THE EFFECTS OF HIGH SCHOOL FLEX BLOCKS ON STUDENTS AND TEACHERS

by

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A Paper

Presented to the Gordon Albright School of Education

In Partial Fulfillment of the Requirements

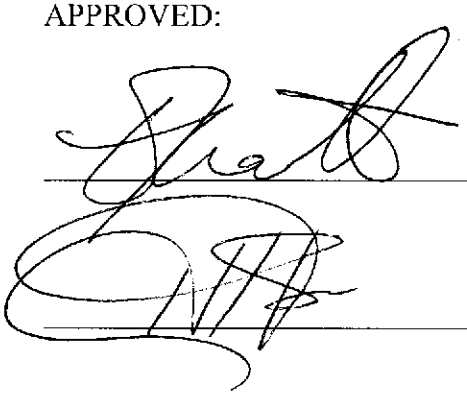
For the Degree of Master of Education

EEA650 Leadership Project

February 2016

The Effects of High School Flex Blocks on Students and Teachers

APPROVED:



_____ (Dr. David F. Khatib: Faculty Advisor)

_____ (Ms. Heather Henderson: Program Director)

Acknowledgements

The process of earning a master's degree and completing a capstone project is long and vigorous. Without the support of a number of people, this project would not have been possible.

Thank you to our CityU professors, we are grateful to have learned from and with you over the last two years. You have shared your passion and expertise of educational leadership exemplifying what it means to be dedicated to your craft: Dr. Dave Khatib, Dr. Paul Stewart, Mrs. Heather Henderson, Mr. Brent Galloway and Mrs. Michelle Khatib. Thank to you our CityU cohort, we are grateful to have shared this journey with you. Your support, friendship and encouragement have been pivotal to our success.

This capstone work is dedicated to my wife, Erika, and my beautiful daughters, Sawyer and Norah. I give my deepest expression of love and appreciation for the encouragement that you gave and the sacrifices you made during this graduate journey. Thank you for your unconditional love and for supporting and inspiring me to work hard for the things that I aspire to achieve. To my writing partner, Sheila, a very special thank you. Over the last two years you have served many roles - ally, nemesis, coffee provider, biking and writing partner, and most importantly, a shoulder to lean on – and I cannot imagine sharing this journey with anyone else. Thank you for pushing me to realize my potential – SP.

I share this great accomplishment with my husband, Adam. Your love and support have helped me to believe in myself and chase my big crazy dreams. Thank you for giving me everything, unfailingly, everyday since we met. Here is to you and our amazing children, Hendrix and Sloan. It truly does take a village, and I am blessed with nothing but the best. Thank you to my family and friends for always being in my corner with just what I need (see coffee, childcare, hugs, and the endless 'you can do this' speeches). To my writing partner Stephen, thank you for always

asking the hard questions. Some of my most important (and valued) learning occurred over coffee and those hard questions. I cannot imagine this journey without your insight, humor, music suggestions and commitment to excellence. Thank you for pushing us to be just a little bit better everyday – SS.

Abstract

Alberta Education's (2010) *Inspiring Education* and high school redesign incorporate flexible learning environments into the restructure of education. This Capstone paper explores current research on flexible learning environments and the implementation of flex blocks in a central Alberta high school. The school collected data on the flex block and its effects on teachers' and students' stress and anxiety, connections, and wellness. These data include surveys conducted as a baseline throughout the implementation semester. The surveys were administered to all students and staff of the central Alberta high school, and the data are presented, discussed, and evaluated. future considerations and recommendations for the use of flex blocks are also noted.

Table of Contents

Page

List of Tables

Page

The Effects of High School Flex Blocks on Students and Teachers

Chapter 1: Introduction

Alberta has an exceptional education system; people come from all over the world to investigate what Alberta is doing (Alberta Education, 2010). On both the 2009 and the 2012 Programme for International Student Assessment tests, Alberta students consistently performed at a high level in reading, science, and mathematics (Brochu, Deussing, Houme, & Chuy, 2013; Knighton, Nrochu, & Gluszynski, 2010). However, Alberta Education is anticipating building the education system of tomorrow (Alberta Education, 2010). Although most educational reforms involve changes in pedagogy and curriculum, Alberta Education has aimed to focus on the structure and organization of the learning environment. Perhaps the most important aspect of this change is the recognition that the current education system was designed, conceived, and structured to meet the needs of the Industrial Revolution (Robinson, 2008). Robinson reported a huge discrepancy between school curriculums and the competencies that the modern workforce demands. Therefore, Alberta Education is giving schools and jurisdictions the flexibility to acknowledge societal changes while meeting the needs and demands of the 21st-century learner (Alberta Education, 2010).

Background to the Problem

The Carnegie unit and traditional education have existed in a state of status quo for over 100 years. Established in 1906, the Carnegie unit is a time-based measurement whereby instructional minutes define educational accomplishment (Alberta Education, 2009). The Carnegie unit was originally intended to measure time on task, but what it actually measured was the organization and length of each class (Alberta Education, 2009). This model does not address the needs of all learners because time in class does not translate into universal knowledge

acquisition. The Carnegie unit ignored the development of creative approaches and allowed no educational improvement or student-centered learning (Alberta Education, 2009). In fact, schools can be among the strictest, least flexible learning environments created for youth (Toshalis & Nakkula, 2012). Because education has remained largely unchanged since the Industrial Revolution, the need for change is clear (Alberta Education, 2009).

Statement of the Problem

The Carnegie unit, which equates time with learning, emphasizes the system more than the student. As Alberta Education (2010) stated:

> Some consider the focus on time to be a deterrent to innovation in the education system. It forces schools to equate educational experience with time spent in class, without recognizing the unique needs, strengths, challenges and passions of individual learners. Instead of making decisions based on what is best for the child, the focus is on time. (p. 25)

From a cognitive-development perspective, students flourish when they have the supports, structure, and freedom to explore on terms that they at least partly construct (Toshalis & Nakkula, 2012). Moreover, current educational reforms embody an element of student choice, which increases students' learning, understanding of concepts, and critical thinking and makes them more independent and confident (Zain, Rasidi, & Zainol, 2012). This input, along with structural, time-based changes, will enable higher levels of personal growth and empowerment through holistic student-centered learning (Tangney, 2014).

To address these traditional educational paradigms, Alberta Education (2015b) developed High School Redesign, a research-supported initiative that details the guiding principles that laid the foundation for a modern educational system. As of September 2014, 154 Alberta high

schools had joined the High School Redesign Project. Of its nine pillars, the majority of the schools that participated in the project focused on flexible learning environments, which take into account that students learn in different ways and at different rates, and they allow the exploration of alternative structures and organization to support student learning (Alberta Education, 2015a). In flex blocks, students have freedom of choice and can use their time to meet their learning, wellness, and socioemotional needs (Alberta Education, 2015a).

Purpose of the Study

The purpose of this study was to examine the implementation of flex blocks in a central Alberta high school over one semester of a school year. More specifically, this study explored the experience of the students and teachers during this time and their effects. The study focused on three elements: stress and anxiety, connections between students and teachers, and school and personal-workload balance.

Throughout the semester the students and teachers partook in surveys that recorded and documented their experiences. This study analyzed the school's flex block implementation using the information collected from these surveys and from anecdotal observations. Future directions and commentary are included.

Research Questions of Hypothesis

The researchers asked the following research questions:

1. Does a flex block support students and teachers by reducing stress and anxiety?
2. Does a flex block assist in creating and strengthening connections between students and teachers?
3. Does a flex block assist students and teachers in balancing school and personal workloads?

The researchers examined the data that they collected to answer these research questions and evaluated the effects of flex blocks on the student and teacher populations.

Significance of Study

This study enabled the collection of information on the successes and failures of the implementation of a flex block within the chosen parameters of a central Alberta high school. The included element of student and teacher voice created a great wealth of information for this particular school. A clear picture of the experience of students and teachers in flex blocks proved invaluable to the process of changing and improving the structure of education in this school. Upon specific examination of the three elements, the researchers gained a better understanding of the flex-block structure through reflection and revision. On a larger scale, this study is important because they examined the effects of flexible learning environments on student motivation and achievement. This will contribute to the body of evidence of the value of flexible learning environments within the Alberta High School Redesign initiative.

Definition of Terms

21st-century learner: Students who are engaged, connected, and excited about learning and have access to modern technology and teaching practices that enhance the learning process.

Carnegie unit: A strictly time-based measure of educational attainment established in 1906, developed to measure the amount of time that students spend studying a subject.

Connection between students and teacher: Students' connections with one or more adults in the building. Teachers actively make and strengthen connections with students to increase their engagement and support them to facilitate higher learning.

Flex blocks: Regularly scheduled blocks of time during a school day in which students have choice, whether it is academic, wellness, or social based. For the purpose of this study, the researchers considered flex blocks that occurred three times weekly for 50 minutes.

Flexible learning environments: Increased flexibility of time, structure, and teaching strategies in schools.

High School Redesign: A research-based Alberta initiative to transform the organization and structure of high schools. It has taken a student-centered approach while establishing Alberta's place in a changing global economy.

Inspiring Education: A document that Alberta Education (2010) created through conversations with Albertans; it presents a new vision for education.

Personal and school-workload balance: The balance between personal life and school workload. In the case of students, this refers to coursework, assignments, and studying. In the case of teachers, it refers to planning, marking, and other extracurricular obligations.

Stress and anxiety: Conditions that reduce happiness and perceived physical and mental wellness.

Teacher Advisory (TA): A program in which a teacher meets regularly with a small group of students and acts as their advocate, supporter, and educational facilitator.

Scope of the Study

This study included a large sample size of students and teacher who attended and worked in a high school in Red Deer, Alberta. Although this sample represents the student and teacher population of this school, the findings might not be representative of other high schools in Red Deer, central Alberta, or other areas.

The organization of this school's flex blocks is different from those in other schools, thus yielding individual results. This project was limited to the study of one high school and might not be useful to leaders in other divisions.

Summary

Alberta's education system is one of the world's best (Brochu, et al., 2013; Knighton et al., 2010). Arguably, this is because of its willingness to evolve and explore alternative practices (Alberta Education, 2010). Despite this willingness, the time structure and organization of Alberta's education system have largely remained unchanged for over 100 years (Alberta Education, 2009). To meet emerging realities and to continue to be competitive on a global scale, Alberta Education created the High School Redesign Project (Alberta Education, 2015b). Although High School Redesign has nine pillars, the researchers focused specifically on flexible learning environments and the removal of the time-based Carnegie unit.

The researchers explored flexible learning environments by examining the use of flex blocks while focusing primarily on the three elements of stress and anxiety, connections between students and teachers, and school and personal-workload balance. They evaluated the implementation of flex blocks and make suggestions to guide future improvements of flexible learning environments in a central Alberta high school. On a larger scale, the study is potentially relevant to and sets the direction for other Alberta schools because of the lack of published work within the areas of flexible learning environments and high school redesign.

Outline of the Remainder of the Paper

Chapter 1 has established the purpose and intent of this study. Chapter 2 is a review of the relevant literature on flexible learning environments, with an emphasis on the research questions. The importance of flex blocks to students and teachers is established through an

exploration of the current schools of thought with regard to stress and anxiety, connections between students and teachers, and school and personal-workload balance. Chapter 3 describes the methodology of this project and the collection of student and teacher data (via electronic surveys) on one Red Deer high school's implementation of flex blocks. Finally, chapter 4 summarizes the school's implementation of flex blocks, with an in-depth examination of its effects on the student and teacher population. The researchers also note potential changes to the structure and delivery of flex blocks and discuss future considerations for the school's continued use of flexible learning environments.

Chapter 2: Literature Review

Alberta is preparing students to meet the learning and industry needs of the 21st century by focusing on personalizing educational contexts (Alberta Education, 2010). This paradigm results in more authentic learning experiences and enhanced learning opportunities in learning environments that are increasingly interactive and collaborative in nature to center educational practices on the learner (Alberta Education, 2015a). The vision of *Inspiring Education* (Alberta Education, 2010) and High School Redesign (Alberta Education, 2015b) is to benefit student learning and success in high school (Alberta Education, 2009). The foundational principles of high school redesign take into consideration the archaic practices of the past and revolutionize them to meet the needs of the 21st-century learner (Alberta Education, 2010).

To shift the focus to individual learning needs, the high school redesign movement has gained momentum. Driving this movement is the desire to change an education system that has remained largely unchanged since the Industrial Revolution (Robinson, 2008). Flexible learning environments have the potential to respond to each learner's needs by creating multiple paths to learning and allowing teachers to act as facilitators (Alberta Education, 2009; Alberta Education, 2013b). In this literature review the researchers examine the emergence of flexible learning environments, which allow structural flexibility while maintaining the required competencies of the Ministry of Education (Alberta Education, 2009). As of 2013, 16 schools in Alberta were participating in the High School Redesign Flexibility Project (Alberta Education, 2015b), and to date none of these schools have published data or reviews on the use of flexible learning environments (Alberta Education, 2013a). This lack of evidence-based research on these environments illustrates the need for further case-study–based research. To further substantiate the importance of this subject, the researchers establish a link between flexible learning

environments and the research questions of the hypothesis. Research in support of student and teacher wellness programs has demonstrated the increased quality of life that result from addressing the wellness needs of these populations (Case, 2010). Furthermore, the research has established that strong student-teacher connections are significant factors in a positive school climate, which is a key motivational element in the learning process (Quint, 2006).

Finally, with 98% of Albertan teachers working outside regular work hours and students being more overcommitted than ever, changes in educational structure and delivery will address the school and personal-workload balance of both teachers and students (Duxbury & Higgins, 2013; Galloway, Conner, & Pope, 2013). Personalized learning will help students to meet their learning needs while allowing them to pursue their interests and passions outside the school environment. Concurrently, flexible learning environments have the potential to better meet the need for balance with which teachers struggle.

Historical Background: Evolution of Education

Carnegie unit. For over a century the education systems of North America prepared students for the Industrial Revolution by delivering curriculum that was organized around time periods called Carnegie units (Lachat, 2010). The Carnegie unit was originally designed as a standardized measure of student achievement for postsecondary admission at the end of the 19th century (Shedd, 2003). This method proved efficient and was readily applied across entire student populations. As the Carnegie measure evolved over time, its primary purpose changed from a student-learning measure to an administrative, budgeting, and efficiency metric used across all levels of education (Shedd, 2003). From an administrative standpoint, the advantages of this system are unparalleled in that the link to hours results in funding, additional resources, personnel, and a clear depiction of a school's academic success. Unfortunately, this system fails

to acknowledge the needs of the 21st-century learner and the individual education context that is required for each student to be successful (Alberta Education, 2010).

The school systems that exist today were developed around the agrarian calendar and molded in the factory mode to meet the needs of the industrial age. Today's high school students need a different system with authentic educational experiences to acquire the skills and competencies they need to succeed in a global society characterized by rapid change, workforce diversity, and unprecedented reliance on technology (Baldwin, 2001; Lachat, 2001). Curriculum must evolve to focus more on higher level thinking and deeper understanding and less on memorization and content-recall skills. According to Alberta Education (2013), education requires a fundamental shift with greater emphasis

> on education than on the school; on the learner than on the system; on competencies than on content; on inquiry, discovery and the application of knowledge than on the dissemination of information; and on technology to support the creation and sharing of knowledge than on technology to support teaching. (p. 1)

In addition to changing the Carnegie unit, today's high school students need an approach to education that meets the realities and demands of a technological and global society characterized by rapid change and unprecedented diversity. The workplace already demands that individuals understand multidimensional problems, design solutions, plan their own tasks, evaluate results, and work cooperatively with others. These expectations represent a new mission for education that requires high schools not merely to deliver instruction, but also to be accountable for ensuring that educational opportunities result in all students learning at high levels (Visher, Emanuel, & Teitelbaum, 1999). Research and practice literature have shown substantial evidence that the current comprehensive high school model will not succeed in

helping all students to reach high levels of performance (Brandt, 2000; Cawelti, 1994; Visher & Hudis, 1999). Thus, the need to change a 100-year-old system is established. To meet the demands of modern society, education must respond with a cohesive, flexible, and responsive model.

Flexibility in education recognizes that students have individual and diverse learning needs and interests and that student engagement and motivation play a significant role in the learning process (Goode, Willis, Wolf & Harris, 2007; Hill, 2006). Furthermore, high school students today require different skills than the previous generation did to be prepared for a global economy typified by diversified workplaces and ongoing change. Educators can address these societal shifts and support individual learning needs by providing flexible learning options that give students a choice in their learning content, the outcomes, and options that encourage high-order thinking and deep understanding (Alberta Education, 2009; Darling Hammond & Youngs, 2002; Hill, 2006).

Flexible delivery focuses on a variety of access options for learners—what, where, and when learning occurs—and is concerned primarily with managing and administering the learning access and content (Smith, 2000; Taylor, 1998). In contrast, flexible learning focuses on options related to how learning occurs; that is, the learning process. Flexible learning focuses on facilitating the individual student's learning process, and the goal is to provide quality learning experiences through consideration of each learner's personal characteristics, learning styles, work responsibilities, learning needs and desires, and personal circumstances. Van den Brande (1993) described flexible learning as "enabling learners to learn when they want (frequency, timing, duration), how they want (modes of learning), and what they want (learners can define what constitutes learning to them)" (p. 2).

High School Flexibility Enhancement Pilot Project. The High School Flexibility Enhancement Pilot Project (HSFEPP) is an Alberta Education initiative that explored whether the 25-hour-per-credit time requirement should be maintained (Alberta Education, 2011). Starting in 2013, 16 schools from across Alberta received permission to explore alternative ways to organize and deliver education without the constraints of the Carnegie unit (Alberta Education, 2011). The primary focus of the project was to determine whether the removal of the time-per-credit requirement would help to realize the education system that Alberta Education (2010) envisioned in *Inspiring Education* that shifted the educational focus towards the learner and away from the system (Alberta Education, 2013a). As schools began to experiment with alternative structures, deliveries, and organizations of learning, it became obvious that the removal of the time constraint was necessary to move closer to achieving the vision of *Inspiring Education*, but that true transformational practice would also require significant shifts in thinking from all stakeholders (Alberta Education, 2013a).

***Paradigm shifts*.**

1. Shift in responsibility for teaching to responsibility for learning: With the removal of the Carnegie unit, teachers have focused their efforts less on content delivery and more on understanding, assessing, and reporting outcomes in interdisciplinary project-based learning models (Alberta Education, 2013a). This has caused the Alberta Program of Study to come under scrutiny.
2. Shift in practice from student compliance to student direction: Flex time allows students to make decisions that support their learning and meet their wellness needs and interests. When students have ownership and responsibility for the content and

direction of their learning, they become more engaged and committed (Alberta Education, 2013a).

3. Shift in thinking about success in learning from achievement to engagement and achievement: The Carnegie unit forced teachers and schools to deliver very prescribed and narrow curriculums that did not allow students to pursue learning opportunities that would increase their engagement. Academic achievement continues to be a very important measure of learning, but schools have also learned that achievement alone is not a sufficient indicator of student success and that they need to consider intellectual engagement in assessing the overall effectiveness of student achievement (Alberta Education, 2013a).
4. Shift in practice from isolation towards collaboration: Teacher collaboration has increased significantly as teachers work together to build and deliver interdisciplinary and authentic learning opportunities for their students. Teachers understand that for students to demonstrate their knowledge and ability to apply interdisciplinary competencies, they must leverage the expertise, abilities, and ideas of their colleagues to ensure the very best learning outcomes and assessment.
5. Leadership that empowers teachers and students as decision makers: Through the continuous development of new ideas and implementation of new practices, HSFEPP schools are progressively striving to enhance the learning environment for both students and teachers. Leadership in HSFEPP schools has trickled into the classrooms, which has in turn empowered teachers to build learning environments based on their students' needs and given them the freedom to make creative decisions

within their classrooms. The liberty that teachers have to be in the driver's seat of their classrooms has generated an entrepreneurial spirit amongst students.

Results. During the initial HSFEPP, several positive trends validated the project's flexible approaches (Alberta Education, 2013a):

- The high school completion rate has increased or stayed the same in 69% of the schools.
- The dropout rate has decreased or stayed the same in 94% of the schools.
- The diploma exam participation rate has increased or stayed the same in 69% of the schools.
- The course completion rate has increased or stayed the same in 88% of the schools.
- Parents' perceptions of school improvement have improved or stayed the same in 86% of the schools.
- Teachers' perceptions of school improvement have improved or stayed the same in 67% of the schools.
- Students' perceptions of the quality of education have improved or stayed the same in 63% of the schools.

The HSFEPP pilot project reported two other positive results. The first improved intelligent engagement, which measures "student interest and motivation, their perception of rigour and relevance in their coursework, the effectiveness of learning time and the effort they are extending in their coursework" (Alberta Education, 2013a, p. 6). This result of the Tell Them From Me Survey shows that Alberta students outperformed both provincial and national norms (Alberta Education, 2013a). Finally, at the end of the first year of the HSFEPP, the project administrators asked the participating principals and their superintendents for feedback on the

possible removal of the time-per-credit requirement. Every principal and superintendent voted unanimously in favor of the removal of the Carnegie unit from their schools.

Research-Based Wellness

Student wellness. The need to examine students' wellness holistically and its effects in education is clear. Increasingly, evidence has shown a strong and reciprocal relationship between mental and physical health, and linking these two areas might result in positive youth development in the school context (Miller, Gilman, & Martens, 2008). It might protect students whose lifestyles involve habitual health behaviors from perceived stress and consequent health traumas (Ying & Lindsey, 2013). Educators can then better address Alberta Education's goal of high school completion because learners will benefit from holistic intellectual, spiritual, physical, and mental wellness (Alberta Education, 2010; Lemon & Watson, 2011).

Today's youth struggle with anxiety and depression, and the promotion of wellness is a primary concern (Murnaghan, Morrison, Laurence, & Bell, 2014). The implementation of educational initiatives such as flexible learning environments and other mental health directives emphasize safe and supportive environments, student engagement, resilience, and self-determination (Murnaghan, et al., 2014). *Inspiring Education* (Alberta Education, 2010) focuses on the need to center education on learner and wellness initiatives for students and emphasize health-promotion and illness-prevention strategies, including safe and supportive environments, student engagement/empowerment, resilience, and self-determination (Murnaghan, et al., 2014). Physical wellness also plays a role in the holistic wellness of students. Studies have demonstrated the positive protective impact of physical activity behaviors and exercise on students' stress tolerance (Bland, Melton, Bigham, & Welle, 2014).

Ideally, modern educational movements should support a wellness drive that promotes skills, develops purpose in life, and emphasizes compassion for others, moral values, and a sense of oneness with the universe (Lemon & Watson, 2011). Wellness research is needed to further understand the lack of coping skills and therefore the low holistic wellness of the current population of students (Lemon & Watson, 2011). This direction has the potential to increase the understanding of perceived stress and wellness while identifying at-risk students (Lemon & Watson, 2011).

In the hope of meeting the needs of the 21st-century learner, student wellness should be a pillar of the connectedness framework to create an environment that will positively influence youth health (Alberta Education, 2010; Murnaghan, et al., 2014). By promoting both mental and physical health, schools can contribute to positive youth development in a variety of domains, including greater school and life satisfaction, school engagement, and quality of life (Furlong et al., 2003; Gilman & Huebner, 2003; Huebner & Gilman, 2004). This is evidenced in students' participation in extracurricular activities and the subsequent lower levels of depression, anxiety, and alcohol and marijuana use (Bartko & Eccles, 2003; Darling, 2005). These students' levels of self- esteem, internal locus of control, and prosocial behaviors are also higher (Eccles & Barber, 1999; Gilman, 2001; Zaff, Moore, Papillo, & Williams, 2003).

Teacher wellness. Teacher wellness is of utmost importance to the community of learners and stakeholders within a school. Proactive wellness mitigates health problems before they emerge or become unmanageable (Benavides & David, 2010). A well staff member is likely to have reduced absenteeism, be a more efficient worker and learner, and have better morale (Case, 2010; Swarbrick, 2009; Swarbrick, D'antonio, & Nemec, 2011). From a fiscal standpoint, unhealthy employees translate to lost profits and dysfunction within the work environment

(Case, 2010). In the educational environment well teachers function as role models for health for students and colleagues and can potentially transfer wellness strategies from their personal experiences (Swarbrick et al., 2011). This can create a supportive culture of wellness for educational stakeholders.

The wellness of teachers directly affects their success in the profession, and 25% to 50% of beginning teachers will leave the profession within the first five years (Darling-Hammond, 2003; Ingersoll & Smith, 2003). This variance in job satisfaction has been attributed to holistic wellness and perceived stress (Watson, Harper, Ratliff, & Singleton, 2010). The cost of replacing teachers who leave the profession is conservatively estimated at $2.2 billion a year (Watson et al., 2010). In an Alberta study, teachers missed an average of 10 days of work a year, with approximately half attributed to ill health (5.2 days) and 3.0 days due to emotional, physical, or mental fatigue (Duxbury & Higgins, 2013). Therefore, the emphasis on job satisfaction should include enhancing employees' psychological health and holistic wellness to benefit teachers, students, and the educational environment (Watson et al., 2010).

Wellness approaches have widespread benefits, and the workplace is no exception. Research has further indicated that health promotion programs at worksites can reduce the costs associated with absenteeism, health care, and disability workers' compensation by 25% (Gillan et al., 2010). Not included in this are the health benefits to each employee.

With regard to physical wellness, research has shown the benefits to employers of improved employee fitness, with a possible 300% return on investment per employee from employer-facilitated exercise (Benavides & David, 2010). In the educational context specifically, those who exercise moderately to vigorously are less likely to engage in an emotion-oriented coping style and are less likely to report perceived stress (Gillan et al., 2010). In connection with

Alberta Education initiatives, a community approach to learning allows stress breaks, and acquiring the skills to reduce perceived stress could result in happier, healthier employees and reduce school systems' healthcare costs (Alberta Education, 2010; Gillan et al., 2010).

Although stress in an inevitable part of a school employee's life, current educational movements (such as flexible learning environments) improve teachers' wellness (Stern & Cutler, 2002). Ideally, creating flexible learning environments for both students and teachers will improve teachers' physical well-being (should they make it a priority) as well as their emotional wellness because they will have more freedom to address their need for emotional connections with students and other stakeholders (Wilkins, 2014).

Research-Based Connections: Student-Teacher Connections

High-quality education starts with relationships (Darling-Hammond, Alexander, & Price, 2002). Researchers have increasingly identified the student-teacher relationship as a significant factor in academic and behavioral success in school (Camp, 2011; Murnaghan et al., 2014). Teachers' care and concern for their students' well-being, intellectual growth, and educational success create a positive school climate and motivate students (Quint, 2006; Quint, Thompson, & Bald, 2008). This motivation has far-reaching benefits for students and teachers alike.

When students feel that teachers know and care about them, they are more likely to be successful in the learning environment (Quint, 2006; Zhu, 2013). These relationships help students to develop cognitively and affectively when their teachers are there to listen to them, help them with schoolwork, and recognize their accomplishments (Quint, 2006; Zhu, 2013). Conversely, students who are part of large student populations often feel isolated and feel the lack someone to help them to become healthy, intellectually reflective, caring, ethical citizens

(Baldwin, 2001). These unconnected students also struggle to attend school regularly (Quint et al., 2008).

Strong student-teacher relationships improve students' motivation, academic achievement, rate of attendance, and attitudes towards school (Wilkins, 2014). A focus on student-teacher relationships yields vast improvements in the expectations of the whole child (Winters, 2011). Thus, it is essential that all students have at least one relationship with an adult in the school who understands their development needs and enjoys working with them (Eccles, 1999; Ellerbrock, Kiefer, & Alley, 2014; Jackson & Davis, 2000). This is turn increases the chance that they will feel cared for and will be successful in school (Ellerbrock & Kiefer, 2010; Ellerbrock et al., 2014; Jackson & Davis, 2000; National Middle School Association, 2010). This success is far-reaching and includes higher grades, higher test scores, lower dropout rates, and an improved overall school experience (Blum & Libbey, 2004; Jackson & Davis, 2000; Klem & Connell, 2004; MacIver & Epstein, 1991; McNeely & Falci, 2004; National Association of Secondary School Principals, 2006; Shulkind & Foote, 2009).

Students are not the only ones who benefit from strong student-teacher relationships; teachers benefit as well. Studies have shown that these relationships result in a more productive classroom environment (Davis, 2003; Brok, Brekelmans, & Wubbels, 2004; Henderson, Fisher, & Fraser, 2000; Maulana, Opdenakker, & Bosker, 2013; Opdenakker, Maulana, & den Brok, 2012). Not only are student-teacher relationships one of the core reasons that teachers stay in the profession, but they also give teachers internal rewards and meaning to their work (Hargreaves 1998; O'Connor 2008; Split, Koomen, & Thijs, 2011). Conversely, teachers who feel alienated or that their students do not know them have stated that this is often a result of the lack of personal connections with their students (Split et al., 2011).

The importance of student-teacher relationships is evident. Often these relationships are among the most salient and influential relationships in students' lives, but they benefit teachers as well (Anderson, Christenson, Sinclair, & Lehr, 2004; Split et al., 2011).

Research-Based School and Personal Workload

Student workload. Student workload balance must be at the forefront of educational stakeholders' concerns. With the ever-increasing demands of modern society, students require a skill set to meet the demands of society (Alberta Education, 2010). Sadly for some students, this means sacrificing their health and academic integrity to complete schoolwork (Galloway et al., 2013; Pope, 2001; Taylor, Pogrebin, & Dodge, 2002). This disturbance extends to their family and social life, their extracurricular activities (or lack thereof), and their overall stress and anxiety. In short, students face having too much to do and suffering in the face of it (Kouzma & Kennedy, 2002).

The struggle for school workload balance has detrimental effects on students' health and well-being (Conner, Pope, & Galloway, 2009). An increased number of homework hours is negatively associated with psychological well-being, physical health symptoms, and sleep patterns (Galloway et al., 2013). Research has shown that students get, on average, only 6.8 hours of sleep, whereas experts recommend 9.25 hours (Conner et al., 2009). Furthermore, two thirds of those surveyed reported six or fewer hours of sleep each night, and 56% reported exhaustion as a result of academic stress (Conner et al., 2009).

As students navigate the academic world, their family and social life is negatively affected. Homework loads can greatly reduce the time that students have for family activities, a social life, and cultural or religious enrichment (Cooper, 1989; Dudley-Marling, 2003; Galloway et al., 2013; Kralovec & Buell, 2000; Nordmo & Samara, 2009). Homework loads cause tension

in the home and create conflict between school and home (Kralovec & Buell, 2000). Research has shown that 60.9% of students feel that schoolwork and homework keep them from spending time with family and friends (Conner et al., 2009).

Although many students remain engaged in extracurricular activities, they struggle to find balance as they juggle conflicting responsibilities (Galloway et al., 2013). A high percentage of students (60.3%) have reported having to drop an activity they enjoy because of schoolwork and other demands (Conner et al., 2009). Research has shown significant benefits from pursuing extracurricular activities, but the pressures of the school workload balance forces students to make a choice (Galloway & Pope, 2007).

Finally, high levels of stress and anxiety accumulate from the student workload balance struggle. Research has found that 9 in 10 students (89%) reported feeling stressed about homework (Galloway et al., 2013; Markow, Kim, & Liebman, 2007). Students who spend the most time on homework each night consistently have more stress-related symptoms and struggle with mental health concerns more (Galloway & Pope, 2007). Arguably, this is directly attributed to their spending six to seven hours a day in school and an additional three or four hours on schoolwork each night (Galloway & Pope, 2007). This makes their day longer than the workday of most adults (Galloway & Pope, 2007).

Although students want to achieve academically, they should also be able to interact with the world around them. This includes having a healthy, happy lifestyle; cultivating and maintaining relationships; participating in extracurricular activities; and being able to balance the stressors in their lives. Schools must heed the research and note the need to change scheduling and the potential need to design a modified block schedule that will enable success for all students (Conner et al., 2009).

Teacher workload. Teachers struggle to maintain high-quality teaching while balancing their personal lives. Work overload along with the pressure of the teacher's role are commonly identified occupational stressors in the teaching environment (Van Der Doef & Maes, 2002). Because many beginning teachers are leaving the profession (25% to 50%), the need to examine this balance is clear (Darling-Hammond, 2003; Ingersoll & Smith, 2003; Watson et al., 2010). Outside traditional teaching responsibilities, the following factors add to teacher workload: Department of Education initiatives, specialized education plans, nonteaching duties, administrivia paperwork, the number of different subject areas, the lack of school-level administrative support, the lack of job-embedded collaboration, the lack of appropriate professional development, the need to teach outside their area of expertise, the lack of input into schoolwide decisions, inadequate preparation time, and the high number of after-school meetings (Sugden, 2010). Additionally, teachers face larger numbers of students in their classrooms, which increases their workload and correlates with professional burnout (Bitsadze & Japaridze, 2014). Canadian teachers' workloads are intensifying, but teachers are also increasingly being asked to take on responsibilities for which they have not been trained (Belliveau, Liu, & Murphy, 2002; Canadian Teachers Federation, 2007; Dibbon, 2004; Emerick, Hirsch, & Berry, 2005; Harvey & Spinney, 2000; Kamanzi, Riopel, & Lessard, 2007; Naylor, 2001; Smaller et al., 2005; Sugden, 2010; Sutton & Huberty, 2001). A culture of full time availability and expected rapid response has led to a blurring of the line between work and home life, and teachers feel the pressure in their personal lives as well as on their health and well-being (Froese-Germain, 2014).

In response, teachers have also reported emotional exhaustion and reduced professional achievement (Bitsadze & Japaridze, 2014). The restrictive structure of traditional school environments also correlates teacher burnout. Flexible learning environments help teachers to

adapt and structure their teaching to meet both the needs of learners and the realities of what they can deliver (Alberta Education, 2010).

Although teachers who enter the profession are aware of the need to conduct some job-related activities outside school hours, the actual reality of this commitment (anywhere from 56.25 to 60 hours a week) is excessive (Sugden, 2010). In an Alberta Teacher's Association study, 98% of respondents reported taking work home on evenings and weekends, outside regular hours (Duxbury & Higgins, 2013). The typical teacher in the ATA sample worked 60.8 hours a week, 10 more hours per week, on average, than the professionals in the total sample worked (the mean number of hours of work per week in the total sample was 50.2; Duxbury & Higgins, 2013). With under 40% of teachers in the study reporting high job satisfaction, it is understandable that 70% reported high levels of perceived stress, and 75% reported that their work interfered with their family and personal life (Duxbury & Higgins, 2013). Supportive of this is a Canadian Teachers' Federation Survey in which most teachers reported stress from having insufficient time to spend with their families and partners, from caregiving for family and friends in need, or from not enough time for personal recreational pursuits (Froese-Germain, 2014).

To find a better balance, teachers must be afforded time during the regular school day to reflect, plan, and collaborate (Dibbon, 2004). In Alberta this organizational shift would also address employees' well-being and workloads (Duxbury & Higgins, 2013). Furthermore, addressing systemic barriers to educational improvement can result in meaningful progress towards the transformation that *Inspiring Education* (Alberta Education, 2010; Couture, 2013) outlined. Flexible learning environments and schedules facilitate this change without disruption

to students' learning and achievement (Alberta Education, 2015a). Changing teachers' workloads and schools' organization will encourage excellence and personal growth (Dibbon, 2004).

Summary

Flexible learning environments lead to more authentic learning experiences and more learning opportunities because they increase interactions and collaboration and center educational practices on individual learners and their needs (Alberta Education, 2015a).

The implementation of flexible learning environments is growing, but there is limited evidence-based research on their effect. Despite this, the literature on flexible learning environments and the research questions of the hypothesis established the importance of this field. Research in support of student and teacher wellness programs demonstrated that addressing the wellness needs of these populations improves their quality of life (Case, 2010). Furthermore, the research established that student-teacher connections are a significant motivator in the learning process (Quint, 2006). Finally, the fact that many teachers and students must do school-based work outside of regular hours establishes the need for change in structure and delivery of education (Duxbury & Higgins, 2013; Galloway et al., 2013). Thus, flexible learning environments help teachers and students to find balance in their school and personal lives while they strive for academic engagement and success.

Outline of the Remainder of the Paper

Chapter 2 is a review of the relevant literature on flexible learning environments, with an emphasis on the research questions. The researchers have validated the importance of flex blocks in their exploration of the current schools of thought with regard to stress and anxiety, connections between students and teachers, and school and personal-workload balance. Chapter 3 discusses the methodology of this project and the collection of student and teacher

data (via electronic surveys) on one Red Deer high school's implementation of flex blocks. Finally, Chapter 4 summarizes the school's implementation of flex blocks, with an in-depth examination of its effects on the student and teacher population. The researchers note the potential changes to the structure and delivery of flex blocks, as well as future considerations for the school's continued use of flexible learning environments.

Chapter 3: Method

Alberta Education has aimed its recent initiatives toward changing the structure and organization of the learning environment to ensure that learners benefit from increased interaction, collaboration, and accountability (Alberta Education, 2015b). The intention is for the implementation of change to reflect societal changes within the educational environment (Alberta Education, 2010). At the secondary level, High School Redesign (Alberta Education, 2015b) is based upon foundational pillars that focus on the specific needs of each learner in the hope that every student will receive the best possible education (Alberta Education, 2010). This requires multiple paths to learning in an environment of flexibility. When students are offered choice, they can determine what they learn, when they learn, and where they learn (Alberta Education, 2015b). This type of flexibility will not be implemented overnight, but offering students choice is a step in the right direction towards providing learner-centered education. In their execution, flexible learning environments have emerged as designated blocks of time within a school day during which students choose their course, learning environment, and/or activity. These flex blocks are intended to create educational environments in which students are engaged and can transform their experiences into valuable educational moments (Alberta Education, 2015b).

As the researchers stated, the Carnegie unit places greater emphasis on the system than on the student by equating time with learning. However, this fails to acknowledge that learning differs from student to student, and it neglects what is best for each learner (Alberta Education, 2010). Thus, educational reforms should embody student choice and structural time-based changes to address the needs of individual learners while enabling higher levels of personal growth and empowerment (Tangney, 2014; Zain et al., 2012). To address the discrepancy that

time-based educational environments create, High School Redesign (Alberta Education, 2015b) has identified principles for the direction of a modern, flexible educational system. With the focus on flexible learning environments, the researchers of this study explored the implementation of flex blocks, which empower students with choice, and examined the consequent effects on students and teachers alike.

With the implementation of flex blocks, the central Alberta school documented three aspects of the student and teacher experience: stress and anxiety, connections between students and teachers, and school and personal-workload balance.

Suggested Research Study

The school surveyed students and staff throughout the flex implementation, and the researchers collected data that were the primary source for this capstone project. They collected the data electronically through Google Forms and shared the results of the surveys with students, parents, and staff throughout the project.

School Context

The central Alberta high school (Grades 9-12) has a student population of approximately 1,400, with a professional staff of 70 and approximately 29 support staff. The school offers a diverse range of programs and subjects. In addition to regular classes, it offers Advanced Placement, the Registered Apprenticeship Program, Sports Excellence, and a full range of special education classes. The school has a global focus, with twin schools in China, France, and Mexico. Other course offerings include an extensive fine arts program and a full complement of career and technology studies courses.

The school has two different student timetables. The Grade 9 timetable consists of a day 1 and day 2 schedule, with three 55-minute classes in the morning (English, mathematics,

and social studies) that run all year and four 84-minute afternoon classes per semester, for a total of 11 classes per year. The high school timetable is semestered and consists of four 84-minute classes over two semesters, for a total of 8 classes per year. Grades 9 and 10 students are required to carry full timetables, Grade 11s are permitted one spare, and Grade 12s are expected to carry 30 credits during the school year.

The school has a well-established TA program that pairs a teacher with a group of students over the course of their time at the school. The teacher advisor acts as an advocate for the students and is the primary contact with home. The TA program is offered once a month for an hour and includes a schoolwide news broadcast and a number of academic, career-counseling, and relationship-building activities.

The school surveyed the students three times (pre-implementation, midpoint, and end of semester) and staff two times (pre-implementation and end of semester) during the semester to inform school leaders and give all stakeholders a voice on the effects of the flex block on the three areas of interest: student-teacher connections, wellness, and school- and home-commitment balance. In total, 92% of the teaching staff and 62% of the students completed the school-administered surveys.

Background and Planning

The central Alberta high school joined the Alberta High School Redesign Project (Alberta Education, 2015b) in the 2014–2015 school year and implemented a second-semester flex block. The school leaders used data from provincial and local surveys and academic results (Alberta Education's accountability pillar, Tell Them From Me, and provincial achievement and diploma results), as well as school-created surveys that were distributed to school stakeholders to determine gaps that the school could address by exploring flexible learning opportunities. The

identified areas of concern included the unprecedented levels of student-, teacher-, and counselor-reported student stress and anxiety and the plateaued student-learning achievement in both PAT and diploma examinations.

The school administration engaged the school curriculum leaders, the school's parent council, and teachers in creating a shared vision for the project that would address the concerns. They travelled to other schools in the province that had implemented flex models to determine the pros and cons of each and to identify elements and ideas that would best suit the needs of their students and their educational priorities. Once they had identified and critiqued a variety of models, the school leaders worked collaboratively to create a structure that would address the identified gaps and concerns by developing a wide variety of academic, wellness, enrichment, and passion-interest flex opportunities.

Flex Block

The primary focus of the flex block was to give students regular and ongoing independent choice in how they would meet their academic, wellness, interest, and social needs. Departments collaborated to ensure that curricular-based learning opportunities were available in each discipline and at each grade level for every flex block. The school administration made academic offerings the priority, but also encouraged teachers and departments to offer students additional wellness and interest opportunities.

The students had a large variety of sessions and were responsible for enrolling in the appropriate sessions over a two-week span with the guidance of their teacher advisors in the student information system PowerSchool. The staff also encouraged the students to use their flex time to complete homework or catch up on missing assessments and assignments and created large study halls and examination rooms to accommodate these needs. The teachers were

expected to work in two of every three flex sessions and were allowed to use the third session to attend flex offerings (e.g., yoga, etc.) or for tradition teaching duties (marking, lesson planning, collaboration with colleagues, etc.).

The staff members were open to trying something new to address the identified concerns while they explored alternative approaches to structuring and delivering education. The greatest resistance came from the core-curriculum teachers, who were unsure of the effects of reduced instructional and contact time on student achievement and on their planning and assessment practices. To ease the transition and minimize the loss of instructional time, the staff determined that the school would move slowly into its redesign effort by implementing a 55-minute flex block every Monday, Wednesday, and Friday. On Tuesdays and Thursdays the school would retain the previous timetable, the core-subject teachers would have traditional time blocks to administer examinations, and other noncurricular areas such as fine arts and physical education could run off-campus activities. Moreover, the students could participate in all of the schoolwide activities such as assemblies, speaker events, career fairs, and so on during the flex block to further reduce the lost instructional time. By dividing the week between days with and days without a flex block, the school unintentionally created six different timetables: two for the high school students (Grades 10–12) and four for the Grade 9 students (see appendix A).

Summary

Flexible learning environments engage students and improve the overall success of students. This element of individualized learning addresses previous gaps in educational reforms and gives every student a choice and customizable opportunities (Alberta Education, 2010). After the researchers examined local and provincial data and stakeholder input, a central Alberta school was able to identify learning gaps and the need for structural change. This school of

approximately 1,400 students and 99 professional staff implemented 55-minute flex blocks three times a week to offer students more choice and flexibility. The flex blocks offerings included academic, wellness, and interest choices. The school administration hoped that this initiative would address the noted gaps and improve students' chances of success.

During the first semester of this implementation, the school administered Google Form surveys to determine the effects of three elements on students and teachers: stress and anxiety, connections between students and teachers, and school and personal-workload balance. The staff surveyed the students three times and the staff two times. In total, 92% of the teaching staff and 62% of the students completed the school-administered surveys. To address the logistics of this implementation, the central Alberta school created six timetables and hired a third-party vendor to create an attendance tracking system in which the students scanned themselves in and out of flex blocks for accountability.

Outline for the Remainder of the Paper

In Chapter 3 the researchers explained the reasoning behind flexible learning environments and their implementation in a central Alberta school. They also discussed the logistics of this implementation and the data that they collected with regard to the effects of flex blocks on teachers and students in the areas of stress and anxiety, connections, and school and personal-workload balance. In Chapter 4 the researchers more closely examine the central Alberta school's implementation of the flex blocks after they analyzed their data. In addition, they suggest potential changes to the structure and delivery of flex blocks as well as future considerations.

Chapter 4: Results and Discussion

Alberta Education's (2010) *Inspiring Education* and High School Redesign (Alberta Education, 2015b) initiatives moved away from the Carnegie unit and towards a more comprehensive and individualized educational approach. With this restructuring, flexible learning environments have emerged in the hope of offering students choice to increase their engagement and success. A central Alberta high school incorporated three 55-minute flex blocks into the weekly schedule during the second semester of 2015. The school's administration collected data on the effects of three elements on students and teachers: stress and anxiety, connections between students and teachers, and school and personal-workload balance. Holistically, the data revealed the benefits of flex blocks to students and the negative effects on teachers. The researchers draw conclusions from the data and discuss the implications of broader application of the flex blocks. Finally, they make recommendations and note future implications.

Presentation and Discussion of Data

Flex blocks.

Student. The central Alberta high school collected data on the perceived benefits of flex to students. As Table 1 depicts, prior to the introduction of flex blocks, 61.9% of the students surveyed agreed that they could benefit/support them. At the midway point of the semester, 73.1% of the students agreed that flex blocks had benefitted/supported them. This trend continued with the final survey, which shows that 81.9% of the students agreed that flex blocks benefitted/supported them. These data establish the value of flexible learning environments according to the students' perceptions of it as a positive support because of the marked increase of 20% in their perceptions over a period of five months. Concurrently, this aligns with the belief

that flexible learning environments center the educational structure around the needs of the learner (Alberta Education, 2015a).

Table 1

"I Believe That Flex Benefits/Supports Me (Student)"

	Student survey 1		Student survey 2		Student survey 3	
Rating scale	No. of responses	%	No. of responses	%	No. of responses	%
Strongly agree	254	26.0	217	34.0	291	47.5
Agree	350	35.9	250	39.1	211	34.4
Undecided	208	21.3	94	14.7	54	8.8
Disagree	73	7.5	41	6.4	19	3.1
Strongly disagree	91	9.3	37	5.8	38	6.2

Teacher. The central Alberta school also collected data on the perceived benefit of flex to students from the teachers' perspective. Table 2 demonstrates that at the conclusion of the flex blocks' initial implementation, 78.2% of the teachers believed that they benefitted/supported students.

Table 2

"I Believe That Flex Benefits Our Students"

Rating scale	Total teacher count	% of teacher count
Strongly agree	6	13.0
Agree	30	65.2
Undecided	8	17.4
Disagree	2	4.3
Strongly disagree	0	0

It is important to note that 17.4% of the teachers were undecided, which left only 4.3% disagreeing on the benefit/support of flex blocks. These data further solidify the perceived benefit/support of flex blocks for students and demonstrate that a flexible learning environment benefits learners (Alberta Education, 2010).

Unfortunately, with regard to the perceived benefit/support of flex blocks for teachers (Table 3), the data are not as positive in that 41.3% of the teachers reported that flex blocks benefitted/supported them; 34.8% were undecided, and 23.9% disagreed. These data reveal interesting information about the teachers' experience with flex blocks at the central Alberta high school.

Table 3

"I Believe That Flex Supports/Benefits Me (Teacher)"

Rating scale	Total teacher count	% of teacher count
Strongly agree	6	13.0
Agree	13	28.3
Undecided	16	34.8
Disagree	10	21.7
Strongly disagree	1	2.2

Wellness.

Students. The central Alberta high school surveyed the various uses of flex-block time and found that students spread their time over a variety of options. Table 4 shows these options as completing homework, hanging out with friends, receiving academic supports, participating in physical wellness activities, and other.

Table 4

"How Do You (Student) Primarily Use Your Flex Time?"

	Survey 2		Survey 3	
Responses	No. of responses	%	No. of responses	%
Complete homework	183	28.6	239	39.0
Hang out with friends	259	40.5	238	38.8
Receive academic support from teacher(s)	113	17.7	78	12.7
Participate in wellness activities (gym, loft, yoga, etc.)	56	8.8	32	5.2
Other	28	4.4	26	4.2

Although these data do not specifically prove flex blocks' effect on student wellness, they show the wide variety of choice and voice while also establishing the location and priorities of students during flex block time. Furthermore, the data demonstrate a holistic wellness approach, because students have options that address the intellectual, spiritual, physical, and mental aspects of wellness (Alberta Education, 2010; Lemon & Watson, 2011).

The central Alberta high school also examined the students' perceived levels of stress and anxiety at school. As Table 5 illustrates, the baseline data reveal that 46.5% of students felt stressed or anxious at school, that midway through the semester this dropped slightly to 43.5%, and that at the end of the semester it dropped again to 40.1% of students who felt stressed or anxious.

Table 5

"I (Student) Feel Stress or Anxious at School"

	Student survey 1		Student survey 2		Student survey 3	
Rating scale	No. of responses	%	No. of responses	%	No. of responses	%
Strongly agree	150	15.4	100	15.6	79	12.9
Agree	304	31.1	178	27.9	167	27.2
Undecided	233	23.9	149	23.3	142	23.2
Disagree	218	22.3	140	21.9	146	23.8
Strongly disagree	71	7.3	72	11.3	79	12.9

Although this decrease could be attributed to any number of factors, its correlation with the implementation of flex blocks in undeniable. Arguably, flex blocks create safe and supportive learning environments and thus improve students' resilience and determination (Murnaghan et al., 2014).

***Teachers*.** One of the baseline questions that the survey asked teachers before the flex implementation was how they envisioned spending their flex time. One of the factors in the exploration of a flexible learning environment was the belief that it could help to reduce teachers' stress and anxiety levels by helping them to pursue wellness activities and take personal breaks during the regular work day (Stern & Cutler, 2002**)**. The majority of teachers indicated (Table 6) that they would use their flex time primarily to support students in a variety of ways—doing traditional teacher work (planning, marking, etc.), collaborating with colleagues, or offering tutorial and one-to-one academic supports—while they attempted to find time to engage in personal wellness activities and make their wellness needs more of a priority (Stern & Cutler, 2002).

Table 6

"How Do You Expect to Primarily Use Your Flex Time?"

Responses	Total teacher count	Total teacher %
To complete school work (planning, marking, etc.)	23	34.8
To collaboration time	15	22.7
Help students	61	92.4
Wellness activities (gym, loft, yoga, etc.)	18	27.3

Note. Baseline data collected by the central Alberta high school.

The teachers were split with regard to their self-identified stress and anxiety: 44% reported daily stress and anxiety in the pre-implementation survey (Table 7).

Table 7

"I Feel Stressed or Anxious at School"

Rating scale	Total teacher count	Total teacher %
Strongly agree	3	4.5
Agree	26	39.5
Undecided	6	9.1
Disagree	25	37.9
Strongly disagree	6	9.1

Note. Baseline data collected by the central Alberta high school.

Over the course of the flex block implementation, 80% of the teachers reported that they devoted their flex block time primarily to supporting students, and only 23% of the teachers were able to find time for themselves (Table 8). The teachers' perceived stress and anxiety levels dropped 30%, but 48% reported increased stress and anxiety as a direct result of the flex block.

Table 8

"How Do You Primarily Use Your Flex Time?"

Responses	Total teacher count	Total teacher %
To complete school work (planning, marking, etc.)	15	32.6
Collaboration time with colleagues	5	10.9
Student supports	37	80.4
Wellness activities (gym, loft, yoga, etc.)	8	17.4
Personal break	3	6.5
Other	6	13.0

These data suggest that teachers were continuing to provide important student supports, but they also demonstrate that flex blocks did not support their wellness needs as they had initially hoped; more important, it actually increased their stress and anxiety levels (Table 9). This is a major concern that needs to be addressed because employee satisfaction is a significant contributor to the educational environment for all stakeholders (Watson et al., 2010).

Table 9

"The Flex Block Has Reduced My Daily Stress and Anxiety Levels"

Rating scale	Total teacher count	Total teacher %
Strongly agree	2	4.3
Agree	12	26.1
Undecided	10	21.7
Disagree	16	34.8
Strongly disagree	6	13

Connections.

***Students*.** Throughout the flex block semester the school surveyed the students on their connections with adults in the building. Table 10 shows that in the baseline survey over one quarter of the students (25.4%) stated that they had no strong connections with any adults in the building.

Table 10

"I (Student) Have a Strong Connection With ____ Adult(s) in the Building"

	Student survey 1		Student survey 2		Student survey 3	
No. of connections	No. of responses	%	No. of responses	%	No. of responses	%
0	248	25.4	144	22.5	107	17.5
1-2	426	43.6	271	42.4	290	47.3
3-4	222	22.7	148	23.2	156	25.4
5-6	50	5.1	49	7.7	27	4.4
7+	30	3.1	27	4.2	33	5.4

This number decreased to 22.5% during the midway survey and again on the final survey to 17.5%. This marked decrease shows that flexible learning environments helps individual students because their teachers can more readily express care and concern for them (Quint, 2006; Quint et al., 2008).

Table 11 also reveals student-teacher connections and shows the students' perceptions of adults who care for them. Throughout the course of the flex block implementation, improved perceptions of care are evident. During the five-month period, the numbers shifted to demonstrate evidence of a more caring environment. This change in environment also improves

students' likelihood of success in school (Ellerbrock & Kiefer, 2010; Ellerbrock et al., 2014; Jackson & Davis, 2000; National Middle School Association, 2010).

Table 11

"Adults in This School Care About Me (Student)"

	Student survey 1		Student survey 2		Student survey 3	
Rating scale	No. of responses	%	No. of responses	%	No. of responses	%
Strongly agree	98	10	111	17.4	118	19.2
Agree	472	48.4	294	46	292	47.6
Undecided	304	31.1	169	26.4	140	22.8
Disagree	64	6.6	40	6.3	34	5.5
Strongly disagree	38	3.9	25	3.9	29	4.7

Teachers. At the conclusion of the flex block semester, the school surveyed the teachers on their connections with students in the building. As Table 12 demonstrates, 63% of the teachers believed that flex blocks increase their connections with students, whereas only 6.5% disagreed.

Table 12

"I Believe That Flex Has Given Me the Opportunity to Build More Connections With Students"

	Total teacher count	% of teacher count
Strongly agree	6	13
Agree	23	50
Undecided	14	30.4
Disagree	3	6.5
Strongly disagree	0	0

The 30.4% of teachers who were undecided could also be attributed to the short-term nature of this implementation. Regardless, the importance of teacher-student connections is evidenced here and in the literature that I discussed previously. A personal connection is undoubtedly of benefit to both teachers and students (Split et al., 2011).

Workload.

***Students*.** During the flex block semester, the survey asked the students if balancing their school workload and personal interests was manageable. The three surveys revealed an increase in the number of students who considered the balance manageable (Tables 13 and 14); specifically, there was a 31% increase from the baseline survey (46.8%) to the concluding survey (77.8%).

Table 13

"I (Student) Find Balancing My School Workload and Personal Interests Manageable"

Rating scale	Total student count	% of student count
Strongly agree	82	8.4
Agree	375	38.4
Undecided	241	24.7
Disagree	190	19.5
Strongly disagree	88	9

Note. Baseline data collected by the central Alberta high school.

Table 14

"Flex Makes Balancing My School Workload and Personal Interests More Manageable"

Rating scale	Survey 2	Survey 2 %	Survey 3	Survey 3 %
Strongly agree	183	28.6	239	39.0
Agree	259	40.5	238	38.8
Undecided	113	17.7	78	12.7
Disagree	56	8.8	32	5.2
Strongly disagree	28	4.4	26	4.2

Arguably, this increase also reflects improved psychological well-being, physical health symptoms, and sleep patterns and attention to the needs of individual students, as High School Redesign and *Inspiring Education* indicated (Galloway et al., 2013; Alberta Education, 2010).

Additionally, Table 15 demonstrates a small but marked decrease in homework time outside school hours. These data shows a movement towards a more manageable workday for students (Galloway & Pope, 2007).

Table 15

"In a Week, How Much Time Do You Spend Working on Homework Outside of School Hours?"

	Student survey 1		Student survey 2		Student survey 3	
Responses	No. of responses	%	No. of responses	%	No. of responses	%
0	83	8.5	62	9.7	70	11.4
1-2 hours	400	41.0	261	40.8	265	43.2
3-4 hours	251	25.7	176	27.5	148	24.1
5-6 hours	135	13..8	86	13.5	82	13.4
7+ hours	107	11.0	54	8.5	48	7.8

Teacher. As with the students, the survey also asked the teachers if flex blocks made balancing their school workload and personal interests more manageable. Only 23.9% stated that they did, 47.8% disagreed, and 28.3% were unsure (Table 16).

Table 16

"Flex Makes Balancing My School Workload and Personal Interests More Manageable"

Rating scale	Total teacher responses	% of teacher responses
Strongly agree	1	2.2
Agree	10	21.7
Undecided	13	28.3
Disagree	20	43.5
Strongly disagree	2	4.3

These data suggest that although flex blocks were intended to benefit both teachers and students, the teachers' workload balance was not at the same level as the students'. Whereas the literature suggested that flexible learning environments give teachers time to encourage excellence and grow personally, the data from this school show the opposite (Dibbon, 2004). Fortunately, the amount of school work outside school hours decreased over the course of the flex block semester (Table 17). Although it remains to be seen whether this can be attributed entirely to the flex blocks, it is still encouraging data, especially in the face of the excessive nature of job-related teacher duties that result in many Albertan teachers working a minimum of 60.8 hours a week (Duxbury & Higgins, 2013).

Table 17

"In a Week, How Much Time Do You Spend on Schoolwork (Planning, Marking, etc.) Outside of School Hours?"

	Teacher survey 1		Teacher survey 2	
Responses	No. of responses	%	No. of responses	%
0	0	0	1	2.2
1-2 hours	3	4.5	1	2.2
3-4 hours	11	16.7	15	32.6
5-6 hours	14	21.2	8	17.4
7+ hours	38	57.6	21	45.7

Future Considerations and Recommendations

Over the course of the flex block implementation, the positive potential of flexible learning environments was evident. The students and teachers were largely receptive to the journey of exploring alternative structures to support student-centered learning. Both overwhelmingly urged the administration to continue the flex block system, as Tables 18 and 19 indicate. However, throughout the study of the implementation of flex blocks, the researchers noted areas of growth and improvement in the structure of the educational environment for both teachers and students.

The flexible nature of the flex blocks allows students to prioritize their learning and teachers to provide academic support to students. Their far-reaching benefits are evident in the data that the researchers have discussed. However, the changes in structure still require some attention. The central Alberta high school introduced flex blocks three days a week and thus created six different schedules within the school (Appendix). As the administration noted, this

has created confusion and organizational problems in a school of this size. To reduce these issues, the school needs to create a unified and consistent timetable.

Table 18

"I Believe That Flex Benefits Our Students"

Rating scale	Total teacher responses	Teacher responses %
Strongly agree	6	13.0
Agree	30	65.2
Undecided	8	17.4
Disagree	2	4.3
Strongly disagree	0	0

Table 19

"I Think Our School Should Continue With Flex"

	Student survey 2		Student survey 3	
Rating scale	No. of responses	%	No. of responses	%
Strongly agree	344	53.8	397	64.8
Agree	147	23.0	104	17.0
Undecided	87	13.6	57	9.3
Disagree	23	3.6	18	2.9
Strongly agree	38	5.9	37	6.0

Teachers. During the flex block implementation, the teachers' connections with students increased (as Table 12 shows). This is a predicted and welcome advantage of the more flexible learning environment. However, despite this advantage, the teachers did not find that balancing their school and personal-life workload was more manageable with the addition of flex blocks

(see Table 16). To address this discrepancy, the researchers recommend that additional time be built into the timetable for curriculum redesign, colleague collaboration, and personal time.

Students. The flex block initiative has had many benefits for students; they include lowered stress and anxiety (indicative of increased wellness), more connections with adults in the building, and better management of school and personal-life workload balance (as Tables 1, 4, 10, 11, and 14 show). Although these results are positive, with continued examination and adjustments, the flex block initiative could further help students to succeed intellectually, spiritually, physically, and mentally (Lemon & Watson, 2011). For example, if flex blocks are to support all students successfully, a measure of accountability and a shift in philosophy from a model of student choice to one of privilege are required. Teachers should be able to assign students who do not meet the minimum standards to academically focused flex blocks. To ensure equity across all subject areas, the researchers recommend that priority days be established to ensure that students have access to equal supports in all subject areas.

Conclusion

The flex block implementation validated research in the field of flexible and student-centered learning environments. This implementation created a framework to illustrate the potential benefits of redesigning the traditional school timetable to meet the needs of 21st-century learners and teachers, as Alberta Education (2010) envisioned in *Inspiring Education*. The organic nature of this flexible learning approach encourages and promotes ongoing evaluation, reflection, and growth. With this in mind, students and teachers will find endless opportunities for success.

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Appendix: Grade 9 and High School Timetables

Table A1

Grade 9 Timetable

	Monday/Wednesday/Friday		Tuesday/Thursday	
Period	Day 1	Day 2	Day 1	Day 2
1	9:00am – 9:45am		9:00am – 9:55am	
2	9:50am – 10:35am		10:00am – 10:55am	
3	10:40am – 11:25am		11:00am – 11:55am	
Flex	11:30am – 12:25pm			
Lunch	12:25pm – 1:15pm		11:55am – 12:45pm	
4	1:15pm – 2:25pm	1:15pm – 2:25pm	12:45pm – 2:10pm	12:45pm – 2:10pm
5	2:30pm – 3:40pm	2:30pm – 3:40pm	2:15pm – 3:40pm	2:15pm – 3:40pm

Table A2

High School Timetable

Period	Monday / Wednesday / Friday	Tuesday / Thursday
1	9:00am – 10:10am	9:00am – 10:25am
2	10:15am – 11:25am	10:30am – 11:55am
Flex	11:30am – 12:25pm	
Lunch	12:25pm – 1:15pm	11:55am – 12:45pm
4	1:15pm – 2:25pm	12:45pm – 2:10pm
5	2:30pm – 3:40pm	2:15pm – 3:40pm