RESEARCH-BASED TEACHING STRATEGIES:
IMPROVE ENGAGEMENT, STUDENT ACHIEVEMENT AND
PROMOTE LIFELONG LEARNERS

by

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Abstract

Student engagement has direct links to academic achievement. The problem investigated in this study is the role teachers play in ensuring students are engaged in the learning process in order to minimize boredom and maximize learning. The purpose of this study was to raise teacher awareness about the importance of student engagement, and to examine research-based teaching strategies that can be incorporated into the repertoire of a teacher to improve student engagement and inspire lifelong learners in a Central Alberta school jurisdiction. The project focused on teacher pedagogy to determine if a more authentic, hands-on, inquiry-based approach to teaching and learning would improve student motivation and achievement in a rural school in Central Alberta. The problem was investigated in two Grade 5 classrooms that incorporated a more authentic, inquiry-based learning approach through collaborative projects that encompassed a unit of study in Science and Social Studies. The study examined the influence that teacher-student, student-student and teacher-teacher relationships have on student learning and the effect that purposeful teaching strategies that incorporate student voice and choice and real-world application have on student engagement and student learning. Although it was difficult to determine the precise impact on student achievement as a result of the change in instructional delivery, all other aspects of the study concluded positive change in student engagement when a more authentic, active-learning, inquiry-based approach was administered and the students were given voice and choice in their learning. For future research, it would be recommended that this group of students be followed and asked to complete a more in-depth study that involves a direct comparison of teaching methodologies that include aspects of more traditional teaching compared to the more authentic, hands-on, inquiry-based approach utilized in this study.
Keywords:

Engagement, Pedagogy, Student learning, Project-based learning, Inquiry-based learning, Hands-on learning, Authentic learning, Lifelong learning, Motivation, Teacher education, Collaboration
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Chapter 1: Introduction

Student engagement has direct links to academic achievement; Steinmann, Beauchamp, Kuntz and Parsons (2013) emphasized that when engagement levels are high, student learning is maximized. Jensen (2005), a former teacher, now with a Ph.D. in Human Development has studied the brain extensively and concluded that authentic, relevant activities in which students actively created their learning improved student engagement and retention of the material. Engagement, as defined by Marzano, Pickering & Heflebower (2011) answers the question of importance and self-efficacy for students. Exploring the areas of student engagement and authentic learning opportunities, Hallermann, Larmer and Mergendoller (2011) emphasized that authentic, project-based, hands-on learning opportunities improve engagement, increase student achievement and help develop lifelong learners. Juliani (2015) reiterated that the 21st century workforce is all about learning. He stated that we are educating students for jobs that do not yet exist. This statement echoed the importance of developing skills in students that can be utilized across many facets of society in order to develop people who can successfully respond to the learning demands of life. The remainder of this chapter will focus on the importance of student engagement as it relates to academic achievement, the role of the teacher in designing experiences for students that motivate them to become lifelong learners and definitions of terms used in the research findings.

Background to the Problem

Student engagement is not a spontaneous occurrence. Marzano et al. (2011) emphasized that student engagement occurs as a result of teachers’ careful planning and execution of research-based pedagogy. In relation to teaching strategies and student engagement, Robinson (2010) stated that we are attempting to meet the needs of the future using methods from the past and, along the
way, we are alienating students who do not see the purpose of attending school. Alberta Education (2010) outlined that education is more than just about preparing people for the world of work in Inspiring Education (2010). The document encouraged the development of learners who view learning as a lifelong endeavor and value the opportunity to investigate the world around them to discover their passions. These values would be difficult to achieve if students are not able to see the purpose behind attending school, hence the need for what Newmaster, Lacroix and Roosenboom (2006) described as a paradigm shift in education focused more on student learning than content.

Steinmann, et al. (2013) stated that Alberta Education has re-shaped their curriculum to become more student-centered. The language used in the updated curriculum documents emphasized student voice and choice, real-world connections, collaboration with others and effective use of technology to guide a philosophical change to an education system focused on students who are actively engaged in the learning process.

Statement of the Problem

Research conducted by Fullan (2013) concluded that students are becoming increasingly bored in school, especially as they progress from grade to grade. The problem investigated is what role teachers play in ensuring students are engaged in the learning process in order to minimize boredom and maximize learning. In terms of student engagement, Schlechty (2011) believed that a teacher must have the ability to determine the level of engagement in their classroom and respond with research-based pedagogy when students are disengaged. The Teaching Quality Standard (TQS) document published by Alberta Education (2013) identified that a teacher must be able to analyze many variables and respond with a reasoned decision about their teaching practice and students’ learning. The repertoire of strategies utilized by teachers to
respond to disengaged students has evolved and as Juliani (2015) highlighted, teacher professional development is needed now more than ever to meet the rapidly evolving needs of students and society.

Alberta Education adopted the Ministerial Order (2013) which outlined an educated Albertan to be an engaged thinker, ethical citizen with an entrepreneurial spirit. Inspiring Education (2010) identified an engaged thinker to be a person who thinks critically, makes discoveries, innovates and communicates their ideas to others and as a lifelong learner, adapts to change with optimism and hope for the future. Furthermore, it acknowledged an ethical citizen to be an individual who builds relationships based on humility and fairness, demonstrates respect, empathy and compassion towards others and contributes fully to the community through teamwork, collaboration and communication. Inspiring Education (2010) recognized a person with entrepreneurial spirit to be one who creates opportunities through hard work and dedication, perseveres to accomplish goals, strives for excellence, challenges the status quo, is competitive, adaptable and resilient and who has the confidence to take risks in the face of adversity.

**Purpose of the Study**

The purpose of this study was to raise teacher awareness in regards to the importance of student engagement, and to examine research-based teaching strategies that can be incorporated into the repertoire of a teacher to improve student engagement and inspire lifelong learners in a Central Alberta school jurisdiction. Part of the teacher awareness component was to confirm the research by Jensen (2005) and Marzano et al. (2011) which concluded that teachers have significant influence over the levels of engagement displayed by the students in their classrooms; positive student-teacher relationships paired with well-planned learning opportunities can increase student engagement and achievement. Student voice and choice, cognitively complex
tasks with real-world application, student acceptance by teachers and peers and student perceptions of efficacy all impact student engagement and achievement. (Marzano et al. 2011).

**Research Hypothesis**

It is through established relationships that student needs are realized (Antaya-Moore, Bain, Fulton, Sautner, & Souveny, 2008). When student needs are not being met, Hallermann, Larmer and Mergendoller (2011) recommended a change in the instructional approach. Below are the essential questions that guided the research hypothesis for this project, which emphasized the need for positive relationships and closely monitored teaching pedagogy to adhere to the needs of students to be engaged in the learning process and in-turn value learning as a lifelong endeavor.

- What influence does teacher-student, student-student and teacher-teacher relationships have on student efficacy and student learning?
- What effect does purposeful teaching strategies that incorporate student voice and choice and real-world application have on student engagement and student learning?

Purposeful teaching methods that provide student voice and choice, cognitive complexity with real-world application, and elements of support through positive teacher-student, student-student and teacher-teacher relationships will improve student efficacy and engagement, which will have a positive impact on student learning.

**Importance of the Study**

Quality teaching is an essential component of student learning. Effective teachers possess the ability to adjust their teaching to meet the needs of their students and engage them in the process of learning. According to Marzano et al. (2011) “student engagement has long been
recognized as the core of effective schooling” (p. 3). When students are not engaged, it is not likely they will learn the intended outcomes of a particular lesson.

Effective teachers realize their role in the classroom. As it pertains to student engagement, Schlechty (2011) emphasized that who the teacher is and what the teacher does to design experiences that motivate students is important to what students learn. In order for student achievement to soar, Whitaker and Breaux (2013) believed that improved teaching was essential. In order to improve student learning, the classroom teacher must know their students’ needs and adjust their approach to meet these needs. Juliani (2015) believed that improved teaching required a shift in teacher mindset away from rote memorization of knowledge-based facts, to a system that intentionally infuses elements of critical thinking, communication, creativity, collaboration, inquiry and innovation so that students are better prepared for life outside of school. It is time, as Juliani (2015) emphasized, to change the traditional education system to better prepare students for the jobs and societal demands of the 21st century.

Definition of Terms

**Inspiring Education.** An Alberta Education (2010) publication that outlined the long-term vision for Alberta’s education system to the year 2030. The document summarized the views of the many Albertans who responded to questionnaires that were compiled to write the report. The document outlined what is ahead for tomorrow’s learner in the province of Alberta.

**Student Engagement.** The degree to which a student displays curiosity, interest, optimism and passion towards their learning.

**Authentic Learning Opportunities.** Educational and instructional techniques designed to connect what is learned in school to real-word issues and applications.
Lifelong Learner. A lifelong learner is a person who understands that learning is a lifelong endeavor. They seek opportunities for growth, explore career possibilities and adapt to change. They understand the importance of education, safety, financial literacy, and wellness. They make lifestyle choices based on healthy attitudes.

Project-based Learning. A teaching strategy designed to engage students to learn 21st century skills through a process of authentic, inquiry-based, hands-on, active learning opportunities in which students are provided voice and choice throughout the learning process.

Inquiry-based Learning. A learning process where students formulate questions and answers to problems, build new understanding, meaning and knowledge of the world around them and then communicate and share their learning with others.

Research-based Pedagogy. Instructional methods that have strong research to back their effectiveness.

Curriculum Standards. Expected knowledge, skills, and attitudes against which student performance is judged at every grade level.

Intrinsic Case Study. A study designed to develop theory, evaluate programs or develop interventions based on a complex phenomenon.

Teaching Quality Standard. A 2005 document published by Alberta Education that sets the standards that a practicing teacher must exemplify in order to teach in the province of Alberta.

Student Efficacy. A belief in the mind of a student that they have the ability to accomplish a given task or challenge.
**Student Voice and Choice.** Students have a say in what they learn and a variety of ways to show their learning. Providing student voice and choice is an aspect of a student-centered approach to learning.

**Cogitively Complex Task.** Tasks that challenge the learner to use information they have learned to solve real world problems, make decisions, conduct investigations, and generate a hypothesis for future learning.

**Gates MacGinitie Reading Tests (GMRT).** A timed reading test that assesses vocabulary and comprehension through a series of multiple choice questions that a student answers after reading a given passage.

**Tell Them From Me (TTFM) Survey.** An optional survey for students and parents in grades four through twelve in Alberta related to safe and caring schools and student engagement. From 2010 – 2013 the TTFM survey was administered to all students in grade 4, 7, and 12 as a pilot project designed to gather student engagement data. It is now optional for schools to partake in the survey but it is available for Grades 4 through 12.

**Scope of the Study**

This Capstone project involved reviewing the pedagogy of Grade 5 teachers to determine if a change in their instructional approach influenced student engagement in a rural Alberta Kindergarten to Grade 9 school. The school serves a diverse population of students with a wide variety of academic abilities. A number of students were below grade level according to the annually conducted Gates MacGinitie Reading Tests (GMRT). The main purpose of the study was to raise awareness of research-based teaching pedagogy that included aspects of authentic, project-based, hands-on learning opportunities designed to improve student engagement, increase student achievement and help inspire students to value learning as a lifelong endeavor.
The project did not involve working directly with the teachers in any other classrooms except Grade 5. It would be interesting to work with teachers that are assigned to teach the students from this focus group as they progress through middle school and incorporate aspects of authentic, project-based, hands-on learning opportunities to prove if what Fullan (2013) concluded regarding students being increasingly bored in school as they progress through the grades was actually an accurate interpretation.

**Summary**

Alberta Education (2013) adopted the Ministerial Order which described an educated Albertan to be an engaged thinker, ethical citizen with an entrepreneurial spirit. These attributes will be difficult for a student to achieve unless there is a paradigm shift in education that takes a more student-centered approach to teaching and learning to improve student engagement. A solution to this paradigm shift was posed by Wagner (2012) when he stated that teaching and learning environments that encouraged a person to actively pursue their passions using inquiry-based learning environments stimulated student engagement and positively impacted student achievement. Steinmann, et al. (2013) acknowledged that Alberta Education has done their part in terms of making curriculum more student-centered, which Schlechty (2000) emphasized to be essential in terms of getting students committed to and find value in what they are being asked to do. The challenge faced by teachers is to accept that they may need to change their teaching pedagogy in order to meet the needs of their students and accomplish the desired vision outlined in the Ministerial Order.

**Outline of the Remainder of the Paper**

This study is organized into four chapters. Chapter I includes the background of the problem, statement of the problem, purpose of the study and a research hypothesis. It also
includes the importance of the study, definition of key terms and the scope of the study. Chapter II includes a review of the literature which provides the research that was reviewed for the project. Chapter III offers a description of the methodology of authentic learning opportunities designed to increase student engagement and Chapter IV summarizes the study according to successes and areas of growth, as well as recommendations for further study.
Chapter 2: Literature Review

Review of Literature

Quality teaching is an essential component of student learning. A master teacher is one who has implemented the current professional development they have acquired, modified their pedagogy and collaborated with their colleagues to share their craft knowledge in an attempt to meet the needs of their students. Brooks & Gibson (2012) emphasized the importance of face-to-face interaction so teachers feel supported by one another. Essentially, teacher development should be collegial, ongoing and equal to or exceed that of student development. Just as we expect students to grow and develop over time, so too should teachers. As Juliani (2015) and Darling-Hammond & Snyder (2015) emphasized, teacher professional development is needed now more than ever to meet the rapidly evolving needs of students to better prepare them for the jobs and societal demands of the 21st century.

Alberta Education (2013) adopted the Ministerial Order which outlined an educated Albertan to be an engaged thinker, ethical citizen with an entrepreneurial spirit. Alberta’s teachers are challenged to critically examine their pedagogy and alter aspects of their approach in order to accomplish the vision set forth by the Ministerial Order. Well-structured, authentic learning opportunities enhance collaboration and communication between students and teachers which helps increase student engagement. Fullan (2013) emphasized the importance of teachers and students learning alongside one another in order to create and sustain the educational reform that is required to meet the needs of our students. Increased student engagement is a significant consideration if the goal of education is to improve academic achievement and promote lifelong learners. Connor (2011) believed that providing teachers with specific strategies to improve student engagement is a logical first step to combat the engagement gap and as Steinmann, et al.
(2013) reiterated, students must be engaged in order to maximize learning. Authentic, inquiry-based, hands-on learning opportunities, blended with more traditional teaching methods could help close the engagement gap.

**Need for the Study**

After extensive studies related to student engagement, Marzano et al. (2011) concluded that engagement is the key to effective schooling. The perceived engagement gap observed in a rural school in Central Alberta mirrored what Fullan (2013) described when he stated that students are increasingly bored in school especially as they progress from grade to grade. Alberta Education (2012) analyzed a year’s worth of data collected from the Tell Them From Me Surveys from 2011-2012 and concluded that learning and engagement go hand-in-hand; engagement leads to learning and learning leads to engagement. The survey is designed to provide students with a voice for their learning. Based on the results of the 2011-2012 survey, the percentage of students classified as engaged decreased significantly between Grade 7 and Grade 12. Alberta Education (2012) emphasized that schools must learn from and emulate other schools where engagement levels were maintained or increased as students progressed through the grades. The initial step in this process is to raise teacher awareness of the importance of student engagement and collaborate with colleagues to produce authentic learning activities that motivate and engage students. As Love (2000) addressed, inquiry-based schools, teachers and administrators continually seek to improve student learning, experiment with new ideas, utilize data to uncover problems and monitor results in order to continuously improve. Essentially, teachers in effective schools monitor their pedagogy, make changes when required and work together to meet the needs of their students.
Historical Background

The Industrial Revolution model of education, as stated by Sir Ken Robinson (2010) notoriously labelled people as either academic or non-academic. This is evident in our classrooms today. A major cause of students not being engaged in learning is that they may come to school with a preconceived notion that they are not smart, so they disengage before putting in an honest effort to succeed. Often, as Antaya-Moore et al. (2008) identified, this notion stems from repeated failure in the student’s past. Differentiated instruction and flexible learning environments have the potential to reduce these thought patterns in students. Antaya-Moore et al. (2008) and Darling-Hammond & Baratz-Snowden (2007) believed that teachers need to make learning activities flexible enough to meet the needs of the student and challenging enough to keep them engaged. Student engagement is not easily achieved in the Industrial Revolution model because the system does not allow for enough flexibility in terms of modifying the learning environment to meet the needs of every child.

In order to meet the needs of every child, a paradigm shift is required in education. Gibbs (2001) addressed the need for a pendulum swing away from traditional whole-group instruction to a focus on active learning groups facilitated by the teacher. The paradigm shift outlined by Gibbs (2001) resembled a gradual release of responsibility model where teachers do less direct instruction and act more as a resource facilitator of learning. The teacher’s primary responsibility is to engage students, allow them to explore their passions and connect their learning to the past, present and future in a safe and supportive environment. Jenson (2005) concluded that “when students are actively involved in something they care about, motivation is nearly automatic” (p. 110). When students are motivated to learn, their engagement levels increase which contributes positively to student growth as a learner. Gibbs (2001) suggested that the primary responsibility
of the education system is to assure the healthy development of every child so that each has the knowledge, skills, and resiliency to be successful in a world of rapid change. For many teachers, this release of responsibility and control could be difficult. Gibbs (2001) emphasized that teachers must support each other, coach one another and critically reflect on their progress in order to reach and teach students more effectively.

**Collaboration**

Effective teacher collaboration can have a positive impact on student learning. Barth (2006) believed that if educators disclosed their rich craft knowledge to one another they could transform schools. With increased societal demands on schools, the need to share rich craft knowledge is required now more than any other time in the history of education. McLaughlin and Talbert (2006) stated that schools need to produce students with complex intellectual skills that are needed in society but missing in too many graduates. The challenge faced by educators is integrating 21st century skills into their curriculum in a way that challenges and engages the diverse groups of students that occupy classrooms. Teacher collaboration is essential in order to meet the needs of students and in the process, model essential 21st century skills.

**Importance of Relationships**

The integration of 21st century skills is an important consideration in the development of engaged learners but as Jensen (2005) emphasized, positive student-teacher relationships and meaningful task relevance need to be adhered to before specific competencies will be learned. Jensen (2005) reiterated that teachers need to constantly model the joy of learning and provide relevant opportunities for students to construct meaning based on their interests and experiences. As teachers attempt to meet the diverse needs of their students through the implementation of authentic, inquiry-based, active learning opportunities, collegial support from school
administration and fellow teachers is vital. As Barth (1990) stated, a good school is a place where everyone is a learner and everyone is a teacher simultaneously. Once this is realized by staff and students, more specific competencies can be developed through the integration of well-planned learning opportunities. Jenson (2005) directed a compelling quote towards teachers when he stated “you have far more influence over the volition and engagement of your students that you may realize.” (p. 103). This statement is important to remember as teachers plan learning opportunities for their students.

The first step in the planning process of teachers is the development of a safe and caring environment for students to learn. Darling-Hammond & Baratz-Snowden (2007) emphasized that effective teachers design well-structured, respectful classrooms that promote student productivity in order to meet the intended learning outcomes outlined by the teacher. Teaching is a dynamic and ever-changing profession in which educators are required to make decisions that impact the lives of others. Ideally, decisions are made in the best interest of the student in order to promote a safe and caring environment within the school. Under Section 45 (8) of the Alberta School Act (2010), the board is responsible for providing a safe and caring environment in all schools. MacKenzie et al. (2008) believed that every student benefits when they know that at least one adult in the school cares about them and wants them to succeed. Marzano et al. (2011) stated that student-teacher relationships are key to ensuring that students feel good about being in class and that they attend to class content. When students feel safe and attend to class content, authentic learning opportunities can enhance a student’s knowledge, skills and attributes obtained through the learning process.
Critical Reflection

In order to become more effective, teachers need to reflect on their pedagogy by asking themselves, why? Sinek (2013) challenged all organizations to start with why? In education, the answer to why should be grounded in what is best for students. If the goal of education is to develop students who value learning as a lifelong endeavor and develop 21st century competencies in the process, we may need to change our approach to ensure these qualities are adhered to and developed in students. It is through critical reflection that a teacher will realize change is required to improve their pedagogy. To improve pedagogy, teachers must focus on key elements of effective instruction. Robinson (2010) stated that students need to see the value and purpose in attending school. He believed this purpose has changed drastically over the years; from teachers being sources of information to teachers working with students to discover their passions and create people who value lifelong learning. Darling-Hammond & Baratz-Snowden (2007) believed that effective teachers engage students in active learning; they have high expectations and a belief that all students can be successful when activities are designed to meet their developmental needs. Students need to be provided with authentic, hands-on, inquiry-based learning opportunities if they are going to see the value in attending school.

Need for Change

A shared vision is especially important during times of rapid educational reform. Inspiring Education is an Alberta Education (2010) document which outlined the need for change in education. The document emphasized that education is more than just about preparing people for the world of work. It must also encourage learners to discover their passions and create people who value lifelong learning. Once the vision of the school is established, focused professional development (PD) can help transform current practice. Whitaker and Breaux (2013) suggested
that effective teaching practices can be taught using short, focused PD opportunities that can immediately improve teaching. Critical observation, supportive feedback and personal reflection promote the growth and development of educators. Whitaker, Casas and Zoul (2015) stated that educators need peer-to-peer interactions and reciprocal investments in order to grow as professionals. School leaders are pivotal in promoting effective collaboration amongst staff.

As professionals, teachers should evaluate their instruction and strive to improve their pedagogy at every opportunity. Alberta Education’s (2013) Teaching Quality Standard (TQS) document mandated that teachers understand how to work with others who are responsible for their evaluation and that they accept career-long learning as a professional obligation. The perceived gap of student engagement also holds true for teachers. Fullan (2013) explained that Meta-Life surveys have shown a dramatic decline in teacher satisfaction. Teacher evaluation and constructive feedback could not only improve pedagogy but may also improve job satisfaction. Whitaker (2015, Feb. 26) stated that teachers need to be in other teacher’s classrooms observing their teaching in non-judgmental, non-evaluative ways. If trust has been established amongst staff members, both teachers involved in the observation process can grow as professionals.

**Summary**

The research reviewed was summarized by Schlechty (2011) when he emphasized that who the teacher is and what the teachers does to design learning experiences that motivate students is important to what students learn. He reiterated that a teacher must have the ability to determine the level of engagement in their classroom and respond with research-based pedagogy when students are disengaged. Brain research conducted by Jensen (2005) supported Schlechty (2011) and challenged teachers to critically examine their approach to teaching. Teacher pedagogy is developed through focused professional development with an emphasis on teacher collaboration.
Positive collegial relationships help improve student and teacher satisfaction which fosters the growth and development of teachers and students. Authentic, hands-on, inquiry-based learning opportunities that provide voice and choice can help students see value in attending school which Robinson (2010) believed to be essential in the development of lifelong learners. If the goal of education is to develop lifelong learners, teachers need to adhere to the needs of their students and respond with well-structured, authentic activities that motivate and challenge students to think, collaborate and work together to develop 21st century competencies.
Chapter 3: Methodology

Introduction

Student engagement has shown direct links to academic achievement as stated by Steinmann, et al. (2013). Alberta Education (2010) is exploring a redesign of their curriculum to make learning more student centered in Inspiring Education (2010), making the timing of this project very supportive of educational growth. The study focused on purposeful modifications to teaching pedagogy to determine if previously conducted research represented the reality in two rural Central Alberta Grade 5 classrooms. The problem investigated was what role teachers play in ensuring students are engaged in the learning process and the effect that engagement has on learning. Engagement was looked at through the lens of student-teacher, teacher-teacher and student-student relationships and the impact that purposeful teaching strategies have on student engagement.

Hypothetical Research Design

If this project followed actual research protocols, a qualitative analysis comparing student engagement levels when traditional classroom teaching methods were applied versus an authentic, hands-on, inquiry-based approach would be utilized. Data would be collected using a combination of class observations and electronic student surveys. The surveys would include a combination of open-ended questions that require a text response and multiple choice questions that are analyzed using the Likert (1932) scale. The surveys would include sections related to what students liked most about authentic learning, how authentic learning made them feel about school, how authentic learning changed the way students learned, questions that compare authentic learning with traditional methods in terms of engagement, and recommendations for the teacher to help make authentic experiences more engaging.
The research would be an intrinsic case study of individual students. The data would be collected and analyzed before, during and after the implementation of authentic, hands-on, inquiry-based learning opportunities to measure student engagement. Students would be selected to participate in the study based on the targeted grade level selected by the researcher with all students in the class given equal right to participate. Ideally, the students would be in upper elementary so that they have the knowledge of what engagement is and the ability to compare traditional teaching to a more authentic approach. As the researcher might desire to follow the students as they progress through their schooling to determine the validity of Fullan’s (2013) work where he stated that students become less engaged in their learning as they progress from grade to grade, upper elementary aged students would be a good starting point.

**Research Strengths**

The strengths associated with research related to student engagement include, but are not limited to, the following: exploring new teaching methods in an attempt to improve student engagement and develop students who think critically, problem solve, and develop a passion for learning in the process. Positive results could entice other schools to implement a more authentic, hands-on, inquiry-based approach which Alberta Education (2012) recommended. Teacher collaboration could improve as teachers share best practices, and most importantly the study is backed by research that supports a more authentic, hands-on, inquiry-based approach to teaching and learning as an effective means of increasing student engagement, student achievement and the development of individuals who value learning as a lifelong endeavor.

**Research Limitations**

Research involving students and teachers will have limitations. Some of the limitations include finding common time to collaborate with colleagues, finding the objectivity in results,
repeating the research with different groups, meeting existing curricular demands in terms of time, ensuring an adequate sample size is achieved to obtain accurate results without having too many participants, and removing personal bias out of the analysis of results.

Arguably, the most significant limitation might be attaining adequate teacher support to move away from traditional teaching methods, especially for those teachers who consistently achieve excellent results. Although this is a valid consideration, the desired result of this research is not to completely change all aspects of a teacher’s pedagogy but rather to have teachers critically analyze their craft and consider additional methods in order to meet the needs of all learners in their class and improve student engagement.

**Expected Results Based on Research Conducted**

If the research was conducted and the results resembled studies reviewed, it would conclude that implementing authentic, hands-on, inquiry-based teaching and learning opportunities in a safe and secure learning environment would improve student engagement and lead to improved student learning for most students. An important consideration is ensuring there is an emphasis on the development of the whole child, which includes but is not limited to positive teacher-teacher, teacher-student and student-student relationships designed to strengthen the overall school climate. The learning atmosphere and relationships created by the adults in the school will have significant impact on student achievement. Barth (2006) stated that “the nature of relationships among the adults within a school has a greater influence on the character and quality of that school and on student accomplishment than anything else” (p. 8). When a clear focus is recognized towards the development of the whole child and effective relationships are established, a more in-depth analysis of student achievement should conclude positive results when an authentic, hands-on, inquiry-based approach to teaching and learning is utilized.
Ethical Considerations

Participants in a study related to student engagement would be minors, so ethics would be highly regarded. A written permission form would be sent home for parent approval. The permission form would outline the study, explain that student confidentiality would be protected as names would not be used in the analysis of results, and participants, students and teachers would have the right to withdraw from the study at any time at their discretion. The aim of the study, rationale, and procedure would be outlined in the permission form. Participants would be debriefed regarding the study in class prior to receiving their permission form. At this time, the form would be read aloud with time allocated for individual student questions. The students would be instructed to take the form home and review it with a parent or caregiver. There would be a section in which both the student and their guardian would need to print, sign and date the form and then return it directly to the researcher. Contact information for the researcher would be provided with the form on a separate sheet of paper to be used as a reference later if desired by participants. The person in-charge to care for the child would be encouraged to phone or email if they have any questions or concerns. Phone calls would be documented in a log book and emails would be saved in an electronic folder to reference at a later date if required. Adhering to the ethical considerations of the University and the school division would be expected, with the primary concern being the needs of each individual participant involved in the study.

Summary

The intent of this project was to determine the impact that purposefully modified teacher instruction would have on student engagement. Student engagement is not a spontaneous phenomenon. Marzano et al. (2011) emphasized that student engagement occurs as a result of teachers’ careful planning and execution of research-based pedagogy. A significant strength of
this study is that research supports the movement towards a more authentic approach to teaching and learning to help students develop the knowledge, skills and attributes required to be successful in the 21st century. With significant curriculum change on the horizon in education, this study is timely in terms of working with and helping teachers realize the importance of student engagement. The role teachers play in ensuring their students are engaged in their learning in order to maximize the growth and development of the whole child, as emphasized by Marzano et al. (2011) is pivotal.

The major limitations of this study also hinge on the current state of curriculum re-design in Alberta. As Albertans wait for the re-designed curriculum, the current content heavy curriculum remains the focus of Alberta’s education system. The re-designed curriculum focuses on learner competencies as outlined by Alberta Education (2013) in the Ministerial Order. The learner competencies lend themselves well to authentic, hands-on, inquiry-based teaching and learning opportunities. The major change between traditional curriculum and the proposed changes in the new curriculum, as outlined by Alberta Education (2010) in their Inspiring Education document is a significant shift towards a more student-centered education system where the growth and development of the whole child becomes the focus with less of an emphasis on prescribed content outcomes.

The focus of this project was working directly with teachers to reflect on their pedagogy to determine if a more authentic, hands-on, inquiry-based approach versus a more traditional approach to teaching and learning would increase student engagement in two Grade 5 classrooms. If this study was replicated and student engagement data was collected, ethical considerations would be highly regarded as the majority of participants are minors. The students’ guardian, the student themselves and the teachers involved in the study would be made aware, in
writing, the aim of the study, rationale, and procedure along with the right to withdraw from the study at any point in the process. The study would focus on the development of the whole-child with the hope that through positive student-teacher, teacher-teacher and student-student relationships and high levels of engagement, the students will ignite a passion for learning and realize the importance of learning as a lifelong endeavor. Data would be collected directly from the students using open-ended questions linked to the Likert scale before, during and after the implementation of authentic, hands-on, inquiry-based learning opportunities to compare traditional learning with authentic learning. Current research would conclude that the implementation of an authentic, hands-on, inquiry-based approach to learning would increase student engagement, positively impact student achievement and ignite a passion for learning in the minds of the students.
Chapter 4: Summary and Conclusions

Summary

Student engagement is well documented and supported by research (Marzano, 2011; Steinmann, et al. 2013; Jensen, 2005; & Gibbs 2001) as an essential component of effective schooling. Jensen (2005) based his research on human brain development and concluded that engagement is necessary in order for learning to occur. Teachers must accept the importance of student engagement and structure learning opportunities that will engage the vast array of learners they may encounter in their classrooms, while developing meaningful relationships with their students and colleagues. This may require a change in their approach to teaching and learning as they attempt to meet the developmental, academic and psychological needs of their students.

As teachers perform their primary responsibility, student learning and the development of the whole child, research will lead them to accept student engagement as a primary responsibility. Providing opportunities for students to explore their passions and connect their learning to past, present and future experiences in a safe and supportive environment is crucial. According to Marzano et al. (2011), student voice and choice, cognitively complex tasks with real-world application, student acceptance by teachers and peers and student perceptions of efficacy all impact student engagement levels and achievement. In order for a teacher to incorporate all of these aspects into their pedagogy, they will require a paradigm shift in their thinking. This shift in thinking requires a teacher to seek the support of their colleagues, which Barth (2006) and Gibbs (2001) emphasized to be a critical aspect of a conducive learning environment. They concluded that teachers must be willing to support one another, coach each
other, share their craft knowledge and critically reflect on their pedagogy in order to reach and teach students more effectively.

Learner engagement is not an automatic response for most students. Marzano et al. (2011) and Schletchy (2011) emphasized that student engagement occurs as a result of who the teacher is, what the teacher does and the teachers’ careful planning and execution of research-based pedagogy. Authentic, project-based, hands-on learning opportunities, as supported by Hallermann, Larmer and Mergendoller (2011) improve student engagement, especially when there is an element of student voice and choice in completing real-world tasks that are relevant to the learner. The challenge for educators, as supported by Newmaster, Lacroix and Roosenboom (2006) is to move away from a content-driven methodology toward a more student-driven approach. The primary goal of a student-driven approach is the development of the whole child, which includes psychological considerations and academic development. When these needs are adhered to, it is more likely that students will develop a passion for learning, a genuine care for others and as Robinson (2010) emphasized, individuals who see value and purpose in attending school.

Proposed curriculum changes and a shift in the focus of education in Alberta are contributing to a more student-centered approach to teaching and learning in the province. The changes reflect updated knowledge, skills and attributes (KSA’s) deemed to be essential in order to be considered an educated Albertan. These KSA’s were arrived at by collecting input from thousands of Albertans who contributed to the Inspiring Education (2010) document. It is the teachers’ responsibility to modify and develop their pedagogy around the proposed curriculum changes in order to develop students who will acquire the desired KSA’s required to be
considered educated, successful and develop a passion for learning as a result of their human interaction and instruction.

Conclusions

The implementation of authentic, hands-on, inquiry-based learning opportunities in a safe and secure learning environment will increase student engagement and improve motivation for most learners. While implementing these learning opportunities, the focus of school needs to be the development of the whole child; which includes social-emotional needs as well as academic considerations. Positive teacher-teacher, teacher-student and student-student relationships designed to strengthen the overall school experience are essential in order to develop students who see value in attending school and the importance of lifelong learning.

The research reviewed supported a strong correlation between motivation and student achievement. Although difficult to determine as a direct result of this project, when a more authentic, hands-on, inquiry-based approach to teaching and learning is utilized, in a student-centered environment, student achievement will increase. For many educators, this paradigm shift will provoke significant changes to their pedagogy as the education pendulum swings more towards student needs than content. It is the responsibility of individual teachers, school-based administration and school jurisdictions to ensure research-based practices are implemented in the best interest of the student’s to keep them motivated and engaged in their learning.

Implications

As societal demands change, the education system needs to adapt to the changes in order to meet the needs of society. Juliani (2015) advocated for a shift in teacher mindset away from rote memorization of knowledge-based facts, to a system that intentionally infuses elements of critical thinking, communication, creativity, collaboration, inquiry and innovation. He reiterated
that these skills better prepare students for the jobs and societal demands of the 21st century. Most people would agree with this statement but the challenge faced by educators is that the current system in Alberta is focused on content with little time to deviate from direct teaching methods while attempting to accomplish curricular expectations.

Alberta Education’s (2012) TTFM survey conducted annually by participating schools has placed significant emphasis on student engagement and safe and caring schools. The results of surveys like this have contributed to Alberta Education’s (2010) Inspiring Education document which outlined the need for educational reform in the province. The Inspiring Education document led Alberta Education (2013) to a new Ministerial Order focused on learner competencies as opposed to specific learner objectives. This paradigm shift has brought about significant philosophical changes in teaching and learning as the focus of education shifts from a content-driven system to a student needs approach. These changes have forced teachers to critically examine their pedagogy in order to adhere to the expectations of the Ministerial Order while delivering the same content-driven curriculum while they anxiously await the arrival of the re-designed curriculum. The unknown of curriculum re-design and lack of direction from government authorities has placed many educators and school divisions around the province in limbo. The major implication for teachers and school jurisdictions is the need to balance workload. Expectations placed on teachers are routinely demanding and even more so during times of rapid change.

These implications affect a number of stakeholders. School divisions want to ensure their staff members are equipped with adequate professional development to handle the rapid changes in society which Juliani (2015) and Darling-Hammond & Snyder (2015) supported. School principals want to support their staff with time to collaborate and share best practices, which
Whitaker and Breaux (2013) and Barth (2006) believed to be an essential component of an effective school. Parents want to ensure the education their children are receiving will prepare them for the demands of society which McLaughlin and Talbert (2006) believed to be a significant concern as many current graduates, according to their research, are lacking many of the complex intellectual skills required to be successful in society today. Finally, the students themselves deserve an education that prepares them for the demands of life outside of school.

Students hold the answer to why the education system needs to change. Sinek (2013) believed that why needs to be the guiding question that all organizations need to ask themselves when looking at potential changes to the way they operate. In education, the answer to why we need to reflect on our pedagogy and make the required changes that will better prepare students for the demands of society is that it is what is best for students. It is not that everything from the past in education was bad or wrong, it is that our world has changed significantly in the past decade and it is time for our education system to evolve in the best interest of the students.

Recommendations

Based on the research reviewed to complete this Capstone project and a personal analysis of student engagement, it would be recommended that teachers critically examine their pedagogy and make the required modifications to improve levels of engagement in their classroom. Throughout the change process, teachers need to reach out to the educated minds around them, collaborate and share best practices. Whitaker and Breaux (2013) stated that in order for student achievement to soar, improved teaching is essential. To improve teaching, the staff as a whole must focus on key elements of effective instruction. School and division administration need to support the efforts of the teachers, share their craft knowledge as outlined by Whitaker (2012) & Barth (20060 and ensure that teachers are provided with continuous, job-embedded professional
development which Shannon and Bylsma (2007) believed to be most beneficial for changing instruction and improving student learning. Juli ani (2015) emphasized that professional development is needed now more than any other time in the history of education in order to prepare teachers to meet the rapidly evolving demands of society.

In order to build and sustain a strong school climate where staff and students maximize their growth and development, all stakeholder groups need to develop effective relationships through a shared vision. Alberta Education (2013) adopted the Ministerial Order which outlined an educated Albertan to be an engaged thinker, ethical citizen with an entrepreneurial spirit. All stakeholder groups share the responsibility of working together to accomplish these goals. Marzano et al. (2011) stated that relationships are key to ensuring that students feel good about being in class and that they attend to class content. The learning atmosphere and relationships created by the adults in the school will have significant impact on student achievement as outlined by Mackenzie et al. (2008).

For future research, it would be recommended that a group of students be followed in a long term research project to determine the influence that teacher pedagogy and student-teacher relationships have on student learning. Throughout the process, teachers would be reminded of the importance of student engagement and the profound statement made by Jensen (2005) when he reiterated that teachers have far more influence over the volition and engagement of their students than they may realize. This statement was echoed by Marzano et al. (2011) when he concluded that teachers have significant influence over the levels of engagement displayed by the students in their classrooms; positive student-teacher relationships paired with well-planned learning opportunities can increase student engagement and achievement.
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