shorter classes experience more perceived stress than did those in School A with 50-minute classes.

While almost 30% of the available population participated in this study (which is much higher than the n = 25 required for reliable social science research), the researcher recommends that another study be conducted using a larger sample. Limited by both parental and informed consent of the subjects, the researcher believes that more reliable or stable results could be gained from a larger sample of students.

Discussion. Overscheduling is of concern to the researcher because of the detrimental effects it has on today's young people. Going to summer camp in order to prepare for the SAT test is troubling. While going to summer camp is great, and preparing for the SATs is necessary, doing them simultaneously creates a condition that tends to produce an overscheduled, overstressed child. What is the potential benefit of
achieving higher SAT scores or writing a stronger college essay? Usually the goal is for a student to be admitted to a more selective college because of an improved profile. However, is the more selective college the right placement for that child who might then be admitted to a school that is too rigorous academically. So, the student attends this “better” school – then what? Is the student then better prepared for life than someone who attended a “lesser” school? Maybe, but not necessarily. If a student scores an additional 150 points on the SATs as a result of tutorials and prep work, he or she still might not be admitted to the school of his or her choice. Unfortunately, a summer vacation has been spent preparing for a test, the results of which may or may not put the student in a stronger position for college admissions.

What is the downside of this overscheduling? It has the potential to lead to undue amounts of stress – the dangers of which far outweigh the benefits of a potentially stronger admissions profile. In short, this desire to overschedule our students is creating a population of unhealthy, overly stressed adolescents.

Stress is a fact of life – no one is immune to it. The researcher is not in a position to suggest how we might attempt to eliminate all sources of stress in our students’ lives. However, there is a significant difference between the amount of stress we place on our students and how they deal with the inherent stressors in their lives. The focus of this research is the former. The researcher’s focus is on how we, as educators, can mitigate the stress we place on our students. Changing the daily school schedule may be one important answer.

Not only does stress have a detrimental effect on the human body, it can also lead to depression, drug abuse, and suicide. This and other studies have shown that there is a
clear connection between the frenetic, overscheduled lives of our young people and the stress they experience. As school administrators, we cannot control every aspect of a student’s life, but we can control the pace of the academic day in our buildings. If that pace is too fast, students may become overscheduled and too stressed. If that pace is too slow, our students may become bored and lose interest. Our challenge is to strike a balance between the two, so students stay healthy and productively engaged.

For many of the adolescents in this study, the college admissions process tends to drive their overscheduled lives. Participating in after school activities to “pad” their résumé, devoting an inordinate amount of time to a sport because it may give them an “edge” in the admissions process, or going away to summer camp to prep for the SAT are means to an end – getting into the “best” college. But, what ever happened to being a kid? Playing a pick-up game of hoops after school, going to the mall, or relaxing with some friends all seem to be activities of the past. When a high school student cannot enjoy a weekend night with their friends because they have too much homework, something is wrong.

The daily schedule can clearly affect the amount of perceived stress students experience. Given that, parents have a responsibility not to overschedule their children, and administrators have a responsibility to create a daily schedule that fosters an atmosphere of student reflection while maintaining the rigor necessary for success after high school. Perhaps if parents and school administrators come together to set boundaries for our students, the scenario depicted on page 1 of this study will become, or return to being, the exception rather than the norm.
References


Appendix A

College Selectivity
COLLEGE ADMISSIONS SELECTOR

This index groups all the colleges listed in this book according to degree of admissions competitiveness. The Selecter is not a rating of colleges by academic standards or quality of education; it is rather an attempt to describe, in general terms, the situation a prospective student will meet when applying for admission.

THE CRITERIA USED

The factor used in determining the category for each college were: median admission-examination score for the 2001-2002 freshman class (the SAT I scores used were derived by averaging the median verbal reasoning and the median mathematics reasoning scores; the ACT score used was the median composite score); percentage of 2001-2002 freshman who were in the top ten percent of the class; and grade point average for admission (if any) and percent of applicants to the college who were accepted.

USING THE SELECTER

To use the Selecter effectively, the prospective student's scores should be compared realistically with the hurdles enrolled by the colleges in each category. In short, the Selecter gives a general idea of the hurdles which are expected of the applicant.

MOST COMPETITIVE

Even superior students will encounter a great deal of competition for admission to the colleges in this category. In general, these colleges require high school rank in the top 10% to 20% and grade averages of A or better. Median freshmen test scores at these colleges are generally between 650 and 800 on the SAT I and 29 and above on the ACT. In addition, many of these colleges admit only a small percentage of those who apply-usually fewer than one third.

Amherst College, MA
Bentley College, MA
Boston College, MA
Boston University, MA
Brandeis University, MA
Brown University, RI
California Institute of Technology, CA
Carnegie Mellon University, PA
Case Western Reserve University, OH
Claremont McKenna College, CA
Colby College, ME
Colgate University, NY
College of the Holy Cross, MA
College of William and Mary, VA
Columbia University/New York College, NY
Columbia University/Columbia College, NY
Columbia University/The Fu Foundation School of Engineering and Applied Sciences, New York University, NY
Cornell University, NY
Cornell University, Ithaca, NY
Colorado College, CO
Donors College, NC
Drake University, IA
Emory University, GA
Georgia Institute of Technology, GA
George City College, PA
George Washington University, Washington, DC
Hamden Muskegon College, MA
Harvard University, MA
Hilbert Hopkins University, MD

Lafayette College, PA
Lehigh University, PA
Massachusetts Institute of Technology, MA
Mandelbouy College, VT
New York University, NY
Northwestern University, IL
Parsons School of Design, Glendale, NY
Penn State University, PA
Princeton University, NJ
Pace University, NY
Swarthmore College, PA
Temple University, PA
Tulane University, LA
United States Air Force Academy, CO
United States Coast Guard Academy, CT
United States Military Academy, NY
University of California at Berkeley, Berkeley, CA
University of California at Los Angeles, CA
University of Chicago, IL
University of Notre Dame, IN
University of Pennsylvania, PA
University of Southern California, CA
Vassar College, TN
Vassar College, NY
Wake Forest University, NC
Washington and Lee University, VA
Washington University at St. Louis, MO
Wellesly Institute, NY
Wayne College, MA
Wheaton University, CI
Williams College, MA
Yale University, CT

A WORD OF CAUTION

The Selecter is intended primarily for preliminary screening, to indicate the majority of colleges that are not suitable for a particular student. Be sure to remember the admissions policies spelled out in the Admissions section of each profile. And remember that many colleges have to reject qualified students, but the Selecter will tell you what your chances are, not which college will accept you.
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Appendix B
Daily School Schedules
Daily School Schedule

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**Notes:**
- Period 1: 8:00-9:30 (90 min)
- Period 2: 9:30-11:00 (90 min)
- Period 3: 11:00-12:30 (90 min)
- Period 4: 12:30-1:00 (30 min)
- Period 5: 1:00-2:30 (90 min)
- Period 6: 2:30-3:30 (60 min)

**Subjects:**
- Math
- Science
- English
- History
- Art

**Activities:**
- Group Work
- Discussion
- Laboratory
- Individual Assignment
- Homework

**Special Notes:**
- Weekly Test on Friday
- Optional extra credit assignments
- Parent-Teacher Conference on Thursday
Appendix C

Statistics
### t test

**Group Statistics**

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Levene's Test
Regression – Model 1A

Variables Entered/Removed
- Model Variables Entered/ Removed
  1A academic stress
- Method
  Enter
- a All requested variables entered.
  b Dependent Variable: schedule type

Model Summary
- Model R R Square Adjusted R Square Std. Error of the Estimate
  1A .166 .028 .019 .496
- a Predictors: (Constant), academic stress

Coefficients
- Unstandardized Coefficients
  Model B Std. Error t Sig.
  1A (Constant) 1.713 .148 11.551 .000
  academic -2.496E-02 .014 -.166 -1.767 .080
- a Dependent Variable: schedule type

ANOVA
- Sum of Squares df Mean Square F Sig.
  1A Regression .769 1 .769 3.122 .080
  Residual 27.088 110 .246
  Total 27.857 111
- a Predictors: (Constant), academic stress
  b Dependent Variable: schedule type
Regression – Model 1B

Variables Entered/Removed
Model 1B
- peer interactions, academic stress

a. All requested variables entered.
b. Dependent Variable: schedule type

Model Summary

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a. Predictors: (Constant), peer interactions, academic stress

ANOVA

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a. Predictors: (Constant), peer interactions, academic stress
b. Dependent Variable: schedule type

d. Coefficients

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a. Dependent Variable: schedule type
Regression – Model 1C

Variables Entered/Removed
Model 1C  Variables Entered  peer interactions, academic stress, teacher interactions
Variables Removed  .
Method  Enter

a All requested variables entered.
b Dependent Variable: schedule type

Model Summary
Model  R  R Square  Adjusted R Square  Std. Error of the Estimate
1C  .238  .057  .031  .493

a Predictors: (Constant), peer interactions, academic stress, teacher interactions

ANOVA
Model  Sum of Squares  df  Mean Square  F  Sig.
1C  Regression  1.582  3  .527  2.168  .066
Residual  26.275  108  .243
Total  27.857  111

a Predictors: (Constant), peer interactions, academic stress, teacher interactions
b Dependent Variable: schedule type

Coefficients
Model  Unstandardized Coefficients  Standardized Coefficients  t  Sig.
1C  (Constant)  1.735  .223  7.783  .000
academic stress  -2.767E-02  .015  -.186  -1.889  .066
teacher interactions  1.964E-02  .014  .145  1.430  .156
peer interactions  -2.333E-02  .016  -.145  -1.479  .142

a Dependent Variable: schedule type
Regression – Model 2A

Variables Entered/Removed
Model  Variables Entered  Variables Removed  Method
2A  emotional  Enter

a. All requested variables entered.
b. Dependent Variable: schedule type

Model Summary
Model  R  R Square  Adjusted R Square  Std. Error of Estimate
2A  .320  .094  .094  .477

a. Predictors: (Constant), emotional

ANOVA
Model  Sum of Squares  df  Mean Square  F  Sig.
2A  Regression  2.848  1  2.848  12.528  .001
Residual  25.029  110  .227
Total  27.857  111

a. Predictors: (Constant), emotional
b. Dependent Variable: schedule type

Coefficients

Unstandardized  Standardized
Model  B  Std. Error  Coefficients  t  Sig.
2A  (Constant)  1.950  .144  13.504  .000
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a. Dependent Variable: schedule type
Regression – Model 2B

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b. Dependent Variable: schedule type

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a. Predictors: (Constant), physiological, emotional

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a. Predictors: (Constant), physiological, emotional
b. Dependent Variable: schedule type

Coefficients

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a. Dependent Variable: schedule type
Appendix D
Focus Group Interviews
Focus Group Questions – School A

November 14, 2003

Session 1
3:15 p.m. – 4:15 p.m.
10 Students

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or ‘just right’? Why?

A1 I think it is just right, there are a lot of time for free periods, time you can use to do homework, but it also allows you to interact with other students, and the block schedule is really good because it allows you to miss one class a day which helps reduce the stress;

A2 I think the varying schedule helps some days go by faster than others – some days I will only have three academic classes per day and some of my friends will have five, which allows me to get more of my work done during my free periods and doesn’t allow my friend to get his work done on that particular day. However, it will all even out by the end of the cycle.

A3 I like the recess that we have in the middle of the morning, it kind of breaks up the morning, instead of meeting like 4 straight classes, if you have L2. What the break does for you is allows you to have two classes, then a break, and then two more classes and then lunch, and then two more classes and then your day is done.

A4 Supplemental period at the end of the day is good too because you have time to see teachers and get some other things done before your after school activity begins. A5 My day feels pretty hectic – too over scheduled. We move from class to class, have some breaks in the morning and a long one for lunch, but for the most part, we move from class to class every 50 minutes. Sometimes I feel like when we get rolling on a cool topic in English or history, for example, the class ends. It’s hard for us to get that momentum back the next time we meet.
2. To what extent do you believe that the school schedule contributes to the overall pace of your school day?

A6 Having some free periods in the day breaks up the monotonousness of the day and gives you more time to do things, but then there are days that I feel really stressed because I meet all of my classes and the day feels rushed because I am going from class to class, meeting all five on a given day, which makes things very stressful — because I have all of that homework;

A7 It just depends on what letter day it is — the way the day works out you may have your three tough classes in the morning and then a break in the middle of the day and then one class in the afternoon and a free last period. The beginning of your day sucks, but it is worth it towards the end of the day;

A8 I remember last year I only had one free and I remember that put a lot of stress on me because I didn't have a lot of free time — I know that this year I have four free and that has really helped my stress level because I have more time;

A9 The great thing about this year is that I have a free everyday, which really helps a lot, because I don't do too much work at home, so the free gives me an opportunity to get some work done during the day;

3. Do you have options within your schedule to allow you more time during the day?

A9 Well I know for me that I have double lunch this year because I dropped art. I knew that with my course load I was going to need the time to get my work done — I will just take art next year — so yes, we do have some options;

A8 Because of the amount of extracurricular activities that I have going on after school I knew that I would need the time during the day, so I chose to drop art this year, which gives me a free period per day when I can do my work;

A10 I like the rule that says you don't have to take gym if you are in a sport, because that gives you a lot of time to do more work. I know that if I am free that I could possibly be in gym right now, so I take advantage of the time I have;

A2 Despite the schedule, I still get so much homework, so I am not sure, whether there is a direct relation... what I am trying to say is that I am not sure that more free time will reduce the amount of work that I have — regardless of the amount of time I
have during the day, I still have so much work when I go home – I think it has more to do with the teacher and the class, than the free periods that I have;
A4 I don’t think it has to do with the schedule, I think it has to do more with the class itself;
A7 It is definitely beneficial to break the days up the way we do, rotate depending on the latter day – routine, in this case, is no good;

4. What impact do you perceive the length of the class periods have on the speed with which the class progresses? Are teachers’ rushed, do they run out of time?
A5 I think it has ore to do with the teacher and the course, rather than the amount of time, I know that in some classes, we go over and then we are late for the next class. In some classes, we can get through the material in 35 minutes, so we spend the rest of the class doing problems – it some other classes, we go over because the teacher didn’t get through all of the material;
A1 In AP Chem, for instance, I don’t think we have ever gotten out of class on time, even when we have cut lunch – so I don’t know, that class seems kind of rushed all the time;
A3 For me it is so frustrating because the we have cut lunch for AP Chem into L1, which means that we are spending the entire lunch period in chemistry, which doesn’t give us time to eat;
A6 And when you know that you are eating lunch it is very hard to focus;

5. You say that some teacher keep you late, do you get a sense that some teachers see the end of a class period approaching and they rush through the last few minutes to get through the material?
A10 Yes, absolutely. If you see that the teacher is rushing, you pay less attention because you know that they are just breezing through it, and if they had planned the time better, they probably could have kept my attention throughout the class;
A8 One of my teachers begins the class slowly and then I feel as though he is rushing at the end because he wants to get through the material and doesn’t have the time he needs. We might be talking about something really interesting and then he needs to stop us literally in mid-discussion and move on to get to the material. Sometime I
feel as though he is trying to do too much — give us too much information — and that takes away from some of the really important stuff that we needed to get to.

A7. There are times, I know that X and I are in the same English class and there are times when we are in the middle of a discussion and class ends. We get so frustrated because all we want to do is stay after, and sometimes we do, and keep the discussion going. Sometimes it is so interesting, you just want to stay;

A2. English class goes by so fast, just because of the way it is run, whereas Chemistry class goes on forever, and we get out late... and it's bad;

A9. The teacher try to like plan the class around the time, but a lot of times it depends upon the students, whether they are rushed to get out and then the teachers are forced to wrap it up quickly.

6. What impact do you think that the length of the class period have on teacher methodology?

A4. Sometimes I feel as though we run out of time in our classes — we are forced to cut a discussion short, or a debate. Those days are frustrating. There are also days when I feel as though I can't wait to get out of there because the teacher has lectured for the entire class and it gets sort of boring.

A5. Sometimes, when a teacher is showing a movie, or something, there is time for the movie and that's it, so I think the time impacts the way the teacher conducts the class. If there was more time, there could be a discussion after the movie. If there is less time, may we don't see the movie, or all of it, and we end up having just a lecture or just a discussion. I feel like if there was more time, we could do more things;

A1. My best class, like the one where I learn the most is my history class because the whole class is student driven, my teacher tries to control the pace she controls it so that we get through all the material, but the debates, the discussion, etc. are student driven and I think the whole class is run much better that way;

7. Do you think that has anything to do with the teachers understanding of the length of time they have to teach the class?

A5. I think it does. When we are having a discussion about who blew up the Maine and we get on the topic of racism, the teacher will let the discussion go or about
racism because it is an important topic to discuss — more so than who blew up the Maine — we'll get the topic of the Maine soon enough, is her attitude — the discussion about racism is more important;
A3 My French teacher will do the same thing. The teacher is aware of the time and he will have a lesson planned and then we will get on a topic about French culture and keep the discussion going for the rest of the class and whatever we didn't get to we will get to it the next day. And I think that is good — it is a better way to learn;
A1 I think the teachers are good at setting the class up to discuss one particular thing and then getting on a discussion and running with it;
A10 I have a math teacher who is in his first year and one time he didn't get through the material he wanted for the test and he moved the test back a day because he felt as though he was stressed to get us the material, being more frenetic and rushed that way — how do you think we felt;

8. If teachers had more time, say AP teachers or others for that matter, within the class period, would they teach the class any differently?
A3 Every class could use more time — I think it would be different;
A8 I don't think so, do you really think so — in AP chemistry we may have an extra twenty minutes and we don't even do a lab. We just use it as extra class time. It's more information, but we are still rushed towards the end;
A5 I think it matters how much time some of my teachers have. With longer time, they could do different things, although with other teachers, having more time would be dreadful

9. So, it becomes more of the same thing, regardless of the amount of time you had?
A5 Yeah. After a certain amount of time, you have had enough information and you simply zone out looking at the clock waiting for the class to end;
A10 Sometimes, I find that my math teacher has to cram 30 minutes of work into a 15-minute space of time because he has mismanaged the amount of time he spent going over the homework.
A9 It depends on the teacher because in my math class, my teacher knew exactly what she was doing every minute of the period and spaced things perfectly – it depends on the teacher.

10. To what extent do you believe that the school schedule contributes to the amount of homework you do per day?

A7 I know I said this before, but I don’t really think it has a direct effect on it, because despite the amount of time you spend in class you are still going to get the same amount of homework – I guess if they gave you an extra 30 minutes in each class you would learn more, but you would get more.

A4 I think it has a lot more to do with the course itself, then how much time you have in class;

A2 Dropping the class every day helps - it helps you catch up

A6 Yes, I like the drop block each day, that way I only have to prepare for a certain amount of classes a day, maybe three or even two, depending the schedule.

Sometimes, though, I have all five classes to prepare for on a given night – that is stressful. My entire day is thrown off because no matter what I do during the day, I am thinking about the fact that I have all five classes to prepare for the next day. I may be able get some stuff done during the school day, but sometimes not.

11. Does that affect the amount of homework you do each day or simply when you do that homework?

A6 It effects when because if you are so stressed out and you have so much homework to do and you are up until 1:00 in the morning still doing homework and then you realize you do not have math the next day, you can save that homework for the next day during school;

A4 I think there is at least one assignment a night that students can “blow off” because they don’t have time to do it and save it for the next day during a free period or something. Teachers are pretty understanding if you don’t finish your homework if you have bags under your eyes.

A1 Some teachers are understand – most are not;

12. Does anybody think that if the schedule were altered to have a 90-minute class that the amount of homework they did for that class would be less?
A2 I think it would be worse. I think teachers like the idea of you doing your homework at night outside of class. I don’t think it is like, we didn’t finish this in class so you need to do it tonight anyway, I think they had it planned anyway.
A4 If there was a 90 minutes class, I don’t think that would benefit anyone because no one could concentrate for ninety minutes.
A10 I think the schedule has a direct impact on the amount of homework you get because I get much less homework on C days when I have only three class because I could spend time the night before getting my other homework done, which leads me to have more free time on C days.

13. Do you experience less stress on C days - or the days when you have more time?

A10 Much less. Everyone here has double lunch and on those days, when you have two periods to eat lunch, the stress level goes down so much - with that extra 50 minutes, the entire day seems so much more relaxed.
A5 I definitely feel less stress on the days when I have fewer classes – and less stress on the nights I have less homework – it’s no secret.
A5 I don’t have as much of a problem with the amount of work, it’s the difficulty. If something is really hard, I get stressed as to whether I can do it. Once I realize I can do it, it doesn’t matter how long it takes me.

14. Do you talk about stress a lot amongst yourselves?

A5 Yes all the time – I actually don’t talk about it with my friends because I feel as though it alleviates it more not to talk about it;
A9 When people come out of a class they may say, “oh I just took a really hard test or I have a lot of homework tonight or I’m so stressed out.” It’s like the first thing people talk about;
A10 I have a friend who stresses out about everything - tests, papers, quizzes, homework checks - everything. She can’t enjoy herself on the weekend because she has so much to do and feels as though she needs to do it now or it will not get done and she will continue to stress out.
A3 I have a friend who I can not believe is not burned out by now they are so stressed.
A: This place is pretty stressful – a lot of us feel burnout every once in a while.

15. That is an interesting word you just used... burnout: Do you feel as though the schedule that you are under contributes to burnout?

A1 Only those days in which you meet all of your classes on a given day – but you can't really change that... it is inevitable. There are days when you just have to deal with it. On those days when you have all of your classes and you are more stressed out, you can just look forward to those days when you don't have as many classes and be excited about that.

A3 The burnout time is usually before exams – before mid-terms and finals. The problem comes when you are studying for your tests coming up and you are still doing all of your homework. That's when burnout happens.

A10 As far as scheduling is concerned on C days, the days I had less classes, I was more alert the next day – I didn't have as much of a problem recharging my battery for the day that I do on days when I meet 4 or 5 of my classes.

A6 It's also frustrating when you work all week and then you have so much work to do on the weekend and you feel as though I just put in all of this time during the week and now I have so much to do on the weekend. Weekends are supposed to be free – sometimes they are not.

16. Do you see any relationship to the school schedule and the amount of homework you have on the weekend?

A6 Only if you meet all of your classes on Monday – and if you don't have all of your classes on Monday than you can leave some of your work to the next night, if you choose;

A5 I know that on Monday, I only meet three of my classes, so I can get all of my homework done in all of my classes or I can save some of it for Monday night, which means I have a stress free weekend;

A4 It absolutely depends on the classes you have on Monday. If you don't meet all of your classes, you aren't as stressed because you don't have as much work to do. If you meet all of your classes, you have a pretty stressful weekend coming.
Session 2
4:15 p.m. – 4:45 p.m.

2 Students

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or ‘just right’? Why?

A1 I think it’s pretty hectic. Things move pretty fast. There are some built in breaks like recess and lunch, but for the most part, I would say that form the time I get up in the morning until I go to bed, my day is pretty hectic.

A2 I would agree. I look forward to the breaks or the free periods because it is a time when I can take a step back and relax. There isn’t a lot of time to do that here. On any given day you may have all five of your academic classes and little down time. It makes the day go pretty fast, which is good, but sometimes it would be helpful to take a breath at some point.

2. To what extent do you believe that the school schedule contributes to the overall pace of your school day?

A2 I think the schedule has a lot to do with the pace of the day. When my schedule has a study hall in it or a free period, the day slows down a little bit, which I like.

When I don’t have any breaks, I seem to be bouncing from class to class, pretty quickly.

A1 I would say that the schedule has a lot to do with how fast or slow the day moves. The schedule even dictates how much work I have to do the night before. If I meet all my classes, I have a lot of work, if not, I don’t.

3. Do you have options within your schedule to allow for more time during the day?

A1 You can’t choose how many free periods you have – at least not as a sophomore. We actually have an extra class that other grades don’t have – Citizenship. It takes up two blocks that would otherwise be free during the cycle. I imagine that when those are free it allows for more time to do what you need to. Right now, we don’t have too many choices.
A2 I’m a junior, so the schedule is fairly flexible. I mean you still have to take your five majors, art, and PE. I have one free block each day this semester. When that period drops, my day is pretty hectic – I don’t have any down time, except lunch. I like the days when I have a free block and one of my majors drops – my day is much less crazy then.

4. What impact do you perceive the length of the class periods have on the speed with which the class progresses? Are teachers’ rushed, do they run out of time?

A2 It depends on the teacher. I have some teachers who will always run out of time, regardless of how long the class. I have others who will inevitably have extra time at the end of class. I don’t mind running out of time in some of my classes because the teacher may be doing on, and it’s great to have the opportunity to get out of there. Other classes, like those where great discussion are going on, I find myself not wanting to leave. That is when I get frustrated. It’s interesting to notice how much some teachers may speed up towards the end of the class when they notice they are running out of time.

A1 I notice that sometime, too. With about five minutes left in class, teachers begin to look at the clock to see where they are, and then they try to speed up to get finished. Some of us check out at that point. Sometimes I feel as though if we had more time, teachers would be able to do more – other times I feel as though no matter how much time there is, the teacher will always run out of time.

5. You say that some teachers keep you late, do you get a sense that some teachers see the end of a class period approaching and they rush through the last few minutes to get through the material?

A1 Yeah, absolutely. As I said earlier, if you see that the teacher is rushing, you pay less attention because you know that they are just breezing through it, and if they had done a better job pacing themselves, they could have kept our attention better.

A2 I have a teacher who begins the class at a comfortable pace and then I feel as though he is rushing at the end because he wants to get through the material because time is running out. We might be talking about something really interesting and then he needs to stop us literally in mid-discussion and move on to get to the material.
Sometimes I feel as though he is trying to do too much – give as too much information – and that takes away from some of the really important stuff that we needed to get to.

6. What impact do you think that the length of the class period has on teacher methodology?
A1 I think it has a lot to do with it. Some of my teachers use the time well – others do not. In history, we may be having a great discussion or debate that has to be cut short because we ran out of time. A teacher may lecture for forty minutes and then allow us to discuss. If we had more time, we could have that lecture to get the material and then have a discussion or an activity based on the topic of the lecture. Now, we have to pick up with the topic the next day. It’s hard for continuity.
A2 I agree. Some of my teachers do a good job, like my Spanish teacher, of doing different activities during one class, others, like my math teacher, do not. They do the same thing every day.

7. Do you think that has anything to do with the teachers understanding of the length of time they have to teach the class?
A2 For some of them, yes. For others, I don’t think so. If some of my teachers had more time, they would do more different things. If others had more time, they would do more of the same – which would not be good. I do feel that if some teacher had more time they would use the time well – I think it depends on the teacher.
A1 Definitely. It depends on the teacher. If my Spanish teacher had more time, I think she would use the time to our advantage – different activities, to keep us moving and paying attention. It’s easier for me to pay attention if things are switched up a lot. If a teacher uses a period to lecture straight through, I struggle to keep my attention the whole time.

8. If teachers had more time, say AP teachers or others for that matter, within the class period, would they teach the class any differently?
A2 It depends on the teacher. The better teachers would teach differently with more time. The others wouldn’t.
A1 It depends. For me, most of my teachers won’t change what they do.
9. So, it becomes more of the same thing, regardless of the amount of time you had?
A1 For the most part, yes.
A2 Yes.

10. To what extent do you believe that the school schedule contributes to the amount of homework you do per day?
A1 I would say that it depends on what classes you have the next day. I have about 45 minutes to an hour of homework per subject. So, if I have three classes the next day, I have anywhere from 2-3 hours of homework that night. Some of that I can get done if I have a free period or lunch. If I have four classes the next day, I have to spend the day before in school. If I have five, I don't spend as much time on each subject.
A2 I agree. I like the free time during the day because, if I am organized, I can spend some time during the day getting stuff done. If I'm not as organized, I have to spend time during the day getting my homework done for that day. I don't like to do that, but sometimes I am forced to because of my schedule the day or night before.

11. Does that affect the amount of homework you do each day or simply when you do that homework?
A2 I have, an average, the same amount of homework to do on a given day or certainly over the week, depending on larger assignments that I have to do. The schedule can alter how much of that homework I have to do at night versus during the day. If I take advantage of my time I can get a lot done during the day if I have free time.
A1 I think the schedule determines when I do my homework, not the amount.

12. Does you think that if the schedule were altered to have a 90-minute class 3 x /cycle that the amount of homework they did for that class would be less?
A1 I'm not sure. If we met less frequently during a cycle, maybe the teacher would want to give us more work in between classes, so probably.
A2 I would say it depends on how much work we got done in class. Sometimes I think teachers give us homework to keep us busy, which is stupid. I think homework should have meaning – it doesn't always. But, if we only met every other day, we
would have more time to get that assignment done, which would be good, I guess.
The more things are spread out, the less stress or pressure I feel.
A1 Me, too.
13. Do you talk about stress a lot amongst yourselves?
A1 Yea. I think this place and our society creates it. Maybe it’s intentional, maybe
it’s not, but for the most part, we talk about it. We may say, “I’m so stressed, I have a
ton of work to do.” Or, “I meet all my classes tomorrow, so tonight is going to suck.”
A2 It’s a topic, sure. Whether its family or friends, or schoolwork, or whatever, we
talk about it. We don’t talk about what we can do about it, but it is something we talk
about.
14. The other group brought up the notion of burnout. Do you guys feel as
though the schedule that you are under contributes to burnout?
A1 It could. As I said in the beginning, from the time I get up in the morning until I
go to bed at night, my day moves pretty quickly and I am exhausted by the end of the
day. Could I get burned out as a result of that? Probably. I find that if I slow down, I
don’t feel as much pressure, but then I don’t get done what I need to get done. That
creates bigger problems later.
A2 I think it does. I’m not sure what can be done about it, but there is certainly a
feeling of stress around here.

Focus Group Discussion – School B
January 21, 2004

Session 1
8:45 a.m. 9:15
1 student

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or
‘just right’? Why?
   • Depends on the day – if i have all classes on one day, it gets pretty crazy – but for
     the most part, I would say are days are just right. Tuesday: I have my hardest
class – Chemistry, and then English and gym; Wednesdays I have one free and
then all the other classes. When the free period is depends on how long it is – anywhere between 75 minutes and 2 hours;

• The alternating days are good in some ways and bad in others; on days that I have a lot of homework, those days are more hectic; the lab period this year is different – it lengthens the period, giving us more time to do work in class;

• Last year's schedule, without the 100 minute periods, was better; filling one free period with a lab is better than having 100 minute periods – if the teachers don’t vary the things they do, too much time is not a good thing – it gets boring;

• The alternating weeks gets confusing;

2. To what extent do you believe that the school schedule contributes to the overall pace of your school day?

• Mondays are the most hectic because we meet every class period for forty minutes – and we have less time to get from class to class;

• I would perceive Monday as the most hectic day of the week because all classes meet, for forty minutes and there is less time to get form class to class;

• During an average forty minute class, it takes 5-10 minutes to settle down, we talk about the week and get an assignment sheet, then we do as much work as we can and then we leave – it's crazy.

• When it is confusing, it is stressful.

3. What impact do you perceive the length of the class periods have on the speed with which the class progresses? Are teachers' rushed, do they run out of time?

• It depends on the class – I find history boring, so a seventy-five minute history class is deadly for me – I like Orchestra, I play the violin, so that period is really fun – if the period is longer, it tends to be less stressful, less hectic;

• Sometimes the teachers teach during the lab period, sometimes they use it for labs, sometimes they use it for tests, sometimes they let us go – it depends on the teachers;
4. What impact do you think that the length of the class period have on teacher methodology?
   • The seventy-five minute class is slower, a bit slower – but we can still get more done than in a forty-five minute class – in English, for example, you can have better discussion, more activities – I appreciate having more time.
   • Teacher methodology depends on the teacher – some teachers use the lab period for activities, which is great. In Chem, for instance, we take a daily quiz, go over it, review the homework from the night before, do a new lesson, and have time for practice exercises – having the extra time is good;
   • The extra lab period, in certain classes depending on the teacher, is fun and it slows down the period – it doesn’t seem as rushed;
   • It’s a little more interesting;

5. Does that affect the amount of homework you do each day or simply when you do that homework?
   • Some nights are busier than others, depending on the classes I have that day. The night before I have three classes, I have a busy night of homework – the night before I have two classes, it is not as busy. I also use my free to my advantage – one free on Wednesday and Friday – period 7.

6. How does the amount of material coverage differ from the material covered of friends in other schools?
   • We cover more – we are moving faster and they have 40-minute classes – public schools;
   • Stress level is medium – could get high – workload and parental expectations;

Session 2
9:30 a.m. – 10:10

Three Students

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or ‘just right’? Why?
A1 I would say it is just right. Some days it is a bit too fast, some days, a bit too slow – but for the most part, it is just right.

A2 There are times of the year that it is crazy, around exams, for example – Mondays, when we meet all of our classes – but for the most part, the day is pretty normal;

A3 I think, overall, it is just right.

2. To what extent do you believe that the school schedule contributes to the overall pace of your school day?

A1 I think the schedule has a lot to do with it. For instance, on Mondays, life is crazy here, because we meet all of our classes, for forty minutes, have five minutes to change classes, and no time to learn anything. We hurry from class to class – it’s crazy.

A2 Yea… then the rest of the week, life returns to normal and the pace of the day slows down, because the schedule is 75 minute classes and 100 minute classes – on those days, it’s more bearable and slower;

A3 I think the schedule has everything to do with it – the longer the class periods, the less hectic the day.

3. What impact do you perceive the length of the class periods have on the speed with which the class progresses? Are teachers rushed, do they run out of time?

A1 On Mondays teachers are rushed and they inevitably run out of time, on the other days, that doesn’t happen as much;

A3 On the days with 75 and 100-minute classes, we might be forced to cut a discussion short, but the teacher almost always gets through the material in a relaxed time frame,

A2 I think it depends on the teacher – if a teacher is organized and has control over the class, then it seems to run more smoothly, but we have teachers who don’t necessarily run the best classes, so it always seems as though we are rushing to get done with whatever it is we need to get done;

A1 Yes, I agree.

4. What impact do you think that the length of the class period have on teacher methodology?
A3 I would say it has a lot – when we are in a 40 minute class, teachers may only lecture, or only give us a quiz – sometimes it takes us ten minutes to settle and get into the class, five minutes or so to wrap it up at the end, and only 25 minutes in between – sometimes I find myself asking, “what’s the point?”

A1 Yea, on the longer periods, we may do different things or, what do you call them – activities during the class. Maybe he starts with a fifteen minutes lecture, then we do some group work, watch a short video, and have a discussion – all in the same class period – those kinds of classes go pretty fast, and I come out of there having learned a lot.

A2 No doubt – when activities vary, the class goes quicker and I find that we learn more.

5. Does the schedule affect the amount of homework you do each day or simply when you do that homework?

A1 I would say the schedule affects when I do my homework, rather than how much for each class – we pretty much have a similar amount of homework due for each class. But, if your class doesn’t meet the next day, you don’t have to do that class worth of homework that night.

A3 I have two classes on Tuesdays, so my Monday nights are pretty light – I might try to get ahead. Wednesday, I have more academic classes, my three hardest (French, Math & History) Tuesday nights, and Thursday nights, are not good. I manage it though;

A2 Yes, and my schedule is the opposite as Shari’s so my tough nights are Mondays and Wednesdays – and the weekends because we have all of our classes on Monday.

6. How does the amount of material coverage differ from the material covered by friends in other schools?

A1 We cover more – we are moving faster and they have 40-minute classes – public schools;

A2 We cover much more;

A3 Yup – a lot more

7. How would you describe the stress level at this school – low, medium, or high?
A1 Stress level is medium – could get high, with the college process and parents;
A3 I would say medium – some days it’s pretty low – other days it’s pretty high, but for the most part, I would say medium;
A2 Low to medium.

Session III
10:30 a.m. – 11:15 a.m.
Three Students

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or ‘just right’? Why?
A1 Most of the time, just right, but sometimes it goes really slow, especially when the classes are too long;
A2 Each day is just right, but each individual class could like take forever, like the longer periods, Ugh And when your done with the 100 minute block, your like, OK, I’m done with that period, I only have one more left, so that’s cool;
A3 I think on average, the pace is just right. Sure, you know, there are times when the days seems hectic, and others when it seems like it will never end, but for the most part, I would say the pace is comfortable.

2. Is there a difference that you perceive on Mondays as opposed to the other days, when the classes are shorter?
A2 Yea. I hate Mondays – Mondays are the longest days of the week – it feels like they go forever. Like you think your done and you have like four periods left;
A3 Mondays are a nightmare. Not only do you have to do five classes of homework over the weekend, but you meet all eight periods on Mondays for forty minutes each. I can’t even get into my free period that lasts forty minutes. By the time we settle, we get up and leave – and we only have five minutes to pass from class to class – it’s a very stressful day.
A1 Also on weekends it’s a lot more stressful because you have to do all your homework because you meet all of your classes. On the days we don’t meet every class, the night before is less stressful;
3. So you meet every one of your classes on Mondays – what are your classes like on Mondays as opposed to the other days?
   A2 Mondays is basically what you are going to be doing for the rest of the week – like you really don’t do a whole lot of work, it’s kind of a review for what you are going to do for the rest of the week, you hand in your homework, and... yea. You don’t really rest on Mondays either because it is not a long period;
   A3 Yeah, as I said, classes are short and quick – you going from one place to the other – with little time to sit and relax or sit and learn or discuss, like we can during the 75 or 100-minute classes
   A1 Some teachers teach a little bit, like just review;
4. So is it safe to say that there isn’t really a lot of academics going on Mondays, in relation to the other days when you have the longer periods?
   A1 Yes.
   A2 In each class, yea, but in all, it’s a lot because you meet so many classes. When every class does a little bit, it ends up being a lot;
   A3 I would say it depends on the teacher – sometimes we have a lesson to learn, most days we do not.
5. When you get to the end of a Monday, as opposed to any other day of the week, do you feel more drained? Physically, do you feel as though, “Wow I can’t believe that day was so long?”
   A1 It drains me a little bit more.
   A2 Yes;
   A3 I would say so, yes. It’s draining not because of the material that we learn, it’s different than that. It’s draining because we are constantly in motion, changing classes, what is it, seven times? Yeah, seven times – changing classes seven times is a lot more than three or four times – it makes things a bit more crazy, but not too bad.
6. When you take a look at what happens in each class, do the teachers teach differently when they have the 75-minute class vs. the 100-minute period vs. the 40-minute period? Do you see a difference in how teachers teach?
   A3 I think so, definitely. We do more different things in the longer classes – group work, presentations and so forth. I like it because while the classes are longer, they
seem more interesting because we do different things. I have had classes where teachers just lecture – those are deadly. If the teacher mixes it up, the longer classes are good.
A1 Well for English, during the 40-minute periods, we’ll get stuff back, maybe review our homework, prepare for the week. But for the 75-minute class we’ll take notes about a book we’re reading, have a discussion. And then for the 100-minute period we’ll do the same thing as the 75, but maybe talk a little longer, then watch a bit of a movie.
A2 For the longer classes, teachers don’t seem as rushed to get back on topic – during the shorter classes, it seems as though less time is wasted, and that makes it more stressful. Whereas during the longer periods, teachers are a bit more relaxed and not as rushed to get things done – I like the longer periods more. They also give us a ten-minute break when it’s a longer period.
7. What about preparation for class. For instance, Monday nights... do you find yourself having more homework on a given night than another? Do you have the ability to spread out your homework throughout the week?
A2 I have a free each day, so I’m able to get a lot of my homework done before I get home and if not, I usually don’t have too much left. Last year I had a schedule where I had all my academic classes on one day, so Monday night I would be up until 12 or 1 finishing up my homework, but on the other Tuesday and Thursday nights it would be a lot more relaxed, because I wouldn’t have any academic classes on Wednesday and Fridays. I wouldn’t really try to work ahead, I would just do it on a free or something. So while it was really busy one night, it was not as busy the next night.
A3 It depends on the schedule.
8. Did you feel your stress level go higher when you had that extra work to do?
A2 Yea, I was tired and stressed – wondering if I was going to finish it. The stress would go down one day and then go up the next – like a roller coaster. This year, I use my frees to just relax and use them for myself, maybe get some work done.
A3 Absolutely.
A1 Yes. I like having the classes spread out so my homework is spread out. It helps me balance my time, and spread things out – creating less stress.
9. Are your friends taking similar type courses that you are taking? What about the amount of material they are covering as opposed to you guys – do you talk about that at all?
A1 I think it is pretty much the same amount of material. We do more papers, like two or three a week, whereas in public school, we didn’t do as much.
A2 I think we are covering a bit more – I love having the frees because it allows me to relax. They meet all eight periods everyday, they get so jealous because they don’t have the free periods and we do – it’s great. They don’t have that and they are all stressed out. The down time is what I like about this school.
A3 I think the down time is helpful, especially when the period is 70-minutes. I can really get a lot of work done in school, which allows me to have a less stressful night at home – or allows me to get to bed earlier, which is always good.

10. So you were on a schedule last year where you met your classes everyday? Can you compare the two?
A2 This one is so much better. Because we have more time during the day to spend in class discussion, or speak with a teacher, or do different activities in a class. Meeting for forty minutes a day is pretty hectic – we can’t get as much done.

11. Do you guys talk about stress a lot at kids?
A2 Not except around tests – we don’t sit around and say we are stressed every day of our lives, but it really seems to hit around test time – but no, we don’t talk about it too much.
A1 The only time I talk about it is when my parents bring it up, but for the most part, we don’t talk about it.
A3 The stress we talk about is more social.

12. When you are stressed out, what causes it?
A2 Yea, friends, sometime schoolwork, maybe competition
A1 My stress centers around a busy schedule – on days that aren’t as busy, I am less stressed – more relaxed.
13. You had said that you like when you are in season, making your schedule more busy. Why is that?
A2 I just don’t like not having a schedule. I like coming home after a sport and getting to work – if I don’t have anything after school, I’ll come home and fall asleep, procrastinate, and not spend quality time on things I should – because I know I have a limited period of time during a sport – that’s why I like it – it forces me to work.
A1 Yea, I feel the same way. I appreciate the structure that my schedule provides me. Believe it or not, when my schedule is more crowded I feel more stress, by the stress actually turns into a catalyst for me to get my work done – it’s kind of like creative stress helps me get my work done.
A3 Yea, I tend to be more productive when I’m busy – it’s about a balance. You don’t want to have so much that you don’t feel you can get it done, you also don’t want to have too little that you feel like you have too much time on your hands to procrastinate.

Session IV
12:00 p.m. – 12:30 p.m.
Three Students

1. Would you describe the pace of your school day as ‘too fast’, ‘too slow’ or ‘just right’? Why?
A1 I think it’s pretty good. I like the idea of having four periods a day. I get more of a learning experience because of the longer periods.
A2 I like the pace – it’s comfortable. The longer periods slow the day down. Not only does it allow for more discussion in class, but more free time during the day.
A3 I think it’s just right, except for Mondays.

2. Yes, I understand that your classes are shorter on Mondays. Is there a difference that you perceive on Mondays as opposed to the other days, when the classes are longer?
A3 Yea, I hate Mondays – Mondays are the longest days of the week – it feels like they go forever. Like you think your done and you have like four periods left;
A1 Mondays are rough. Not only do you have to do five classes of homework over the weekend, but you meet all eight periods on Mondays for forty minutes each. By
the time we settle, we get up and leave – and we only have five minutes to pass from
class to class – it’s a very stressful day.
A2 Mondays, for me, are a little bit slower. It helps because it is the first day of the
week. I am used to it. Last year I was in public school and we met every class every
day, so I don’t mind Mondays. But, the other days are much better – and easier.
Easier in terms of how much homework you do for each class, and stuff like that. I
don’t have to bring as many books to school on those days – it’s just easier.
3. Do you find as though you feel more rushed on Mondays when you go from
class to class to class than the other days? Do you feel more frenetic on Mondays
than other days when classes are longer?
A3 The fact that we only have five minutes in between classes makes it seem rushed,
but the day as a whole feels like it is longer, like it will never end. But yeah, it helps
to have the weekend because you have the time to prepare for all eight classes that
you meet on Monday, as opposed to not having to prepare for that many on the other
days of the week.
A2 I think Mondays are a mess. We don’t get anything done, as opposed to the rest of
the week, when classes are longer.
3. So you meet every one of your classes on Mondays – what are your classes
like on Mondays as opposed to the other days?
A2 Pretty much all of your Monday classes are the same. Your teacher will go over
the homework, tell you what’s happening for the week, and maybe teach or lecture a
bit, but by the time we settle down, there isn’t much time for anything.
A3 Yeah, we rarely learn anything new on Monday. It’s more like a review, preview
type of day.
4. So is it safe to say that there isn’t really a lot of academics going on Mondays,
in relation to the other days when you have the longer periods?
A3 Yes.
A1 In each class, yeah, but in all, it’s a lot because you meet so many classes. When
every class does a little bit, it ends up being a lot;
A2 I would say it depends on the teacher – sometimes we have a lesson to learn, most days we do not.

5. When you get to the end of a Monday, as opposed to any other day of the week, do you feel more drained? Physically, do you feel as though, “Wow I can’t believe that day was so long?”

A1 Definitely. I am much more exhausted on Monday afternoons and evening that any other day of the week – due primarily, I think, the school day that I just went through.

A3 Ditto;

A2 Same for me. Changing classes all those times makes it difficult for me to keep up sometimes.

A3 I think Mondays are more draining than any of the other days because we are constantly in motion – we don’t have a whole lot of time to sit around. I can’t even get into my free that day because it is so short.

6. When you take a look at what happens in each class, do the teachers teach differently when they have the 75-minute class vs. the 100-minute period vs. the 40-minute period? Do you see a difference in how teachers teach?

A1 I do, yes. There are more options available to a teacher in a class of 70-minutes than 40-minutes. They can have a small lecture, do a lab, and discuss it in the 100-minute classes. In the 40-minute class, there isn’t much that can be done, except hand stuff back, review some stuff, and prepare for the next week.

A2 I would agree with that. There is definitely a difference.

7. What about preparation for class. For instance, Monday nights… do you find yourself having more homework on a given night than another? Do you have the ability to spread out your homework throughout the week?

A3 Free periods allow me to space out my homework, but for Monday, I have to do everything. The rest of the week, I can space it out, which makes things less crazy and less hectic.

A2 On the days I have fewer classes, the night before I have less work to do. It all works out, though. By the end of a given week, I do the same amount of homework as my classmates.
8. At the end of a day, would you say your stress level is low, medium, or high?
   A1 I would say low.
   A2 Low to medium.
9. What makes it...what would make it high?
   A1 If I have a lot of homework and sports after school, my stress level would increase.
   A3 More homework – tests and quizzes.
   A2 A lot of stuff after school, like homework or activities.
10. Are your friends taking similar type courses that you are taking? What about the amount of material they are covering as opposed to you guys – do you talk about that at all?
    A1 We don’t really talk about school that much.
    A3 Yes. We really don’t talk about it that much.
    A2 We talk about it. They don’t seem to cover as much as we do. I always find that my friends are a bit further behind us in most subjects, especially history.

Session V
1:00 p.m. – 1:45 p.m.

Two Students

1. Would you describe the pace of your school day as 'too fast', 'too slow' or 'just right'? Why?
   A1 I think it's pretty good. We had a different schedule last year. We didn't have the extended period last year. I kind of don't like that. Last year, when they just had the 75-minute, it was better.
   A2 Yeah. Teachers don't really use it for what it's for – to give extra help. They just teach through it. So it's like your in class for every and by the time an hour comes up, you're totally not listening you're just kind of sitting there.
2. So for you guys, does an hour seem like the right amount of time for a class?
   A1 First period of the day is like a marathon – it's a nightmare. It kills me for the whole rest of the day.
A2 Yeah.

A1 If I have first period free I am like too relaxed for the day, or if I have like math, it kills me. It's hard to focus on other classes after that.

A2 For me, not having that flex period that we had last year is a killer – not having the extra time. What they did this year was made the flex time 25-minutes so teacher now feel compelled to like use it, so we don’t have a lot of down time. Some teachers will give us a break so that’s cool.

3. Is there a difference that you perceive on Mondays as opposed to the other days, when the classes are longer?

A2 The difference is your backpack. Is much heavier on Mondays than any other day of the week. Mine is jammed and my binder: break – it sucks.

A1 Pace of the day is way too fast and you get nothing done. Most teachers, they hardly teach. Some people come to class late because they are meeting with a teacher, they sit down, try to figure out what is going on, which isn’t much – it’s a mess.

A2 You get your assignment sheets for the week. But the worst part is you have to do all your homework on the weekend for Monday.

4. When you get to the end of a Monday, as opposed to any other day of the week, like, how do you feel?

A1 Tired. I can’t even do my work for Tuesday. I know on Monday, I go home and I take a two hour nap. I don’t do that on any other day of the week. Like ‘cause I need that or I’d be dead.

A2 The sports I do after school help me forget about school work, but I am still pretty drained. You kind of want to go home and relax, but you can’t. You just have to deal.

5. When you take a look at what happens in each class, do the teachers teach differently when they have the 75-minute class vs. the 100-minute period vs the 40-minute period? Do you see a difference in how teachers teach?

A1 Teachers definitely like teach rower in the longer classes. It’s a lot more relaxed – the longer periods. On Mondays, you come in and there are notes already on the board. On the other days, you come in and the teachers take their time getting into it, but once they do, you can really explore a topic, without worrying about the end of
the class coming too quickly. There are more options available to a teacher in a longer class than a shorter one.

A2 The day feels more relaxed when the classes are longer – except French – I hate French. It doesn’t matter how long that class is, it is still going to feel too long.

A1 I think it all varies with the teacher. I just had a history class that was real slow, but I know I have math coming up and I better pay attention – for the entire time. That class, moves pretty quickly.

A2 That’s what I liked about last year and the 70-minute classes – you don’t get drained from one or the other - they went kind of quick, but they weren’t too draining. They didn’t have to slow it down or speed it up towards to end or pick it up another day. They were almost the perfect length and went at a nice consistent pace.

A1 Also, like on Mondays we never have any time to like talk to friends or just relax – you have like two seconds to get to your next class so it’s like non-stop.

6. What about retention of material? If you meet your class on Tuesday and don’t meet them again until Thursday, do you feel as though you can remember what you did on Tuesday when Thursday’s class comes up?

A1 It’s OK, you don’t get bored of it or anything. If you don’t remember something, you can ask a friend and it will come back pretty quick.

A2 I wouldn’t say it’s the two days that are a problem, because you are kind of like in mid-week and stuff. But, if you have a four or three day weekend, you can forget a lot of stuff coming off of that.

A1 But between the days, it’s fine because most people do their homework the night before, so you keep in contact with the work, which helps. So, you are never too far away from it. If you do your homework in advance, you might like forget, but if you do it the night before and it is reviewed the next day, there really isn’t an off-day from the language if you plan things right.

7. Are homework assignments longer? Because you have two days in between?

A1 Yes. They expect you to work for two days, but you don’t. You do your homework for two days in one day – it goes by quicker that way.

8. At the end of a day, would you say your stress level is low, medium, or high?

A1 Fairly low.
A3 Pretty low on average.
9. And what makes it...what would make it high? What creates stress?
A1 Staying up late, doing a lot of homework, maybe research papers, finals.
A2 Mondays.
10. Are your friends taking similar type courses that you are taking? What about the amount of material they are covering as opposed to you guys – do you talk about that at all?
A1 Yes, we talk about it sometimes and I find that sometimes we cover even more. I know people that go to other schools and meet each class every day and they won’t work there for the amount of time that we work here, because it takes them longer to get settled in and whatever. Here, once you are in your chair, you know you are working for 75-minutes or whatever – there’s no question about that – and we work. Once you get into a rhythm you learn more.
A2 Yeah, that’s true. I feel like once we get going, we really get a lot done.
11. I’m trying to determine whether you feel less stress on Tuesday-Friday than you do on Mondays because classes meet for 48-minutes and you meet all of your classes.
A1 I would say so, yes. Definitely, Tuesday through Friday are less stressful than Mondays. Things move at a slower pace, but it isn’t monotonous.
A2 Yes. There is a less stressful feeling on those days.