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Altered Books as a Form of Student Reflection about Constructivist Learning Experiences

Natasha Anne Toth

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Abstract

Improving student motivation and engagement in learning curriculum outcomes has become an increasingly difficult task in the 21st century. The purpose of this study was to discover if using constructivist teaching strategies, such as student group work, differentiated instruction, inquiry-based learning strategies, and experiential learning would increase student motivation and engagement, opposed to when commercially scripted programs, such as Saxon Math and Reading Mastery were used to teach lessons. An integral part of constructivist learning is the development of student metacognition (student self-reflective practice). The students in the study created an altered book (an existing book altered to consider the learning and creativity of the student) to document their experiences and thoughts about different learning activities that took place throughout the school year. Altered books are a form of artistic journaling where a pre-existing book is reworked to provide a new surface where images (drawings, collage, photography, etc.) and writing are used to document the author’s reflection.

The students’ altered books were interpreted at the end of the school year through qualitative data analysis to see what the books revealed about the participants’ engagement level and the ability of the participants to develop metacognition skills by reflecting on their learning. Kolb’s model of “Teacher as a Guide” and Thorpe’s “Theoretical Model of Reflection” were used as the basis for interpreting the metacognition and engagement level of the participants during learning activities based on constructivist methodology opposed to traditional teaching strategies.
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Chapter 1: Scripted Teaching Programs: A Source of Motivation or Disengagement

Research Overview and Context

Teachers want to see our students be successful and master the skills that we are trying to teach them. However, despite our best efforts, the percentage of students that earn a Dogwood is still low in British Columbia. Sixty-seven percent of non-Aboriginal students and forty-five percent of Aboriginal students earned their Dogwood in 2014 (BC Ministry of Education, 2014). The Aboriginal community I have worked in for the last eight years does all that it can to promote and encourage their youth to pursue an education. The school in the community, Coast Tsimshian Academy, works hard every year to research educational programs, assessment tools, and continues to develop teacher skills, to provide the students with the best possible education. Despite the high level of commitment from the staff at Coast Tsimshian Academy our students still have not achieved the same level of academic success as non-Aboriginal students; specifically in reading comprehension, writing, and numeracy (http://www.bced.gov.bc.ca/abed/perf2014.pdf).

Coast Tsimshian Academy partners with a larger organization, called First Nations Education Steering Committee (FNESC), which promotes Aboriginal education in British Columbia. The First Nations Education Steering Committee focuses on data collection and assessment to promote higher learning standards and achievements for Aboriginal students. After researching a variety of math and language arts programs, First Nations Education Steering Committee recommended (in 2009) that all their affiliated schools implement Saxon Math and Reading Mastery to help improve reading comprehension and numeracy skills in our students. At the time, Aboriginal students were scoring consistently lower than provincial standards by about twenty percent on the Grade Four and the Grade Seven Foundation Skills Assessment,
which is the main tool that the BC government uses to assess reading comprehension, writing, and numeracy across the province (http://www.bced.gov.bc.ca/abed/perf2014.pdf).

At the time, I fully believed that using scripted programs such as Reading Mastery and Saxon Math would improve my students’ skills in language arts and math. Scripted programs (programs that have very prescribed strategies and outcomes) are very regulated and standardized. The programs provide direct instruction on how lessons are to be taught, assessed, and expectations for student behaviour during instruction and seat-work. They provide a script (a written, word-for-word, prompt of what the teacher needs to say and questions they need to ask, often with set timing) with each lesson that the teacher follows. The use of scripted programs seemed ideal because, up until the last few years, Coast Tsimshian Academy had high teacher turnover and there was minimal communication between the staff about what topics or strategies we used in our classrooms. It was believed that using scripted programs and developing specific learning outcome standards as a school, for each grade level, would increase our students’ academic results when they were given standardized tests, such as the Foundational Skill Assessment, provincial exams, and the Canadian Achievement Test. As is common in most schools in British Columbia, and across Canada, since the 1980s there is a constant demand for students to be able to demonstrate and prove their academic skills through the use of standardized testing. The First Nations Education Steering Committee assured our school that using Reading Mastery and Saxon Math had increased the academic levels and testing results of their pilot school, Chalo School in Fort Nelson, using these programs. We even had staff from our school visit Chalo School to observe how the programs were used.

Using Reading Mastery and Saxon Math seemed ideal at first. I no longer had to scrounge around through multiple teaching guides or search online for worksheets. Everything
that I needed was right at my fingertips. The students appeared to enjoy the programs and as a staff we began to communicate more about how things were going in our classrooms. I felt that my students were retaining more of the lessons I was teaching, and that their reading and numeracy skills were improving. Then I switched from teaching Grade Two to Grade Four programs. I soon realized from examining and comparing my students’ scores on unit tests and standardized tests that they were not transferring strategies or content knowledge from the scripted programs to different types of assessments. While my students were becoming more successful at scoring higher grades on unit tests in *Reading Mastery* and *Saxon Math*, their scores on standardized tests such as the *Foundations Skill Assessment* and *Canadian Achievement Test* showed little to no improvement.

Most scripted reading programs, such as *Reading Mastery, Read Well, Project Read*, and *Open Court*, were created as a form of intervention to improve reading fluency and comprehension. These commercial programs have varying degrees of scripted instruction and set time allotments for lesson outcomes. At this time, *Saxon Math* is the only commercially scripted math program that I know of. In *Reading Mastery* and *Read Well*, students are given a placement test and their score determines which level of the program they will be placed at. This type of leveling sounds great in theory, but in reality, due to a lack of resources a teacher can end up with all their students working at the same level that the majority placed at. As Brownlie and Schnellert (2009) point out, “as long as we stay tied to one text for all students, we limit the learning of a large group of students” (p. 6). As all the texts and leaning material are provided in commercially scripted programs, there is no opportunity to cater to students’ unique interests. If the teacher has unmotivated readers or mathematicians, scripted programs may do little to improve these students’ academic skills or engagement.
After using scripted programs, for the last six years, I now resent them. Examination of data collected from the *Foundation Skills Assessment*, provincial exams, and the *Canadian Assessment Test* reveals that our students have made only minimal improvement in their reading comprehension, writing, and numeracy skills since the scripted programs were implemented. I am unmotivated by using the programs because every year I am teaching the same material exactly the same way over and over again. I believe that when the teacher is unengaged, so will the students find the work disengaging, although this is not always the case. The scripted programs account for every minute of my language arts and math blocks; therefore, there is little chance for me to try other strategies or activities. More drastically, I have seen how my students have disconnected from the learning process. What good are teaching programs that increase academic scores, but in the process make students detest reading and math? The majority of my students resent the rigid focus and lack of flexibility required by *Reading Mastery* and *Saxon Math*. Perhaps the biggest fault that I have found with the use of scripted programs is that they only meet the needs of the “middle of the road” students in my classroom. As the instructional level of both scripted programs in my classroom are aimed to meet the skills of the average ‘Grade 4’ student, and the lesson are inflexible, I find that they only meet the needs of the average C to B range student. Both *Reading Mastery* and *Saxon Math* do not provide the means to allow struggling students to catch up to their peers at grade level and have the potential to be tiresome for the higher achieving students.

The more research I conduct and professional development that I attend on the current approaches to teaching based on constructivist ideals, such as differentiated instruction, student group learning, experiential learning, and inquiry based learning, the more I realize that scripted programs are the antithesis of these teaching strategies. I believe that the constructivist
pedagogy promotes teaching strategies that will reignite my students’ passion for school and increase their academic abilities. I know it is vital to develop these strategies in my classroom because the new BC curriculum states that it wants teachers to change their teaching approach from: 1) learning information to learning to learn; 2) from a focus on data to discovery; 3) a move from one size fits all learning to tailored learning; 4) from testing to assess to assessing to learn; and 5) from classroom learning to lifelong learning, which matches constructivist pedagogy (http://www.gov.bc.ca/premier/attachments/PTC_vision%20for_education.pdf, p 2-3).

However, I am curious if using constructivist teaching strategies will actually motivate and encourage my students to learn. How will my students respond after years of being what I would observe to be as passive learners who are dependent on their teacher? What educational media can I use to assess my students’ engagement and growth with alternative constructivist teaching strategies?

**Significance**

Although there has been a lot of research conducted in the last couple of decades on developing effective learning environments by researchers such as Bartel (2012); Berger, Rugen & Woodfin (2014); Brownlie & Schnellert (2009); Douglas & Jaquith (2009); Dumont & Istance (2010); Hains & Smith (2012); and Kolb (2002, 2005, 2009, 2014); to better meet student needs and to increase student engagement; very little of it has focused on the impact of these teaching strategies with Aboriginal students. I hope that this study will provide more data on teaching methods that help Aboriginal students learn more effectively and increases their engagement. The BC Ministry of Education, through the Aboriginal Education Enhancement Agreement guidelines, acknowledges that the Ministry intends to “continually improve the quality of education achieved by all Aboriginal students through supporting strong cooperative,
collaborative relationships between Aboriginal communities and school districts; providing Aboriginal communities and districts greater autonomy to find solutions that work for Aboriginal students, the school and communities; and require a high level of trust to function” (https://www.bced.gov.bc.ca/abed/agreements/welcome.htm). The long history of residential schools has unfortunately left many members of the community where I work with a negative view of school and education.

There needs to be a high level of trust and respect between community members and Coast Tsimshian Academy to increase positive views towards the school and education. When trust in the school increases, parents and family members may be more willing to encourage their children to attend school and work towards their High School graduation. Currently this trust in education has not been fully restored and many older students do not attend class on a regular basis. Part of this apathy towards education comes from past teaching practice. According to the BC Ministry of Education, “British Columbian schools have not been successful in ensuring that Aboriginal students receive a quality education, one that allows these students to succeed in the larger provincial economy while maintaining ties to their culture” (https://www.bced.gov.bc.ca/abed/agreements/welcome.htm). I find that many of the students that attend Coast Tsimshian Academy are turned off by drills and memorizing facts that they cannot relate to. They are also unsure about what work would interest them as adults, and often feel that there are limited options available to them for employment. They may continue to lose interest and stop attending unless, as educators, we can promote teaching strategies that appeal to them as learners and which make them eager to come to school each day. Additionally, the students in Lax Kw’alaams need to be taught a curriculum that is relevant to their current culture and community.
As constructivist research points out, traditional teaching strategies consist of lectures and instructions where the learner is treated as an “empty vessel” waiting to be filled (Dewey, 1938; Douglas and Jaquith, 2009; Fox, 2001; Kolb & Kolb, 2009; Tyson and Low, 1987). Scripted programs may be touted as “intervention programs” that disguise their lessons under the label of group work, but in reality, the teacher is still the one in charge. Little student input is required other than their oral answers to questions. Chrenkra (2001) argues that programs that provide scaffolding while also engaging students actively and encouraging them to think for themselves would be preferable. Brownlie & Schnellert (2009) further state that “when all control seems to exist other than within the student, students may have difficulty maintaining their motivation for learning” (p. 5). To become effective and independent learners, students need to be engaged in what and how they are learning, and constructivist pedagogy provides strategies to meet this need.

I believe that embracing constructivist pedagogy will reignite a passion for learning within my students; however, my challenge is to overcome the teaching approaches that I experienced as a student and that I learned during my teacher training that promote data memorization, one size fits all learning, and a focus on hierarchical grading. Many of the teachers at Coast Tsimshian Academy also follow the traditional teacher-centered approach because it was how they were taught to teach and it is how they learned when they went to school. As a result, teachers may be unwilling to incorporate new teaching strategies such as student group work, inquiry-based learning, self-assessment, and experiential learning into their classroom. Hyslop-Margison & Strobel (2007) further elaborate that “teachers and students do not like to change their minds- particularly if that change includes considering ideas radically different from those they presently hold” (p. 78). I have observed that the students at Coast
Tsimshian Academy appear to be more comfortable with teacher-centered learning because it is what they are familiar with even though they find most school work monotonous; they have experienced very little learning with constructivist teaching strategies.

Research shows that students may resist constructivist teaching strategies when traditional teaching practices allow them to sit back and passively absorb information (Chrenka, 2001; Fox, 2001; Hyslop-Margison & Stobel, 2007). Chrenka adds that “students will often adopt a ‘wait-it-out’ attitude, investing minimal attention in the learning process” (p. 694). However, student engagement during lessons is critical. Marks (2000) found that students who are engaged with school are more likely to learn, to find the experience rewarding, to graduate, and to pursue higher education. As Robinson (2011) states, “all students have different interests, and learning styles. What and how they are taught has to engage their energies, imaginations and their different ways of learning. No one can be made to learn against his or her will” (p. 251). I have observed this teacher dependency on many occasions in a variety of Aboriginal communities and grade levels, and have often wondered if I was encouraging this dependency unintentionally.

I feel many times I end up coaching my students through each step or end up doing their work with them because they exhibit low confidence in their ability to work independently. While older students I have taught hide their low confidence by acting like they do not care, my younger students have a strong desire to be recognized as the best student in the class. Even my strongest Grade Four students want an adult to sit with them and watch everything that they do because they are either afraid or not willing to make mistakes. Despite my attempts to reassure them, most of my students are afraid that any mistake they make or feedback on how to improve their work means they are inferior, instead of seeing it as a chance to work on bettering their
skills. Constructivist teaching strategies that encourage students to become independent and
self-regulated should help my students to feel confident in their abilities even if they are
struggling.

Working with young students, especially Aboriginal students, means that I will have
limited options available for data collection. Reflective journal writing is a non-invasive way of
collecting data about how participants in the study feel about different teaching strategies that
will allow me to collect data while honoring ethical requirements on age and ethnicity. Journal
writing promotes thinking and learning because it encourages students to personalize their
learning, develops cognitive and metacognitive skills, improves comprehension, improves
retention, demonstrates synthesis, evaluation, experimentation, increased problem solving skills
and enhances reflection (Anderson, 1992; Ash & Clayton, 2004; Cornish & Cantor, 208; Dyment
& O’Connell, 2010; Dunlap, 2006; Fahsl & McAndrews, 2012; Gregg, 2009; Langer, 2002;
Thorpe, 2004). Using reflective journal writing will help lead students to a “higher level of
engagement with the task at hand, as well as to a greater sense of responsibility for their own
learning in general” (Joseph, 2003, p. 110-111). Additionally, journaling is an effective way to
develop the metacognitive ability of students.

Metacognition in the simplest terms can be thought of as the ability to ‘think about ones
thinking’. According to Vos & de Graff (2004) metacognition:

allows learners to distinguish between what they already know and what they do not yet
know; to develop alternative ways to solve a given problem, to compare these and/or
choose the best; and to keep a goal in mind during problem solving. (p. 545)

While there is a wealth of research, on which to base this study, about metacognition, journaling
and reflective journaling by researchers, such as Ash & Clayton (2004); Boud (2001); Cornish &
Cantor (2008); Dyment & O’Connell (2006); Gregg (2009); Hayman, Wilkes & Jackson (2012); and Thorpe (2004); the majority of this research has been conducted at the secondary school level or at the post-secondary level. My hope is this research study will provide more insight into the usefulness of journaling with younger students, especially the use of reflective journaling as a tool to increase metacognition.

At this time, I found no research on the use or impact of using the altered book as a journaling tool. Altered books are a form of journaling where the writer reuses pages from an existing book by painting over the original text (see Figure 1, p. 10 and Figure 2, p. 11). New words and images are written down in the pages of the book, and, in some cases, the original text or images can be incorporated into the new journal entry. Altered books not only look amazing, but I felt originally, and continue to feel they will allow my younger students a chance to express their ideas and bolster their confidence through a mix of writing and imagery.

*Figure 1: Example of altered book page incorporating original text.*
Figure 2: Example of artist altered book page that has been redesigned with new imagery and text.
(http://www.galleryhip.com)

Throughout the year, participants will work on writing reflections about the constructivist learning strategies that were used each week. The participants will be provided with a list of questions and prompts to answer each time in their reflections. As Langer (2002) points out, “it is important for teachers to teach key concepts and provide guidance to help students understand the concept of critical reflection” (p. 347). The participants will then create pages in their altered book that expresses and represents their reflections through the use of artistic imagery and writing (see Figure 3, p. 12). The altered books will be collected at the end of the school year to examine qualitative data about the impact of constructivist teaching strategies on student engagement and the benefits of regular reflection for younger students.
Figure 3: Example of participant altered book entry where original page has been reworked with paint, imagery, and text.

Through the use of constructivist pedagogy, I hope to turn my classroom into an effective learning environment. During my research study, I will use teaching strategies, such as differentiated instruction, student group work, experiential learning, inquiry based learning, metacognition, and reflective journal writing to engage my students in the learning process. As Gager (1983) states, “the process of learning by experience occurs when the learner is placed into a demanding reality context, which necessitates the mastery of new, applied skills followed immediately by responsible, challenging action coupled with an opportunity for critical analysis and reflection” (p.33). New learning can be reinforced by developing students’ metacognitive skills by teaching them to become more critically reflective. This type of deep reflection can be documented through the use of journaling: specifically the creation of an altered book. The pages of the altered book may be used by my students to illustrate their learning and “its influence in his or her life” (Cobb & Negash, 2010, p.62). The altered books that the students in my
classroom create will allow me to examine their learning preferences through the use of qualitative data analysis.

A Change in my Teaching Approach: My Research Questions

My years of following a teacher-centered approach to instruction in my classroom and using commercially scripted programs, such as Reading Mastery and Saxon Math, have led me to the conclusion that my past approach to teaching has failed to meet the needs of my students. Attending professional teaching workshops and working towards my Master’s degree has encouraged me to use student-centered teaching strategies to engage my students and to focus on skills, such as problem solving and teamwork. This lead to my current study that will try to answer the following questions: If I explore the use of constructivist teaching strategies, such as hands-on learning, student group work, inquiry based learning, and experiential learning in my classroom, will I notice a difference in the level of engagement in my students? What will the use of altered books reveal about this engagement? How does the use of altered books develop the ability of younger students to effectively reflect on their learning? Through a qualitative methodology using my research journal, getting feedback from my students through the entries in the altered books they create, and through my reflections in this unique educational culture I hope to find answers to these questions.
Ethnographical Context

The study will involve ten students from the Grade Four classroom at Coast Tsimshian Academy, an Aboriginal independent school, located in Lax Kw’alaams, British Columbia, Canada. They will take part in a six month research study about the use of altered books as a form of reflective journaling. The altered books will be used as a form of assessment and feedback to assess whether the participants were more engaged and preferred learning activities based on constructivist theories or if they preferred scripted programs. The main purpose of journaling is to document and reflect on experiences as a “way of thinking, understanding, and learning” (Hayman, et al., 2012, p. 28). Journaling is a non-invasive way to record feedback from younger students. Data collected from the participants’ altered books will be interpreted using qualitative research methodology to determine the participants’ feelings and views about constructivist teaching strategies. I will also record observations and notes in a researcher’s journal that will allow me to describe my research journey as a form of auto-ethnography. In my dual role as researcher and teacher it will be difficult to separate my students’ findings from my own experiences as their teacher. Auto-ethnography will allow me to better base my findings in the cultural context of the Aboriginal community that I live and work in.

Living as a guest in an Aboriginal community it is important to respect the culture and the traditions of the Indigenous group that I am living amongst. Living in Lax Kw’alaams for a number of years has allowed me to develop connections with members of the community in very integral ways. Living in a small community means that you are always interacting with your students and their family members both inside and outside the school. I often take part in community events and attend cultural feasts. As I have lived in the community for eight years it shows that I am committed to the community and my students. Families of students I have
taught trust and respect me and make me feel like a valued member of the community. At the same time, I respect that I am a guest and do not take part in any of the political or governance issues that affect the community.

Stepping into the role of researcher, not just teacher, in my classroom it is important for me to gain a deeper understanding of research from an Aboriginal viewpoint. As many Indigenous researchers (Lavallee, 2009; Rich, 2012; Steinhauer, 2002) will point out it is important as a researcher to know the cultural protocols, values, and beliefs of the Indigenous group that you are studying. Steinhauer (2002) states that, “Indigenous research is more than getting answers to research questions”; it is about developing and respecting relationships that allows “the researcher to contextualize the information he or she is receiving” (p. 78). It also provides a level of protection that is “necessary in light of the history of genocide and cultural erasure and the ongoing inequities of power that have rendered one knowledge privileged in academia, while the other remains largely invisible” (Rich, 2012, p. 310). The data I will collect from this research study may help the students of the community of Lax Kw’alaams and all Aboriginal students to become more effective learners.
Terminology

The following terminology informs this research project:

1. **Scripted programs**: Scripted programs (programs that have prescribed strategies and outcomes) are strictly regulated and standardized. The programs provide direct instruction on how lessons are to be taught, assessed, and expectations for student behaviour during instruction and seat-work. They provide a script (a written, word-for-word, prompt of what the teacher needs to say and questions they need to ask, often with set timing) with each lesson that the teacher follows. Some programs allow more interpretation and flexibility in teaching instruction than others.

2. **Constructivism**: Constructivism is a pedagogical approach to teaching that encourages teachers and students to work together to develop strategies for acquiring new learning. The responsibility for learning is shared by everyone in the classroom, but with different roles (Mello, 2012). The teacher organizes activities and guides students where necessary. Students work alone or in interactive groups using discussion, experimentation, and inquiry to reach mastery of learning outcomes. Constructivist approaches to teaching can be varied but share these attributes (Alesandrini & Larson, 2002; Mello, 2012): 1) throughout the learning experience, meaning is constructed and reconstructed based on the previous experiences of the learner; 2) students work collaboratively so they can learn from one another; 3) students take an active approach and critical role in assessment; 4) students learn through discovery and experimentation with a variety of solutions; and 5) problems and learning should be “real-world” based.

3. **Experiential Learning**: Experiential learning is based on the work of John Dewey (1938). He believed that education needed to move away from viewing the teacher as being in
complete control to acknowledging the knowledge, beliefs, and values that students could bring to the educational process by working together with their teacher. Experiential education is the process of learning through “hands-on” learning. The learner is directly engaged and actively takes part in how and what they learn (Dewey, 1938; Kolb, 2005, 2009, 2014). It is different from traditional learning where the learner takes on a passive role.

4. Inquiry Based Learning: Inquiry based learning is a teaching strategy in which students examine real-life problems within the context of curriculum learning outcomes. Students formulate questions and then investigate to find answers to their questions. Through the process of investigation students find new meanings and knowledge which they share with their classmates. It is a student-centered approach to teaching. (Halbert & Kaser, 2013; Kolb, 2005, 2009, 2014).

5. Differentiated Instruction: Differentiated instruction refers to adapting lessons to meet the different skill level of students in the classroom. Researchers Brownlie & Schnellert (2009) define differentiated instruction as “designing learning to support all learners” (p. 42). They envision using differentiated instruction through the lens of three guiding principles: 1) it taps into learners’ interests and background knowledge to activate prior knowledge and increase engagement and motivation; 2) fosters students’ ability to acquire information and knowledge from multiple sources that can help them process new ideas and information; and 3) allows students to express what they know so that they can help in the development of lessons and assessment.

6. Metacognition: Metacognition is essentially thinking about one’s thinking. Metacognition allows students to better understand how they learn. It is a vital skill for
students because it teaches them how to set goals and assess their progress.

Metacognition can include information or tasks, comprehension of text, knowledge about self or others, self-regulation, the use of reflection, and the feeling of knowing (Vos & DeGraff, 2004).

7. Reflective Journaling: A key aspect of experiential learning is reflecting on one’s learning journey by writing about the activity and the learning that has taken place. It allows students to set goals, make personal connections, and gain a deeper understanding of how they learn best (Berger, et al., 2014; Cornish & Cantor, 2008; Fahsl & McAndrews, 2012). Reflective journaling works hand in hand with metacognition.

8. Altered Books: Altered books are a type of journal that is created from changing a pre-existing book. An older book has its pages painted over (with some original text or images kept) to provide a new surface that is covered with images and writing (Bunkers, 2001; Cobb & Negash, 2010). In my research study, my students will be taking a pre-existing book and transforming it into their own altered book through a variety of artistic techniques, such as collage, painting and stamping. Their altered books will be used as a vehicle for them to reflect and provide feedback on different learning events and teaching strategies used throughout the year.

This study will examine the use of constructivist pedagogy to create an effective learning environment in a Grade Four classroom. The central focus will be on the use of differentiated instruction, student group work, experiential learning activities, and inquiry based learning as teaching strategies and the development of metacognitive skills through the use of reflective journaling practices. The ten participants in the study will each create an altered book that will be the basis of their reflective journal. Due to the small class sizes in our school an auto-
ethnographic methodology will also be used in conjunction with qualitative methodology to analyze and interpret the data while considering community and cultural context. The use of qualitative research methodology and auto-ethnography also respects the research beliefs unique to the Aboriginal culture in which I work and live. Chapter Two will provide an in depth literature review about altered books, constructivist pedagogy and student-centered teaching strategies. Chapter Three will examine the facets of methodology (auto-ethnography, Indigenous research methodology, qualitative research, and visual arts as research methodology) that inform this research study and provide more information about the participants, data collection tools, procedures, data analysis, ethical considerations and trustworthiness, potential research bias, and limitations. Chapter Four is an account of how the research process took place during the study and an examination of the data collected from the participants’ altered books. Chapter Five is a discussion about the findings and the conclusions that were made in response to the guiding questions this study is trying to answer, and suggestions for further research.
Chapter 2: Literature Review

In 2010, the province of British Columbia began the process of transforming education in BC to meet the “needs of all learners” (BC Ministry of Education, 2013) by working on a new program of studies based on student-centered learning (see Appendix A, p. 105). It seems like an opportune time to examine constructivist pedagogy and to conduct research on the use of student-centered teaching strategies in my classroom. The key goals of this current study are to explore the use of constructivist pedagogy in order to increase student engagement and motivation, and to develop metacognitive skills in my students through the use of reflective journaling. The specific form of journaling used will be through the process of altered books. Altered books are created by transforming pages in an existing book into a canvas for writing and artwork. The following review of literature more closely investigates theories and research on altered books, constructivist pedagogy, and a detailed examination of constructivist teaching strategies that will be used in this study, such as: 1) the learner-directed classroom; 2) differentiated instruction; 3) building levels of student knowledge; 4) the benefit of student group work; 5) experiential learning; 6) inquiry-based learning; 7) focus on assessment for learning; 8) multiple solutions to problem solving; 9) metacognition; and 10) journal writing as reflective practice.
Altered Books Come Alive

“The handwritten words in the pages of my journal confirm that from an early age I have experienced each encounter in my life twice: once in the world, and once again on the page.”

–Terry Williams (source unknown)

Altered books will be the main tool for data collection in this research study and an integral part of the process in attempting to develop metacognitive skills in the participants. Altered books are a form of artistic journaling that allow their creators to focus on specific themes and topics, and are not about reflecting on art. Altered books mix together written text and mixed media, sometimes incorporating parts of the pre-existing page. Bunkers (2011) calls altered books a form of “personal expression using mixed media and writing in a visual, two-dimensional manner” (p. 8). The visual aspect of the journal can include painting, drawings, photography, stamping, and many other forms of art. Bunkers (2011) further states that “combining words with visual imagery is much more powerful than either one alone. By combining the two, I create something that is fresh and rich in meaning, sometimes raw, expressing hurt or pain, and sometimes elated, expressing immense joy” (p. 8). Mitchell, Theron, Stuart, Smith, and Campbell (2011) add that drawings can contribute to student development since they enable their creators to “freeze and study their memories, aspirations, or thoughts” (p. 5). Altered books are a useful form of journaling for younger students because this process allows them to express their thoughts through a combination of words and imagery.

Altered books go further than just drawings as they can be composed of a variety of art media, such as photos, collage, symbols, and repeating patterns, allowing their creators to stretch their imagination and creativity. As stated by Woodhouse et al. (1985), “the use of drawing, painting and fantasy can begin to reveal entirely novel aspects” of student learning through
“imagination and creativity and increased openness” (p.216). Using altered books as a form of journaling allows students to have more choice which encourages them to develop their own unique voice and creativity. A choice-based environment fosters the positive aspects of “experimentation, discovery, self-awareness, and knowledge construction” (Bartel, 2012, p. 137). Creating altered books will allow my students to express their ideas and opinions in an artifact that they can re-examine to gain a deeper understanding of their thought process, a critical aspect of metacognition.

Entries in altered books are a way for students to share their insight and concerns in a safer format than speaking out in the classroom. In their research, Cobb & Negash (2010) found that altered books provided their clients with a “new way of discussing and illustrating problems” (p. 62). They further found that the created pages in the altered book could be used as “topics for discussion” (p.62). Bunkers (2011), states that it allows the creator of the altered book to “actively work through difficult experiences; issues, or patterns by getting it out on the page with paint and scribbles and photographs and words” (p. 9). The use of art and writing can be powerful tools for students to use to express themselves. Art techniques can be incorporated into narrative writing to aid in the process of bringing forth dominant stories, externalizing problems, identifying unique outcomes, developing alternative stories, and sharing with others (as cited in Cobb & Negash, 2010, p.58). Douglas & Jaquith (2009) point out that “writing about their own work is a rewarding experience for many students” (p. 36). Working with younger students it is often difficult to question them about what they like or do not like in the classroom and receive an honest answer. Having the participants in this study create altered books provides them with a tool to reflect about their feelings and opinions without feeling like they have to agree with their classmates or feeling pressure to say the right thing to an adult. The mixed
media format of altered books will make them more accessible to all the participants and allow them to share their thoughts through the use of words and imagery.

**Constructivism: The Need for Change in the Twenty-First Century**

“The activity of the student is not restricted to using their ears and hands for writing notes, their tongues for answering questions and their eyes for looking at the teacher and the blackboard, or storing away what the teacher tells or shows” (Vos & de Graff, 2004, p. 543.)

Constructivism is a pedagogical mindset about teaching that evolved from dissatisfaction with traditional views of education (Fox, 2001; Yilmaz, 2008). With the introduction of public schooling in the 20th century, children were expected to attend school to learn basic skills (Manitoba Education, Citizenship, & Youth, 2006). Very few students were expected to pursue higher education. As a result, early public education policy created a curriculum that emphasized linearity, conformity and standardization (Robinson, 2011 & 2009). In the traditional classroom the teacher holds all the knowledge. It is the teacher’s job to pass knowledge and basic skills onto their students, generally, with the understanding, that students will master new learning at different levels. Instruction involves the teacher providing lessons, usually based on textbooks or skill building programs, followed by worksheets. Assessment is hierarchical: some students will excel; some will be average; and some will show no mastery. To be successful, students simply have to work hard at school and pass exams.

Many researchers, such as Berger, et al. (2014); Brownlie & Schnellert (2009); Cornish & Cantor (2008); Marks (2000); and Tyson & Low (1987), now fault this approach to teaching as being too focused on the process of teaching rather than learning. Marks (2000), notes that teacher-centered instruction results in teachers providing “meaningless instructional activities that promote passivity and boredom among students” (p. 156). Cornish & Cantor (2008) found
that traditional teaching strategies result in students coming into the class viewing teachers as being in control; “successful learning involves following the teacher’s directions and repeating back what the teacher has in mind” (p. 335). The work of the founding fathers of the constructivist pedagogy, John Dewey (1929), Jean Piaget (1954), and Lev Vygotsky (1978), examines the need to move away from the traditional approach to education which promotes teachers and textbooks as the sole holder of knowledge and students as passive recipients to acknowledging the contribution that students bring to the classroom and providing students with the chance to have a voice in how they learn. In the constructivist classroom, it is believed that students construct their own meaning, and this process involves interaction between the individual’s existing knowledge and beliefs, and new knowledge and experiences (Chrenka, 2001; Fox, 2001; Schunk, 2008; Yilmaz, 2008). In the last decade, provincial ministries of education have begun to reimagine provincial curriculums with the incorporation of constructivist teaching strategies and assessment.

The goal of constructivist teaching strategies is to have students and teachers collaborate to enhance new learning and assessment. In the 21st century, students need to be able to use information and adapt to an ever changing world. A Manitoba Ministry of Education (2010) document summarizes this shift in teaching pedagogy:

Learning was long thought to be an accumulation of atomized bits of knowledge that are sequenced, hierarchical, and need to be explicitly taught and reinforced. Learning is now viewed as a process of constructing understanding, during which individuals attempt to connect new information to what they already know, so that ideas have some personal coherence. Individuals construct this understanding in many different ways, depending on their interests, experience, and learning styles. (p. 3)
Even reports from the Premier’s Technology Council in British Columbia address the need to shift from teacher-centered learning to student-centered learning. Their report recommends that there be a shift from “passive student to active learner” and “teacher as lecturer to teacher as guide” (Premier’s Technology Council, 2010, p. 24). Many provinces have embraced educational policy changes that support constructivist pedagogy, such as: a) emphasis on progress and achievement rather than failure, b) provide feedback that moves learning forward, c) reinforce the idea that students have control over, and responsibility, for their own learning, d) encourage students to take risks, e) be relevant, and appeal to students’ imaginations, f) provide the scaffolding that student need to genuinely succeed, e) support life-long learning, and f) make curriculum more flexible to better personalize learning (Manitoba Ministry of Education, Citizenship, & Youth, 2006; BC Ministry of Education, 2013). This shift in pedagogy reflects the increasing insistence of researchers that educational practices need to embrace the changing demands of a technology driven future.

The key goal of this study is to incorporate constructivist teaching strategies into my classroom in counterpoint to scripted teaching programs to see if this increases the engagement of my students. Through the use of constructivist teaching strategies I hope to increase student motivation, to develop their ability to become independent learners, and to provide them with more of a voice in my classroom. The BC Ministry of Education commitment to integrate Aboriginal world-views and knowledge is crucial to making schooling more relevant to Aboriginal students. A focus on personalized learning should appeal to many Aboriginal students because it will allow them to learn essential skills in relation to the communities and environments where they live; which, in turn, should increase their engagement and motivation.
It also reinforces the importance of my research being based on Indigenous Research Methodology because it recognizes Aboriginal views of knowledge and teaching.

**Constructivist Teaching Strategies**

“It is learners who determine our route, who cause us to revise our travel plans and detour toward unexpected surprises, to hurry through known territory, and to linger in other areas.”

*(Brownlie & Schnellert, 2004, p.1)*

Constructivist pedagogy is based on student-centered learning opposed to teacher-centered learning. While the central question of my research is to discover if embracing constructivist pedagogy in my classroom will increase my students’ motivation and engagement, there are many different teaching strategies that fall under the domain of constructivist pedagogy. While constructivist pedagogy focuses on student-centered learning it is still incumbent upon the teacher to use the most appropriate teaching strategy for the desired learning outcome and that will best suit the needs and learning style of their students (Hyslop-Margison & Strobel, 2007).

Below is a closer examination of a variety of constructivist teaching strategies that may be used in this study to help increase student motivation and engagement. The participants in the study will reflect on the effectiveness of these different constructivist teaching strategies each week in their altered book entries. Specific teaching strategies that may be used in this study will be examined in closer detail below. Each of these teaching strategies were chosen based on their suitability for Grade Four students who had little previous experience learning with constructivist teaching strategies and their practicality when teaching in a small, isolated community with limited resources. The strategies that will examined in more detail are: 1) the learner-directed classroom, 2) differentiated instruction, 3) building levels of student knowledge, 4) the benefit of student group work, 5) experiential learning, 6) inquiry-based learning, 7) focus on assessment
for learning, 8) multiple solutions to problem solving, 9) metacognition, and 10) journal writing as reflective practice.

**The learner-directed classroom.** A cornerstone of constructivist pedagogy is the learner-directed classroom. In the learner-directed classroom, there is cooperation between teachers and students in the creation of learning activities, teaching new learning, and assessment (Dewey, 1938; Kolb, 2005, 2009, 2014; Shellman, 2014; Tyson & Low, 1987). By allowing students to help create the learning environment, and taking part in direct learning experiences, it creates greater understanding and motivation (Douglas & Jaquith, 2009; Gregg, 2009). Cassidy (2001) adds that with each learning event, the goal of the teacher should be “to facilitate the creation of personal meaning” in their students, “which can be explored to bring about new information, insight, or change in the life of the learner” (p. 25). New ideas can be explored together through the use of discussion, investigation, and experimentation (Gregory, 2000; Yılmaz, 2008). When students realize they have a voice in the classroom and can take responsibility for and control of their learning it leads to enhanced confidence in their ability to learn (Cornish & Cantor, 2008; Dianovskiy & Wink, 2012; Shamim, 2012). An integral part of constructivist pedagogy is the development of relationships between teacher and students. By providing students with a chance to have a say in how they learn and what they learn, it creates trust, and allows students and teachers to deepen their relationship with their subject matter and each other.

The learner-directed classroom teaching strategy is vital to this study because many Aboriginal students lack the confidence and skills to be independent learners. Traditional approaches to teaching that focus on textbooks, memorizing facts and repeat rote lessons are ineffective activities if students lose their appreciation for learning and cannot apply what they
learn to future experiences (Douglas & Jaquith, 2009). This teaching strategy moves students away from the routines and procedures of traditional lessons towards the incorporation of student voice (Villaume & Brandt, 1999). It is a strategy that needs to begin in Kindergarten and be reinforced in subsequent grades. When students receive encouragement to contribute their voices to the way learning takes place in the classroom, they feel empowered and want to learn.

Robinson (2011) further adds that:

in learner-directed classrooms teaching for creativity involves asking open-ended questions where theory may be multiple solutions; working in groups on collaborative projects; using imagination to explore possibilities; making connections between different ways of seeing; and exploring the ambiguities and tensions that may lie between them. (p. 269)

Learner-directed classrooms are “thinking classrooms”. In thinking classrooms students are expected to: access and use their prior knowledge, process and make connections among ideas, and personalize and transform what they have learned (Brownlie, & Schnellert, 2009; Gaspardi, 2012). The learner-directed approach to teaching will be the principal constructivist teaching strategy that I will use in this research project because I believe that it will provide my students with the skills they need to become independent learners with a desire to pursue life-long learning. My hope is that my belief in the power of the learner-directed classroom will be backed by the information shared in the participants’ altered books.
**Differentiated instruction.** Differentiated instruction is an important teaching strategy for encouraging student participation and strengthening relationships between teacher and student. When a teacher uses differentiated instruction they group similar ability students together and provide support based on the group’s level of understanding. However, not all students come into the classroom sharing the same background knowledge, beliefs, values, and work ethic. The effective differentiated instruction teacher is responsible for knowing the needs and capacities of each student they teach, respecting them as unique individuals, and teaching in a manner that best meets each student’s needs (Bartel, 2012; Dewey, 1938; Kolb & Kolb, 2005). Recent changes in education pedagogy emphasize that students learn better when they are able to connect new information to what they already know.

According to Manitoba Education, Citizenship & Youth (2006) differentiated instruction is:

The move from the one-size-fits-all emphasis on the whole class to identifying the unique learning patterns of each student, using various instructional approaches to accommodate the range of learning patterns and styles, including designing instruction for students with various learning challenges and disabilities. (p. 7)

The BC Ministry of Education (2012) also recommends the use of flexible instructional design in the classroom stating that “standards could be combined and integrated in various ways to create courses or learning experiences depending on student need and local context” (p. 3). Kolb et al. (2014) found that “teaching to the full range of styles is far better and more consistently leads to higher achievement across grade and content levels than confining students to a single style of instruction” (p. 211). When students feel that their needs are being met they are more likely to invest time and energy into what they are learning. Using differentiated instruction leads to
higher academic achievement and greater student motivation. By valuing my students as unique individuals with their own learning needs I can develop personalized instruction so that all students in my classroom can learn effectively. The creation of weekly reflections in their altered books will allow me to acknowledge the unique abilities and interests that each of my students bring to their learning.

**Building levels of student knowledge.** Essentially, building levels of student knowledge, or ‘scaffolding’ requires the teacher to use a variety of teaching techniques to move students towards greater understanding and mastery, and, ultimately, greater independence in their learning. The notion of scaffolding has been linked to the work of Russian psychologist Lev Vygotsky (1896-1934). Scaffolding involves the teacher providing successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition that they would not be able to achieve without assistance. Scaffolding creates a framework by linking new knowledge upon an understanding of what students already know and believe (Boud, 2001). By building new knowledge upon existing knowledge students are able to create connections that allow them to make sense of what they are learning (Boud, 2001; Kolb, et al., 2014). Yilmaz (2008) found that by including goal setting, in addition to scaffolding, it allows students to develop “deep understanding of the subject matter” and increase “habits of the mind that aid in future learning” (p. 165). However, while encouraging students to become independent active learners is at the heart of scaffolding, the teacher still needs to manage and assess their students to ensure that they are staying on track and meeting prescribed learning outcomes (Gregory, 2000; Hyslop-Margison & Strobel, 2007). The key is to provide a balance between encouraging independent student inquiry and offering teacher guidance. Scaffolding is
vital to the success of my students in this research project so that I can provide the necessary level of coaching and guidance that each of my students need so that they feel successful.

The benefits of student group work. One of the best ways to develop the skills required in today’s workplace is to use student group work. Group work has been shown to increase student learning and retention for many students. Group work is an excellent strategy when working with younger students because it allows them to share ideas with each other. Students that are not confident in their skills are more comfortable working with a partner who can assist them. In addition, group work is an integral part of traditional Aboriginal teaching practices. There are a variety of ways to create student groups, such as placing random skill levels together, pairing students of similar skills together, placing students with complementary skills together, or allowing students to choose their own groups. Group work allows students to develop collaborative skills, which can include: a) tackling more complex problems than they could on their own; b) delegating roles and responsibilities; c) sharing diverse perspectives; d) pooling knowledge and skills; e) holding one another accountable; f) developing new approaches to solving differences; g) establishing a shared identity with other group members; h) receiving social support and encouragement to take risks; and i) finding effective peers to emulate (Carnegie Mellon/ Eberly Center).

Encouraging students to work together does not excuse the teacher from providing assistance or guidance. When students are left to work on their own they can engage in off-task behaviour or they may not fully understand what is expected of them and turn in incomplete work. Recent research findings support that students learn best when they work together and through joint interactions with adults (Gregory, 2000; Mello, 2012; Yilmaz, 2008). One way that teachers can foster student group work is to recognize and discover what students already
understand, their skills, beliefs, hopes, desires, and intentions, and then encourage them to adjust their conceptual understanding as they explore new learnings (Hyslop-Margison & Strobel, 2007; Ministry of Education, Citizenship, & Youth, 2006). In the ever increasing connectivity of today’s world, Mello (2012) argues that “placing interaction and dialogue” between students and a guiding adult is “at the centre of current explanations of human learning, and designing interactive learning environments that respond to how people learn in dialogic societies is critical” (p. 133). Group work will work best in a classroom where the teacher understands and accepts that learning is a process of constructing, and that students construct meaning in many different ways based on their interests, experiences, and learning styles. Group work will be an important aspect of this research study because it is the strategy that the participants are most familiar with, and it is adaptable to a variety of learning environments and subject matter.

**Experiential learning.** John Dewey is considered the father of experiential learning, and is still referenced for his multiple educational constructs on this type of experiential learning on which current researchers have grounded their research, and in turn, educators have considered in their practice. Dewey (1938) states that educational pedagogy needs to move away from viewing the teacher as the absolute source of knowledge in the classroom. He argues that students’ views, beliefs, and personal knowledge need to be acknowledged when teaching in the classroom and that to truly educate the learner students and teachers need to work together. This lack of connection between teacher and student can lead to their disengagement which, in turn, can lead to poor behaviours.

Forcing students to learn through repeated drills and rote memorization “robs students of the chance to cultivate their own ideas and develop their powers of judgment” (Dewey, 1938, p. 37). In experiential learning, the student learns through ‘doing’, using strategies such as
observation, experimentation, and interaction to build first-hand knowledge. Dewey believes that “every experience enacted and undergone modifies the one who acts and undergoes, while this modification affects, whether we wish it or not, the quality of subsequent experiences” (p. 35). Tyson and Low (1987), expand on Dewey’s idea of experiential education stating that “experiential learning arises from the first-hand experiences of the learner” (p.15). Robinson (2014) adds that both students and teacher have an “individual view” of the learning that is taking place, which is “deeply influenced by the ideas, values and beliefs through which we interpret our experiences” (p. 187). These influences affect our understanding and perception of what we learn. Kolb (2005, 2009, and 2014) envisions experiential education as a spiral where the learner experiences knowledge, reflects on their learning, makes connections with their own lives, and then acts on the new knowledge they have acquired (see Appendix B, p. 107). The symbol of a spiral is a central part of this research study as students will experience a variety of constructivist teaching strategies that they will then reflect on, and, depending on their reflections and responses to the constructivist strategy used, the individual strategy may be used again to reinforce student understanding, or new strategies may be used. In addition, experiential learning or hands-on learning is an effective learning strategy because past-practice has shown that my students enjoy making things and actively learning through direct participation.

**Inquiry-based learning.** Inquiry-based learning is a teaching strategy that encourages students to formulate questions and explore their own findings about specific topic (in the classroom, these questions would be based on learning outcomes for individual subjects). Inquiry-based learning is predominantly student driven; the teacher acts as a guide helping students where needed. In a recent paper by Edelson, Gordin, & Pea (2007), they state that “inquiry experiences can provide valuable opportunities for students to improve their
understanding” (p. 391). They add that in “recent years that has been a growing demand for inquiry to play an important role in education” (p. 392). This growing demand for inquiry-based learning can be seen in the educational policies of Alberta, Manitoba, and British Columbia. According to Alberta Education “research suggests that inquiry-based learning increases student creativity, interdependence, and problem solving skills and it improves student achievement (http://education.alberta.ca/teachers/aisi/themes/inquiry.aspx). What makes inquiry-based learning so effective is that it targets students’ curiosity.

When children begin school they are excited and curious about almost everything, but over time this excitement and curiosity diminishes. Even by Grade Four students start to make comments such as ‘this is boring’ and ‘why do we have to learn this?’. As Halbert & Kaser (2014) suggest in their research “what you want to hear and see are internally motivated, self-regulated learners, who are intellectually, academically and socially engaged with their learning” (p. 8). Inquiry-based learning allows students to explore learning that interests them through design, discipline, and a critical focus on evidence (Halbert & Kaser, 2014). In this study, students will be encouraged to pursue their own topics within specific units of science, social studies, and art, and to share their findings with their classmates. By using inquiry-based learning it should allow the students to have more control over how they learn, which, in turn, should keep them engaged and motivated in the material they are learning. Edelson et al. (2007) add that “authentic activities provide learners with the motivation to acquire new knowledge, a perspective for incorporating new knowledge into their existing knowledge, and an opportunity to apply their knowledge” (p. 393). Inquiry-based learning is an excellent teaching strategy in the constructivist classroom because it allows for differentiated instruction, encourages learner
engagement, involves learning socially and collaboratively, and promotes connectedness across curriculum subjects.

**Focus on assessment for learning.** Assessment in student-centered classrooms focuses more on formative assessment rather than summative assessment. Traditionally, summative assessment is used to assign a letter grade for a subject each term. The letter grade is based on unit tests and standardized assessments. “It was believed that assessment and grading motivated students to work hard and learn” (Manitoba Education, Citizenship & Youth, 2006, p. 6). Traditional teaching approaches provide lessons and assessments that treat all students in a class as homogenous. During the 20th century, educational policy believed that this ensured fair, accurate, and consistent opportunities for students (Manitoba Education, Citizenship & Youth, 2006). However, students are all different despite responding to similar strategies in both positive and negative ways. Formative assessment focuses on monitoring student learning to provide ongoing feedback to help students improve. In the constructivist classroom there is a greater emphasis on self-assessment and goal setting (Berger, et al., 2014; Douglas & Jaquith, 2009). “When learning is the goal, teachers and students collaborate and use ongoing assessment and pertinent feedback to move learning forward” (Manitoba Education, Citizenship & Youth, 2006, p. 5). Constructivist learning activities and programs need to be highly structured and provide students with opportunities to set goals and work towards goals, identify and utilize resources, use critical thinking to solve problems, be team leaders, and work cooperatively to meet outcomes (Gager, 1982; Shellman, 2014; Woodhouse, Hall & Wooster, 1985). Goal setting allows students to monitor their progress, and reflect on their learning, which helps to develop their metacognitive skills.
The move from teacher assessment to student assessment moves the students away from being “passive recipients of information” to “active agents in monitoring, communicating, and promoting their own growth” (Berger, et al., 2014, p. 11). Teachers monitor student engagement and learning both formally and informally allowing them to discover ways to improve student learning. The students in this study should greatly benefit from a move away from graded tests. When students are required to analyze their unit tests to see where they have difficulty it provides data about learning that needs to be reinforced and reviewed. Later in the term, students can rewrite unit tests to show if extra review has provided them with the means to master learning outcomes. Constant monitoring of teaching strategies and lessons also allows the teacher to adapt and modify lessons and teaching strategies to best meet the needs of individual students. According to Douglas & Jaquith (2009), “effective instruction requires teachers to be aware of what is and is not working for students” and to make changes throughout the year to better meet the needs of students (p.32). When student input is valued in the classroom, I anticipate and have observed their motivation continues to increase. The higher their motivation, the more time and energy most students will be willing to devote to any task.

**Multiple solutions to problem solving.** In the constructivist classroom, there is no one “right” way to solve a problem. Students are encouraged to use their prior knowledge and to experiment with different strategies to solve problems. Several researchers point out that by allowing students to pursue their own ideas it provides them with the chance to make meaning of the world that they live in (Berger, et al., 2014; Douglas & Jaquith, 2009; Jaquith, 2012). The key to encouraging students to examine multiple solutions is to develop and choose open-ended teaching strategies with all the learners in mind. According to Brownlie & Schnellert (2009) what makes the strategies open ended is “that they do not ask students to find the ‘right’ answers
but rather require students to make connections, process information, and transform the information in a variety of ways” (p. 10). Marks (2000) adds “authentic academic work involves students intellectually in a process of disciplined inquiry to solve meaningful problems, problems with relevance in the world beyond the classroom and of interest to them personally” (p. 158). My hope is that the participants in this study will be more willing to take risks and explore new ideas when they realize there does not have to be only ‘one correct way’ to do something. By having the students examine subject matter and strategies as problems to be solved instead of a series of facts to remember they should be eager to complete their work, take more enjoyment from the learning process, and be less stressed by academic scores.

**Metacognition.** A central component of constructivist pedagogy is the development of student metacognition. Metacognition is essentially the ability to think about one’s thinking. Many researchers clarify metacognition as the mental process that occurs within cognition (Kim, Park, Moore, & Varma, 2013; Kuhn & Dean, 2004; Papaleontiou-louca, 2003; Schunk, 2008; Vos & de Graaff, 2004). Developing metacognition skills in students is important because it teaches them how to become independent learners. Berger et al. (2014) states that:

> we should re-envision teaching, learning, and assessment around a new definition of student achievement: one that marries mastery of rigorous academic content to equally important outcomes such as critical thinking, effective communication, collaboration, and the ability to reflect on one’s learning, agency and character. (p. xv)

Learning is enhanced when students are encouraged to think about their own learning, and when they review their experience of learning. “For example, ‘What made sense and what did not? How does this fit with what I already know, or think I know?’ Then it becomes important to apply what they have learned to their future learning” (Manitoba Ministry of Education,
Citizenship & Youth, 2006, p. 5). Metacognition occurs throughout our lifetime, but needs mentoring and development in order to be a truly effective learning strategy.

Kuhn & Dean (2004) state that metacognition “originates early in life, when children first become aware of their own and others’ minds” (p. 270). Metacognition can be triggered by individual, social, and environmental influences (Kim et al., 2013). Metacognition at the individual level is the ability to reflect on one’s own learning process, at the social level it involves learning from being a member of a group, and at the environmental level it is supported through classroom activities and problem-solving tasks (Kim et al., 2013). Vos & deGraff (2004) define metacognitive tasks as “being able to define a newly developed concept, find structure in some given information, to model reality, to solve real-world problems, to design a new product, or to regulate your learning” (p. 545). Joseph (2003) adds that a “lack of metacognition leads students to become passive learners, disengaged from their education” (p. 110). Learning to think about one’s thinking develops in students the ability to make choices between conflicting ideas. According to Kuhn & Dean (2004) it teaches students to “value thinking” and increases the amount of “effort they will expend on thinking” (p. 271). Metacognition is critical when using constructivist teaching strategies in the classroom because this strategy supports students in becoming active, independent learners.

One aspect of metacognition is the ability to set goals and assess them. Joseph (2003) found that this skill is essential because the ability to self-critique one’s learning “produces powerful knowledge that enables students to control their own learning” (p. 110). Learning to set goals and reflect on them teaches students to move away from the immediate results of performance and focus on the long–term benefits of tracking their performance over time (Berger et al., 2014; Kolb & Kolb, 2009). By setting goals and reflecting on these goals it
requires students to reflect on effective learning strategies and makes them better able to understand the outcome of their work (Joseph, 2003; Schunk, 2008). Papaleontiou-louca (2003) adds that “only when students know the state of their own knowledge can they effectively self-direct learning to the unknown” (p. 10). Part of constructivist pedagogy is the process of students’ learning about their self-identity as learners; many researchers envision this learning process as a never-ending spiral.

Dewey (1938) first developed the idea that learning should be envisioned as a continual spiral where new facts and ideas were discovered, shared through presentation to others, which, in turn, leads to new learning. Recent research by Kolb (2002, 2005, 2009, and 2014) further expanded on the role of metacognition in creating a spiral of knowledge. He argued that student-centered learning can be thought of as a spiral where the learner touches all the bases—experiencing, reflecting, thinking and acting—in a recurring process that transforms the learning experience into created knowledge. Halbert & Kaser (2014) also relate inquiry based learning to a spiral in which focusing on an idea leads to a question, next comes learning, followed by taking action, checking results, scanning to see if results work, which in turn leads back to new ideas. This study can be thought of as a spiral as well. When students in this study reflect on their learning through the entries they create in their altered books, it should allow them to think more deeply, which may encourage them to actively engage in new learning and experiences. In addition, reflective journaling allows students to monitor their learning by setting goals and assessing their ability to meet goals. These new ideas can lead to new goals that spiral back into decision making, which, in turn, leads to deeper connections and increased engagement which is central to metacognition and constructivist pedagogy.
Journal writing as reflective practice. Metacognition is difficult to analyze as it takes place in the mind of the student involved. One way to gain insight into the metacognitive processes of the students in this research study is to have them write in a reflective journal (in the form of an altered book). Joseph (2003) adds that “when we encourage our students to be reflective, we are asking them not only to explore how they learn but to give us information about how they function as learners” (p. 111). Recent research by Boud (2001); Cassidy (2001); Gregg (2009); Jarvis (2002); and Shellman (2014); shows that student-centered learning activities are enhanced when followed by a period where students can reflect upon the activity and self-evaluate. Furthermore, reflective journal writing allows students to make more meaningful connections between past experiences and present learning (Boud, 2001; Cassidy, 2001; Dianovisky & Wink, 2012; Shamim, 2012). By setting goals and reflecting on learning outcomes, journals provide students with the chance to recognize their accomplishments as learners, reflect on their personal development, and monitor their growth over time (Dunalp, 2006; Jarvis; 2001; Shamim, 2012). Hains & Smith (2012) add that “students learn from both success and failure, deepening the learning process” (p. 370). By encouraging my students to reflect about their learning process through journaling, it will allow me to provide them with guidance and feedback that can help to bolster their belief that their learning has value.

Students need assistance when learning how to use journal writing as a reflective tool as it is difficult for them to think deeply about their learning and demonstrate serious reflection in their writing. It is critical that the teacher makes the purpose of the reflection as clear as possible through the use of guided questions, prompts, objectives, specific themes and structures to help students develop their writing to show deeper reflection (Dianovisky & Wink, 2012; Dunalp, 2006; Dyment & O’Connell, 2010; Fahsl & McAndrews, 2012; Gregg, 2009; Hayman, Wilkes,
& Jackson, 2012; Thorpe, 2004;). As Dunlap (2006) states, “you ultimately want reflection to become part of students’ normal practice and for them to feel ownership over the process, otherwise, it will just be an assignment and not an integrated, internalized part of their professional activities” (p. 24). One of the key questions that this research study hopes to answer is whether enhancing the metacognitive skills of my students will increase their engagement and motivation at school, and help them become independent learners. Regular reflective journal writing seems to be an effective way to enhance metacognition and goal setting with my students.

In conclusion, the central themes that this research study will examine is the use of altered books as a form of reflective journaling, the implementation of constructivist pedagogy, and the use of constructivist teaching strategies to offset the time spend using scripted programs. The use of constructivist teaching strategies such as: 1) the learner directed classroom; 2) differentiated instruction; 3) building levels of student knowledge; 4) student group work; 5) experiential learning; 6) inquiry-based learning; 7) a focus on assessment for learning; 8) multiple solutions to problem solving; 9) metacognition; and 10) journaling as reflective practice can help students become independent life-long learners. When students feel recognized as individuals and realize that they have a voice in the classroom, they are more willing to invest the time and hard work required to master new learning. Allowing students to explore their interests, ignites the spark of curiosity within them and makes them less likely to think of school as a place of boredom and drudgery based on rote memorization. By envisioning learning as a continuous spiral where questions lead to new knowledge, which is shared, leading to new questions, it creates an atmosphere of inquiry and excitement in the classroom.
I have seen first-hand in my classroom how the use of teacher-centered lessons and the use of commercial scripted programs, such as *Reading Mastery* and *Saxon Math* have demotivated and disengaged my students. Implementing constructivist teaching strategies in my classroom will provide me with tools to explore new ways of learning that place my students unique needs and interests and the forefront of their learning. By embracing constructivist teaching strategies, I will be encouraging my students to have more of a voice in the classroom and, hopefully, reignite in them the sparks of excitement and curiosity that make them want to come to school each day.
Chapter 3: Facets of Discovery

At the beginning of the school year, I explained to the eleven students in my Grade Four class that they would each be creating an altered book to reflect on their learning experiences throughout the year. They were informed that the creation of the altered books was for research that would be used to write my Master’s thesis. The goal of creating the altered books is to have a collection of student responses (see Figure 4, p. 44), which I can interpret to inform me of their experiences in a constructivist classroom using the following techniques: a) the learner-directed classroom; b) differentiated instruction; c) building levels of student knowledge; d) student group work; e) experiential learning; f) inquiry-based learning; g) assessment for learning; and h) multiple solutions to problem solving. I also designed this project so that the students’ altered books would reveal their own thinking about their ability to develop metacognition through the use of weekly reflections and goal setting. I worked throughout the year to include more constructivist learning opportunities in my classroom to balance and offset the class time using scripted programs such as Reading Mastery and Saxon Math. Throughout the year, the students created entries that were a mix of writing and imagery that reflected their ideas, opinions and feelings towards different learning activities (for a full listing of the entries created in the participants’ altered books, see Appendix C, p. 108).

At the beginning of the school year, a letter explaining my research study and consent form was given to my principal (see Appendix D, p. 109). Another copy was given to the local chair of the Education Board of Lax Kw’alaams (see Appendix E, p. 111). Permission to conduct my research study was given immediately from both parties. Once ethical consent for the research study was given at the end of November 2015 a permission slip was given to parents explaining the research project and requesting consent to use their child’s altered book for the research study (see Appendix F, p. 113). The first round of consent forms were handed
Figure 4: Example of student reflection on Earth Day activities.

out during a parent/teacher interview night, during the first week of December 2015, which allowed time for me to explain the purpose of my study to each parent individually. A second letter and copy of the consent form were given to the parents again at the beginning of June 2015 (five months after the first consent form), at which time, ten of the students received parental consent for me to use their altered book for my research project. The altered books were then collected at the end of the school year for examination. The main collection and coding of research data was based on qualitative research methods. In addition, Indigenous research methods were respected, as my students are Aboriginal. This type of consideration was made by, acknowledging that each student in the classroom is a unique individual with their own identity, learning is holistic, learning and relationships are interconnected, and that knowledge is sacred and shared with permission.
Methodologies

As a researcher and a teacher of the participants in my study, I wanted to approach data collection and analysis in a different way than an outside researcher would collect data, and then make inferences and interpretations. I live in the community where I teach. I have lived here for a number of years and will continue to do so; however, I have to understand and respect that I am still a guest (not being born into the Tsimshian nation) of the small, isolated, Aboriginal community where I live. Therefore, it was important that I used research methods that allowed me to collect data while respecting the traditions and expectations of the people where I live. In light of how research has been done on Aboriginal cultures, Aboriginal community members are sometimes reluctant to participate in research studies. It is vital that my research questions focused on teaching strategies and their effects, not on the abilities of my students as Aboriginal students where it might be perceived as judging a culture by the standards where discrimination may be assumed.

In addition, as my participants’ teacher, it was important to me that my data collection and research strategies were not separate from the way I teach normally, and that the material that I cover in my classroom was consistent. During the process, it was vital to the parents-guardians and myself that the creation of altered books would not be an extra burden for my students to complete, but would instead be a task that would lead them closer to becoming better readers and writers. For this reason, I focused primarily on the following research methodologies: 1) auto-ethnography (a form of self-reflection and writing that explores the researcher’s personal experiences); 2) Indigenous research (research that seeks to preserve Aboriginal voices by recognizing the holistic relationship between researcher and community members based on mind, body, emotion, and spirit); 3) qualitative research methods (exploring,
analyzing, and understanding unstructured data to develop the construction of a hypothesis); and 4) visual arts research methodologies (using visual art as a form of data).

**Auto-ethnography.** Due to the small sample size, cultural differences, and even the variations in student composition from year to year, it would be difficult to replicate this research study and obtain the exact same results. Traditionally Coast Tsimshian Academy has small class sizes. The reason for this is to provide more direct teacher time, which is deemed more important by the community than saving money by combining multi-grade classrooms. In addition, I need to approach research in a manner that is respectful of Aboriginal culture and their traditions, which see the transmission of knowledge, in their oral tradition, as stories being shared. Aboriginal researchers believe that research needs to preserve their indigenous voice; that it is holistic and directly linked to the emotion, body, mind, and spirit of the researcher and the participants, and to deny these concepts, invalidates the data (Lavallee, 2012; Rich, 2012; Steinhauer, 2002).

I feel that the use of auto-ethnography will allow me to meet these needs as it is a research methodology that is a form of self-reflection, which acknowledges “being part of a culture and/or processing a cultural identity” (Ellis, Adams, & Bochner, 2011, Doing Autoethnography section, para. 6). In this study, I have the dual role of being the teacher and researcher. Since the objective of this study is to improve my teaching strategies through the use of constructivist pedagogy, it is difficult to separate my findings from that of unbiased researcher opposed to classroom teacher. Using auto-ethnography allows me to “make characteristics of a culture familiar for insiders and outsiders” (Ellis et al., 201, Doing Autoethnography section, para. 6). The use of auto-ethnography will allow me to tell the story of the learning experience,
not just show the data, and is an effective way to convey information that is needed to interpret findings.

**Indigenous research methods.** It is very important to me that I try and frame my research in terms of Indigenous research methods. As a non-Aboriginal teacher working in an Aboriginal community, I want my research to respect the culture and the traditions of the people with whom I work and live. Not only do I want to ensure that I am respecting Indigenous research methodology in conducting my research, I feel it is also important to recognize the central beliefs of Aboriginal pedagogy as outlined in the “First Peoples Principles of Learning” which states (as cited in Halbert & Kaser, 2013, p. 15):

- Learning ultimately supports the well-being of the self, the family, the community, the land, the spirits, and the ancestors.
- Learning is holistic, reflexive, experiential, and relational-focusing on connectedness, or reciprocal relationships, and a sense of place.
- Learning involves recognizing the consequences of one’s actions.
- Learning involves generation roles and responsibilities.
- Learning recognizes the role of Indigenous knowledge.
- Learning is embedded in memory, history and story.
- Learning involves patience and time.
- Learning requires exploration of one’s identity.
- Learning involves recognizing that some knowledge is sacred and shared with permission and/or in certain circumstances.

I feel that the use of altered books (as a reflective journaling tool for my students) aligns well with Aboriginal beliefs because this strategy allows me to better hear and understand the
stories that my students are trying to share with me. It is also paramount to me that the research I am conducting be useful and helpful to Aboriginal people. I want my students to be instructed in ways that are effective and useful for them. For these reasons, it is important for me to gain a better understanding of Indigenous educational and research philosophies and to be considerate of it in my research.

Indigenous research methodology is a different way of collecting and interpreting research than what is espoused in traditional Western research. Researchers Steinhauer (2002), Rich (2012), and Lavallee (2012) point out that for too long non-Aboriginal researchers have come into their communities and encouraged their Western academic beliefs and intellectual traditions when researching Aboriginal people. As Steinhauer states (2002) “it really is upsetting that Western researchers have for so long come into our communities and assumed to know us, but in fact they know nothing about us” (p. 70). As a non-Aboriginal teacher, I need my approach to teaching and the context of what I teach in the classroom to provide a balance between the learning outcomes posted by the BC government and acknowledgment of the traditions and beliefs of the Tsimshian people living in Lax Kw’alaams.

I need to keep in mind that Aboriginal viewpoints about the learning and sharing of knowledge differ from the traditional Western approach. Lavallee (2009) states:

that the relational nature of Indigenous epistemology acknowledges the interconnectedness of the physical, mental, emotional, and spiritual aspects of individuals with all living things and with the earth, the star, world, and the universe. Following from the belief in interconnectedness as outlined above, research cannot possibly be completely objective. Individuals conducting the research are necessarily connected to the individuals being researched, and all are connected to all other living things.
Emotions are connected to all mental processes. Every time we think, use reason, and figure, emotion is tied to that process; therefore, it is impossible to be free of emotion and subjectivity in research. (p. 23)

I believe that Indigenous research methodology ties in with constructivist pedagogy and teaching to the whole child, because it stresses the importance of relationships between people (Lavallee, 2009; Rich, 2012; Wilson, 2001). Rich (2012), states that “all beings are related and interdependent, and humans are merely part of the circle, not in charge of it” (p. 309). Indigenous research is about respecting the relationships that people develop during their research, and sharing their findings with the community involved. Additionally, research needs to be of benefit to the community and participants (Steinhauer, 2002; Wilson, 2001). Reciprocity in the form of giving gifts (traditional types of gifts vary between Aboriginal groups, for the Tsimshian people some examples are oolichan grease, blankets, and beads) to participants and sharing research findings with the community is very important (Lavallee, 2009; Rich, 2012). Some community members commented to me that it was important that my research be given to the community, as in the past, research findings were never shared. As Lavallee (2009) and Rich (2012) point out, there needs to be an acknowledgment that knowledge has been passed down through generations, and that all knowledge that is currently obtained is not created but borrowed from an ongoing river of knowledge that continues to flow.
Qualitative research. Since my participants are also my students in a limited term of study, it restricts the types of data collection I will be able to use with them. Essentially, I can only use my students’ altered books and my research journal as my data collection tools; therefore, it makes sense to approach the collection and interpretation of the unstructured data through the triangulation of other qualitative research strategies. Qualitative research methodology investigates the why and how of particular questions; not just what, where, when, or who. This approach appeals to me because it is not about finding specific numbers and percentages as is typical of these types of studies using empirical methods. Rather it is about understanding and exploring the totality of the students’ learning challenges I have been observing in my classroom over the last several years. How can I increase student engagement? Why are scripted programs not making the promised advancements in my students’ reading, writing, and mathematical skills? Can developing metacognition skills in my students increase their ability to be independent learners?

As a teacher, it seemed essential that I conduct research and collect data on issues that most impact my teaching given my current classroom, community, and school priorities. I am trying to find solutions to my problems so that my students become effective, motivated learners. With only eleven students in my classroom, it would be difficult to collect and analyze data for accurate validity generalizable beyond this context or even for me to repeat my findings with another group, as classroom size and composition change from year to year. However, what I concluded was that my research experience with these students would be a snapshot of a classroom grappling with teaching methods used across BC. According to Mills (2014), qualitative research “is by its very nature based in the context of our classrooms and schools”, and issues of credibility, validity, and reliability are measured by the willingness of teacher
researchers to test whether “the solution to our problem (our planned intervention) actually solves our problem” (p. 115). Concerns and issues that are of vital importance to educators of Aboriginal students may not even be an issue with students from larger urban centers. Qualitative research focuses on any patterns that may come out of data analysis whether it supports or does not support the guiding questions of the research. My hope is that I will find patterns in my data analysis that will help me become a better teacher, and will help my fellow teachers become more effective at what they do in similar, and potentially new contexts. Qualitative researchers believe that everything they study is context bound and that the goal of their work is not to develop “truth” statements that can be generalized to larger groups of people (Mills, 2014, p. 116). Although I believe that some of my observations can be universally relevant given the research within which I ground my findings. In the end, the central purpose of my study is to help the Aboriginal students that live in Lax Kw’alaams become engaged and motivated students that come to school eager to learn about issues that have direct relevance to them.

**Visual arts as research methodology.** The main tool for my data collection will be the altered books that my students create throughout the school year. As altered books are a mix between visual imagery and written text it is important to examine the increasing role of visual arts as a form of research methodology. As Cobbs & Negash (2010) and Mitchell et al. (2011) point out in their research, powerful and complex messages can be expressed in simple but rich ways though the use of artwork. Altered book making is a form of art in which the artist recycles and transforms a pre-existing book to construct a journal. Pages in the book can be painted over to allow new images and text to be incorporated. The pre-existing text in the books may also be incorporated into the artist’s new interpretation. Mitchell et al. (2011), state that “drawings are
lasting artifacts that can be used to give voice to participant messages” (p. 5). Alerby and Bergamark (2012) add that there is a “unique interaction between the image and the words, something which cannot be achieved when relying on only visual, written or oral data” (p. 101). Altered books will allow my students to reflect about their experiences learning through constructivist teaching strategies compared to scripted programs, such as Reading Mastery and Saxon Math.

Visual art is a useful tool when examining reflective journaling, such as altered books written by younger students, because it allows younger participants to share ideas not easily expressed in words. According to Morgan (2009) “humans are social animals” we tend to organize what we see into “systems of meaning, in this case, the rudiments of visual communication” (p. 8). Alerby and Bergmark (2012) add to this argument, stating in their research that the view of human language has changed over the last few decades and that humans are able to express themselves and learn through the use of visual images, such as drawings, symbols, photos, paintings, and collage; not just the spoken or written word. As some of my students are not strong writers, it is important to provide them with another option that will allow them to express their ideas and feelings.

The first step in using visual art as a tool for data collection is to determine the message that the artist is trying to say. In their research Mitchell et al. (2001) state “drawings and other visual methods, especially when they are used with children, are really a stimulus for communication, and using the visual- especially drawings- with children is particularly critical in getting at their inner world” (p. 20). This message cannot be uncovered unless the researcher works in collaboration with the participants. The visual image on its own cannot be fully interpreted unless dialogue with the participants takes place either verbally or through writing.
(Mitchell et al., 2011). Visual images when used as a research tool should be viewed as a unit so that similarities and differences between similar themes can provide data about specific events (Alerby & Bergmark, 2012; Morgan, 2009). Once images have been examined for repeating patterns, messages, and relationships to written text themes can be formulated.

**Methods**

**Participants.** The current study took place at an independent Aboriginal school in northern British Columbia. The school has approximately 120 students in classes from Kindergarten to Grade Ten. The students were open to taking part in the study, as were most of their parents once they understood what the study would entail. Administration and the local Education Board promptly gave permission for the study to take place. While all eleven students from the Grade Four class were invited to participate in the study, only ten provided consent to use their altered books anonymously for the study. Of the eleven participants, six were boys and five were girls. The age range of the participants was eight to ten years old. Academically, many of the participants are lower in reading and writing compared to the local public school district and province based on their assessment scores on Dibels and the Canadian Achievement Test, due to disruptions in their learning in Grade Two and Grade Three. Adaptations, such as scribing, reading assistance, and one-to- one guidance, were put in place to help with reading and writing to meet the unique learning needs of individual students as required.

**Data collection tools.** The main tools for data collection came in the form of the participants’ altered books (a form of journal that mixes visual imagery with written text) and the researcher’s journal (a journal used to record observation and notes during the research study). Throughout the year, participants recorded journal entries in their altered books reflecting on their learning during specific activities that occurred during a given week. The goal was to
complete one reflection each Friday, except when holidays or other interruptions to the school calendar made this difficult. Throughout the year, I kept a researcher’s journal where I wrote down reflections about how successful or unsuccessful different learning activities were based on whether the students were capable of using the prescribed constructivist teaching strategies to meet learning objectives or not. Additionally, I recorded how engaged or motivated the students were using different teaching strategies (whether they were student-centered or scripted), and the behaviours of students during the creation of their altered book pages (see Figure 5, p. 54). Entries in my researcher’s journal were dated at the top and were generally a summary of the events that took place that week in the classroom, with an emphasis on the time students spent creating their altered book entry. At the end of the school year, the participants’ entries and the researcher’s
journal were analyzed and coded for reoccurring key themes (see Figure 6, p, 55). Personal observations were used to support key findings and any complications that may have impacted the implementation of constructivist teaching strategies, such as differentiated instruction, student group work, experiential learning, and inquiry-based learning that took place throughout the school year.

**Figure 6**: Sample of data coding.

**Procedures.** The study took place in the researcher’s classroom of eleven Grade Four students. Each student was provided with a hard bound story book that they could turn into their altered book. At the beginning of the year, the students were taught how to use a mix of writing and mixed media art strategies to design pages in their altered books, such as creating backgrounds with textured paper or paint, and then adding details with markers, stamps, magazine clippings, oil pastels, and chalk pastels. The first lesson involved going on a nature walk and examining a salmon spawning creek, the second lesson involved inviting elders into the
classroom to help each student design a page about their crest (each community member belongs to one of four larger houses or families: Wolf, Raven, Eagle, or Black Fish), and the third lesson involved the students choosing one aspect of good character that best described them. Altogether, there were sixteen entries (see Appendix C, p. 108) created in the participant’s altered book. Not all ten students completed all sixteen entries due to their excused absences for reasons such as, doctor’s visits, dentist, and family trips. Pages for the altered book were created from November 2015 (once ethics approval was granted) until the end of June 2015. Once the students understood how to create pages in their altered books, they spent two hours each Friday afternoon (when possible) writing a reflection and creating a page about what teaching strategies they enjoyed or did not enjoy for the week. The students designed a page in their altered books using artistic materials of their choice: painting, drawing, stamping and collage based on their weekly reflection. The theme of the written reflection was also included in the design of the page.

The participants were provided with a weekly reflection prompt sheet to help them write reflections in their altered books. At the beginning of the study, it was intended that a weekly reflection prompt sheet with five specific questions (see Table 1, p. 57) would be used to assist students with writing their altered book entries. I soon realized that these five questions were not generating the depth of reflection required for accurate data collection, and that the five questions did not always allow the students to describe learning activities accurately. The students were then given questions or prompts based on specific activities or learning themes, alternating with times where a revised version of the original five prompts was used (see Table 2, p. 57). The students could choose any activity that occurred during the week to reflect on in their altered books.
1. What experiential learning activities did I complete this week?

2. How, specifically, did these activities connect to a school subject/ lesson?

3. What did I like or dislike about the experiential learning activity?

4. Why did I like or dislike about this learning activity?

5. Why does this learning matter, or why is it significant?

*Table 1: Original Weekly Reflective Writing Prompts (Based on the work of Ash & Clayton, 2004)*

<table>
<thead>
<tr>
<th>Prompt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What activity did you enjoy the most this week?</td>
</tr>
<tr>
<td>2. What school subject was the activity for? What did you learn about? Be specific.</td>
</tr>
<tr>
<td>3. What did you like about the activity?</td>
</tr>
<tr>
<td>4. What made this activity better than regular/normal lessons?</td>
</tr>
</tbody>
</table>

*Table 2: Revised Weekly Reflective Writing Prompts*

General observations of participant engagement were recorded in a researcher’s journal throughout the year by writing reflective entries that documented how the students behaved during their creation of altered book pages. I used Kolb’s model of the teacher’s role in providing scaffolding and guidance during student-centered activities to help guide my approach to assisting my students. In the Kolb model teachers take on four main roles when providing guidance to their students: 1) the facilitator role; 2) the subject/expert role; 3) the standard setter/evaluator role; and 4) the coaching role (Kolb, 2014, p. 220-221). In the “facilitator role”, the teacher helps students get in touch with their personal experiences and models how to write reflections. In the “subject/expert” role, the teacher uses their knowledge of subject matter to help students create written reflections that connect to subject material and learning outcomes. In the “standard setter/evaluator role”, the teacher helps students achieve the level of knowledge and skills required for the student to obtain mastery. In the “coaching role”, the teacher helps students apply knowledge to achieve their goals. At the end of the 2014-2015 school year, the students’ altered books were collected and the qualitative findings were analyzed to seek evidence of engagement in experiential learning activities, greater interest in subject matter, increase in curiosity, and deeper connections to learning outcomes.
Data analysis. At the beginning of my study, I believed that my students would communicate a level of depth in their writing that would allow me to analyze their writing for key ideas and thoughts that would support my research questions. In my researcher’s journal, I kept notes about the effectiveness of each altered book activity. I soon realized that my students interpreted the original prompt questions (see Table 1, p.57) in a different manner than I had originally envisioned. I went back to my research to discover different strategies that I could use with my students to strengthen their skills to help them reflect more effectively. I decided to change some of my altered book activities and prompts based on the work of Thorpe (2004) (see Figure 7, p. 59), which helped me to understand that: 1) in the beginning, most participants reflect about their “awareness”; that is their physical actions and the steps they take during learning activities; 2) next they move towards “reflection”; at the reflection stage participants are able to make simple connections between learning activities and outcomes; and 3) as participants progress they become “critical reflectors”. At this stage, participants can make deep connections between content and the process of learning activities, and then transfer this awareness to new situations.

Toward the end of the year, the participants’ altered books were retyped and stored on an electronic file to make it easier to examine them for key words and ideas. To ensure participant anonymity, each participant’s file was saved under the headings Student 1, Student 2, etc. Information regarding age and sex was not required. The data was analyzed to gain a better understanding of how the students’ felt or perceived constructivist teaching strategies compared over scripted programs. Their altered book entries were coded for key words that were common to the majority of the participants. These key words were further analyzed for repeating themes
that supported or did not support that the students preferred constructivist teaching strategies over scripted programs.

- **Habitual Action, Thoughtful Action, and Introspection**
  - Non-reflectors typically demonstrate a lack of evidence of deliberate appraisal of concepts or ideas. The individual presents knowledge about a concept with any attempt to appraise that knowledge. Essentially, no learning takes place.

- **Content Reflection, Process Reflection, and Content & Process Reflection**
  - Reflectors in their writing provide numerous indications of their thinking processes. They show that they are engaged in the various skills of analysis such as self-awareness, description, critical thinking, critical analysis, discrimination, synthesis, and evaluation of the concepts.

- **Premise Reflection**
  - Critical Reflectors are individuals who showed that they engaged in higher levels of thinking and analysis. These individuals are active learners who seek out the why of things, who acknowledge a current set of beliefs and values behind their actions, who critically review assumptions, presuppositions from prior learning, and who readily change their position. They adopt a new perspective regarding a concept or situation, which shows learning.

*Figure 7: Thorpe’s “Theoretical Model of Reflection” (Thorpe, 2004, p.329).*

**Ethical considerations and trustworthiness.** The population was considered ethically “vulnerable” (due to their young age, my dual role as teacher and researcher, and their Aboriginal heritage); thus free and informed consent was sought from parents/guardians of participants and the participants themselves before their data was included in the study. In addition, past practice, has shown that researchers often examined Aboriginal people as ‘outsiders’ and did not respect the traditions and cultures that are unique to each Aboriginal group. Often federal and provincial governments use research findings to support their argument that Aboriginal groups need to be micromanaged. Even recent changes in BC’s educational policy acknowledge that little was done in the past to accommodate and incorporate Aboriginal perspectives in the curriculum or classroom ([http://curriculum.gov.bc.ca](http://curriculum.gov.bc.ca)).
Approval from the principal of Coast Tsimshian Academy to conduct the study was granted in October 2014. Approval from the Director of the Lax Kw’alaams Board of Education to conduct the study was granted in October 2014. Permission to conduct the study was obtained from the Vancouver Island University Ethics Board in December 2014. After permission from the Ethics Board was received, an informed consent letter was sent home to all of the parents-guardians. The consent letters were asked to be returned to a drop box at the office by the end of the week that they were sent home. To ensure anonymity, the principal agreed to keep all returned consent forms in a locked filing cabinet in his office until the end of the school year. All the consent forms would be given to the researcher once final marks had been posted at the end of the school year.

An additional copy of the consent form was sent out at the end of May 2015 to each parent-guardian as past practice had shown that parents-guardians were reluctant to return permission slips to the school. As an incentive to encourage parents-guardians to return the consent forms by the end of May 2015 they were provided with an entry for a draw to win a fifty dollar grocery card. All parents-guardians were given a ticket to enter the draw if they returned the consent form to the office. They were under no obligation to give permission for their child’s altered books to be used for research to enter the draw. Consent forms simply needed to be returned to the office whether they were signed or not for the parent-guardian to receive a ticket for the draw.

All data collected from the participants was kept on a password secured laptop that belonged to the researcher and was kept in my home office to prevent any unintentional connection between students in the Grade Four class and data findings in this study. All paperwork pertaining to the research was also kept in a locked filing cabinet in the researcher’s
home office to protect participant anonymity. The researcher’s journal was kept in a locked storage cabinet in the classroom when needed at the school, or kept in my home office. The altered book of the student that did not have parental consent was returned to their parent at the end of June 2015 to ensure that data was not collected from that student for use in the study. All other altered books were returned to the participants in September 2015 after they had been examined for data collection. Participants’ names were coded during analysis of data to protect anonymity. To ensure that no connections could be made to individual participants any quotes used from participant’s altered books had no names attached. Analysis and coding of the altered books did not take place until the end of the school year to safeguard that no data collected from the participants would impact their overall grading for the year.

To provide validity and reliability for the collection of data a variety of data collection tools were used. Primary data collection was provided by written and visual entries in the participants’ altered books, notes collected in the researcher’s journal, experience though direct observation, general discussion of over aching themes with external auditors, and assessment of students’ grades in different subject areas. Data collection techniques were limited due to ethical concerns regarding the age of the participants and their Aboriginal heritage. Findings were double-checked by a thesis advisor.

**Potential research bias.** After years of working with scripted programs (*Reading Mastery* and *Saxon Math*), I have become disenchanted and disillusioned with using them. Without meaning to, this bias may come across in my teaching and unintentionally influence my students’ reactions, feelings, and learning during the use of scripted programs. To counteract my own bias, I will record, analyze, and include all findings from my research whether the findings support my personal beliefs or not. I will also ensure that my teaching is observed throughout
the year so that I teach all lessons and programs in a manner that gives scripted programs and constructivist learning activities equal time, assessment, weighing and support. To help counteract some of my own unintentional biases, I will use auto-ethnography as a research methodology to help place my research in terms of the uniqueness of living and teaching in an isolated Aboriginal community.

**Limitations.** There were several limitations to this study that may or may not have impacted the data analyzed, for instance:

1. **Small Class Size:** a larger sample size for the research could provide more accurate assessment of percentages in favour or not in favour of engagement during constructivist learning activities.

2. **Lack of Time:** School scheduling conflicts, holidays and professional development shorten the school week and may result in times where the students will not be able to complete their altered book entry.

3. **Limited Knowledge about Reflection:** It may take the participants a long time to understand how to write useful and on task reflections because they have no previous experience with reflecting on their learning. Therefore, where there be limited reflections, it cannot be assumed that there was not a deeper thought process.

4. **Uncontrollable Variable:** It will also be difficult to recreate the exact compounding variables of each student’s learning experiences due to the complexity of their lives. Living in an isolated Aboriginal community creates a set of unpredictable conditions that students in other areas will not be impacted by. The following are a few examples: a lack of resources (texts, internet
reliability, artifacts and guest speakers); a lack of services, higher teacher turnover; students leaving and returning to the community; gaps in education; and lack of cultural relevancy in curriculum resources. Additionally, all students have different backgrounds, interests, and knowledge making it impossible to create an experimental design with exact repeatable steps that will result in identical findings or key themes.

5. Ethics Requirements: Obstacles were overcome to meet ethical requirements for the research. I found that research on children and Aboriginal groups requires adhering to challenging ethical requirements which have the potential to limit the types of data collection tools that can be used for research, such as not being allowed to use interviews, recorded notes from conversations, or surveys.

6. Parental/ Community Support: I needed to convince my parents that the research I am conducting is in no way intended to reflect negatively on my students’ ability to learn as Aboriginal students. Too many times data about Aboriginal students’ perceived low academic results have been targeted by the media and the government. The families in Lax Kw’alaams want their children to be successful. I know that every parent in the community wants the best for their child, but it is difficult to reconcile present day education with the negative experiences that parents and grandparents went through. As a result, this may be a reason for them not to provide consent for their child to take part in a research study.
Chapter 4: A Journey of Change

The Beginning of the Journey

Curiosity is the cure for boredom. There is no cure for curiosity.  
-Dorothy Parker (source unknown)

Outdoor education is the way. The beginning of my research journey was a mixture of excitement and frustration. The thought of writing a large academic paper seemed daunting and unattainable at the start of the process. As part of my Master’s program I attended summer courses at Vancouver Island University during July 2014 to begin the process of writing my thesis. After many conversations with members of my cohort, I was confident that I wanted my research to be about the effect of outdoor learning environments on student motivation and engagement. The only problem that I had was figuring out how outdoor lessons would play out effectively where I lived. I knew from the previous year teaching my Grade Four class, that I saw a major change in their classroom behaviour and engagement when we went on an overnight school camping trip, kayaking, and a day long hike. It seemed when a field-trip was involved, I had a brand new class of students who were excited and eager to help one another. This attitude was a complete turn-around from my students’ usual negative, antagonistic, or bored reaction to each other and their school work.

While I was eager to explore books about outdoor education it soon dawned on me that the inclement weather of the Pacific Northwest Coast was not going to work in my favor. Anyone that has visited the Northwest Coast will be aware that it is incredibly beautiful, but that it rains constantly. While I would be eager to pursue lessons in the vast wild outdoors that surround the community of Lax Kw’alaams, I doubted that my students would share my enthusiasm, especially if it meant they would be soaked and muddy, and constantly cold from the damp, wet weather.
A fork in the path. If I wanted to pursue outdoor learning environments as my topic, I would have had to conduct my research during a very short window at the beginning of fall or in the last two months of the school year. Neither time window seemed conducive to collecting the information that I needed for my research. Luckily, a previous graduate, from the Master’s program at Simon Fraser University, came as a guest speaker to share her research journey with us. She brought with her some examples of altered books that she had created as her researcher’s journal. I was immediately captivated. Altered books are amazing examples of art. I knew right away that I wanted to try and make altered books with my students. However, the question presented itself: How would I incorporate the creation of altered books as a valid research study? I was still set on writing a paper-based on data collection and analyses, although it was recommended to me several times to avoid this because I was working with Aboriginal participants who were also children, and it could be difficult to obtain ethical permission. Therefore, my first attempts at coming up with a research question still focused on connecting outdoor education with the creation of altered books.

A new direction. With advice from my professors at Vancouver Island University, I was able to settle down on a research topic that would examine how the use of constructivist teaching strategies might increase student engagement with the use of altered books as a form of journal where students could reflect about different learning activities in the classroom. I set out to collect materials as I knew that there would be little chance to obtain anything once I was back in Lax Kw’alaams teaching. The community has only a few small corner stores, with limited ferry service to the next major town of Prince Rupert. Prince Rupert has limited businesses, and is the home of the smallest Wal-Mart in Canada. I realized that resources and materials that did not
come up with me after leaving Nanaimo in the summer would not be coming at all, unless I was in Vancouver for teacher workshops.

The next roadblocks to overcome would be gaining ethical approval and getting parental consent to use the altered books for my research. I was disillusioned when I realized that I would not be allowed to use interviews or questionnaires with my students to ensure that my research adhered to ethical requirements. How much data could I collect from just using my students’ altered books? How deep would their reflections be? I was also deeply concerned about obtaining parental consent. The parents at our school rarely returned forms that needed to be signed, and I knew that many community members were leery of research.

**Implementing Change in my Classroom**

As soon as I returned to Lax Kw’alaams, at the end of August 2015, I immersed myself in reading books and articles on constructivism, metacognition, experiential learning, and reflective journaling. I was immediately drawn to the work of John Dewey (1938), Sir Ken Robinson (2009), and Ron Berger (2014). On the first day of school, I implemented their recommendations in my classroom: circle time, meditation, morning breathing exercises, going over lesson outcomes at the beginning of lessons, exit tickets, student group work, and much more. My students looked a little perplexed, at what I assumed they thought of as unusual activities that their eccentric teacher was making them do. However, despite some initial reservations, my students participated in these new classroom activities. Our new principal was accepting of my research study, and encouraged teaching to the ‘whole-child’ and implementing ‘21st century teaching strategies’ in my classroom. I introduced altered books to my students and explained that they would be creating their own altered books throughout the year as a form of
journal writing. I think that they were overwhelmed looking at examples of altered books, but they were very excited about choosing a book to turn into their altered book.

While I was waiting for approval from the ethics board, I decided to take some time to teach my students how to create pages in their altered books. Our first major activity was to go on a day long hike to a local salmon spawning creek to examine the lifecycle of salmon. Many of my students had been to ‘Humpy Creek’ before and were eager to go there. I decided to invite the Grade Seven class to come along to engage in some peer bonding with older students. When it was time to create their altered book page, I provided them with guiding questions to answer (see Table 3, p. 67). When their written entries were completed we sat down together as a group and critiqued them so that the students could provide each other with feedback about what they liked and how they could answer their questions with more depth (see Figure 8, p. 68).

<table>
<thead>
<tr>
<th>Humpy Creek Reflection Prompts</th>
</tr>
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<tbody>
<tr>
<td>1. What did you like best about this activity?</td>
</tr>
<tr>
<td>2. What did you like the least about this activity?</td>
</tr>
<tr>
<td>3. Did you like or not like the grade 7s coming with us?</td>
</tr>
<tr>
<td>4. What did you learn?</td>
</tr>
<tr>
<td>5. What was the biggest obstacle you had to overcome?</td>
</tr>
</tbody>
</table>

*Table 3: Altered book reflection prompts for Entry 1*
Figure 8: Student’s altered book entry for Humpy Creek: the original text has been painted over and reworked with the student’s own text, stamping, drawing, and dried leaf pressings.

Transcription: What I liked most about our trip was I caught a big salmon. I didn’t like how we had to walk for a long time. I didn’t like the grade 7s coming with us because they were too bossy. I learned that humpies are salmon. The biggest obstacle I overcame was walking through the water because the water was so cold.

For the second practice entry in their altered books, I had the students invite a family member to come down and spend a Friday afternoon with the class. Food and snacks were provided, and family members were asked to help their child create a page based on their child’s crest (see Figure 9, p. 69). In Tsimshian culture every member of the tribe belongs to one of four crests (Eagle/ Lasgyiik, Raven/ Ganhada, Wolf/ Laxgibuu, or Black Fish/ Gispaxwata). I wanted the students to have a page in their altered book that tied in with their cultural identities, and I wanted parents to come and see what their children were creating in my classroom. My hope was that once parents saw what I was creating for my research project that they would be
more comfortable about giving consent. It also provided me with an informal chance to talk to the parents that attended and provide details about my research project.

Figure 9: Student’s altered book page for family crest: the student chose to repaint their book pages in traditional colours (red and black) and then used collage and drawing to decorate their page.

The third practice entry was on character development. In the preceding weeks, I had the class examine character traits: curiosity; gratitude; grit; growth mindset; optimism; purpose; self-control; social/ emotional intelligence; and zest (see Appendix G, p. 116). We discussed them as a class and then, at the end of the week (for about two months), they filled out a chart colouring in the bar from level one (low) to level four (high) on each of the nine characteristics to show how they thought they did for that week. When it came time to create their altered book page I asked the students to choose one of the nine traits they thought best described them and create a page about that trait (see Figure 10, p. 70).
The real research begins. At the end of November 2015, I received ethics approval to begin my research. I had already begun using constructivist and metacognitive activities in my classroom at the beginning of the year, such as: morning meditation and breathing exercises (see Figure 11, p. 71); exit tickets; reinforcing learning outcomes at the beginning of the lesson; using groups or partners when possible; going outside to complete learning activities; hands on experiments; and weekly reflections sheets on behaviour and learning goals. After encouraging the staff to share their complaints and issues with our new principal, we were able to switch from Saxon Math (a fully scripted program) to Jump Math. While Jump Math still provided lesson and examples for teacher to explain learning outcomes, it did provide me with the chance to use group work, kinesthetic activities, and math manipulatives, such as place value blocks, geometric
pieces, fraction block, and model clocks in my lessons. That just left *Reading Mastery* as the only scripted program that I still had to use.

![Student's altered book entry](image)

*Figure 11:* Student’s altered book entry on Morning Meditation/ Self-regulation: the students were asked to choose paint for the background that would allow the original text to show through so that they could gain a better understanding of mixing the original text and images with their new text and imagery.

I wanted the students to use a similar set of prompt questions each week because I felt this would make it easier at the end of the year to analyze their findings (see Table 1, p.57).

However, it quickly became apparent that my students did not have enough experience writing self-reflections to provide the level of depth I was looking for in their answers. It was not that their answers were wrong; they just interpreted the answers differently than I had intended and it did not give me much to work with to interpret for the study. I realized that I would have to provide guidance with most of my students on a one-to-one basis, and that I would have to vary my expectations for their journal entries depending on the constructivist activities we had
completed that week. I also decided to simplify their prompt questions so that their reflections would be more focused (see Table 2, p. 57). A typical answer to the question, “Why does this learning matter, or why is it significant?” resulted in an answer such as “Lava melts down the volcano and it hardens into rock”; or “So we know when the volcanoes explode” (see Figure 12, p.73). Revising the question to ask “What made this activity better than regular/normal lessons?” resulted in answer such as “I like hanging around with others and learning through play”; or “I liked the magnetic fluid experiment because we made something instead of answering [textbook/ worksheet] questions” (see Figure 13, p.74). The following section on “Student Revelations and Insight” examines the findings from the ten participants’ altered books.
Figure 12: Student altered book entry based on “Original Weekly Reflection Prompts”: the student was provided with a template to write their reflection on and then chose to rework the original page by painting the background in ‘fire’ colours. They also drew a picture of a volcano because they wrote a reflection on building a volcano for science class.

Transcription: We made volcanoes with a buddy. We made our volcano and exploded them with vinegar, baking soda, Tide. We are learning about rocks in science. I liked how it was bubbling down the side.

This learning matters so we can be safe around volcanoes so people can be safe around them. I never want to learn about rocks again.
Figure 13: Student altered book entry based on “Revised Weekly Reflection Prompts”: This entry shows more in-depth reflection about the constructivist teaching activity they enjoyed that week. The student chose blue and purple for their background because it was their favourite colours and included a drawing of a Japanese actor’s mask to enhance their entry.

Transcription: I liked the “What’s in the box?” game the best last week. We were learning how to act. We had to pretend there was something in the box. The first person went than the next person had to do the same thing only bigger. I liked being able to run around the room and screaming. I liked it better than normal lessons because I got to be myself.
Student findings and insights. The purpose of this research study was to discover ways to increase student engagement and motivation in my classroom. I believe that years of using commercially scripted programs, such as Reading Mastery and Saxon Math, has resulted in student disengagement during language arts and math. It is hard enough keeping young students interested in what they are learning without having to use teaching materials that are monotonous and make them tune-out. After attending workshops and reading recent research I knew that I wanted to make my classroom more student-centered and hands-on. The aim of this research study was to examine if the use of constructivist teaching strategies, such as: differentiated instruction; student group work; inquiry based learning; and experiential learning; would result in greater student engagement. My plan was to incorporate constructivist teaching strategies in my classroom, whenever I could, outside of the time I had to devote to using Reading Mastery (scripted program) and Jump Math (math program). This did not leave a lot of time for using constructivist teaching strategies because of gym, band, and Sm’alygax classes. In the end, we mainly used constructivist techniques during science, writing, and visual art (which worked out to approximately ninety minutes each day).

Due to my students’ age and ethnicity, journals were used as a non-invasive data collection tool. The type of journal used was the altered book because it allows the writer to use a mix of writing and visual art to create their message. Encouraging a mix of writing and artwork would allow journal entries to be accessible to all my students: the weak writers and the strong writers. My original goal was to have my students complete a one or two page journal entry in their altered book each Friday afternoon. Unfortunately, due to absences and unplanned schedule changes my students were not able to complete an entry every Friday (they completed stwelve entries from December to June that were used for data analysis). The journal entries
were to be a mix of writing and art work that represented the student’s reflection of constructivist learning activities for the week. Students could write about one specific activity or about the week in general. The students were provided with writing templates or could make up their own writing design in their altered book. They were then provided with various forms of art media, such as paint, chalk pastel, oil pastels, collage, drawing, and stamping, to decorate their page. The students were encouraged to develop layers of decoration to enhance the overall visual impact of their journal entry.

Through a qualitative methodology using my research journal, entries created by my students in their altered books, and through my reflections in this unique educational culture, I was able to gain insight into my research questions. Entries from my students’ altered books were transcribed and then examined for reoccurring themes. Coding involved looking for specific key words or phrases that related to preferring or not preferring specific teaching strategies. These key words and phrases were then grouped together under generalized overarching themes. Key themes that were revealed from analyzing my students’ altered books were then compared to notes and findings in my researcher’s journal and from observational notes.
What the students enjoyed. Qualitative data analysis was used to search for common themes and repeated keywords that would reveal information about the level of student engagement and interest when constructivist teaching strategies were used in the classroom. After examining and coding the entries written in each of the ten participants altered books it was clear that the participants preferred learning when constructivist teaching strategies were used in the classroom. The participants made positive comments about constructivist teaching strategies, such as “I like learning outside because we got to touch new things and explore new things”; “I like learning with hands-on projects because I learn more”; and “I like hanging around with other (students) and learning through play” (see Appendix H, p.118, for full coding table). Common themes that were voiced by most of the participants were the enjoyment they took in being outside to learn lessons; learning by building objects, or conducting experiments opposed to doing worksheets; and the chance to be loud and move around (see Figure 14, p. 78 and Figure 15, p. 79). Listed in order from the most popular to least popular, the top eight positive learning themes that the participants discussed in their altered book entries were: 1) learning outdoors (all ten participants); 2) hands-on learning (nine participants); 3) movement (seven participants); 4) learning and experiment with new ideas (seven participants); 5) teamwork (five participants); 6) connecting with family (four participants); 7) socialization (three participants); and 8) learning about their culture (two participants) (see Figure 16, p. 79).
Figure 14: Altered book entry on a swimming lesson: student’s choice of school activity they enjoyed most for the week.

Transcription: I liked swimming lesson the best. I want to learned how to swim. We are learning how to swim at gym. I learned the backstroke. I liked swimming better than regular classes because we get to play game.
Figure 15: Altered book entry on drama game called “What’s in the box?”; student’s choice of school activity they enjoyed most for the week.

Transcription: When we were learning about drama. It was better because we got to be noisy and loud. I liked “What is in the Box?” this week because it was fun. We get to play small. Big, bigger. We scream a lot. We pretending there is something in the box. It is the boy is the biggest. He was loud. It was fun. I was on the back of the line so I had to be the loudest.

Figure 16: Top eight themes found from data analysis of altered books.
As a both teacher and researcher in the classroom, it was interesting to discover which teaching strategies I found more effective with my students. Differentiated instruction and scaffolding are encouraged at Coast Tsimshian Academy; therefore, implementing these teaching strategies in my classroom was part of my daily routine. I felt that going outside to work on lessons and using material in their natural environment kept my students more engaged and interested in what they were learning. This finding was supported by altered book comments, such as “I like learning outside because it is real.” I observed my students many times talking about how they disliked having to sit down all day long because it was tedious and difficult for them. They preferred when they could get up and move around the classroom. Many students made comments, such as, “This is better than doing worksheets because I didn’t have to sit still in my chair”. As it was not always feasible to go outside, I tried to implement more time using kinesthetic learning activities. Although, it was difficult for me to incorporate experiential learning activities in my classroom (mainly due to unfamiliarity on my part with teaching this way) I tried to base most of my science and art units on this teaching strategy (see Figure 17, p. 81). One student commented that “I liked the magnetic fluid experiment because we made something instead of answering questions.” My students enjoyed conducting experiments and building things although, at times, the activities did not always work out.
Figure 17: Student altered book entry on silly putty: student reflects about an experiential learning activity during a science unit on matter where they made silly putty.

Transcription: I liked the silly putty experiment because it was fun. I liked getting my hands wet with glue. The glue was cold. We made the silly putty for science. We are learning about the phases of matter. It was cool putting the food colouring in the silly putty. This is better than doing worksheets because I didn’t have to sit still in my chair. My silly putty turned pink and I like to squish it.

What the students did not enjoy. Some of the teaching strategies, both constructivist and teacher centered, did not work out as planned with my students. Using inquiry-based learning in my classroom did not work out very well because not all the students had the reading and writing level and experience to conduct independent research confidently. It also took them a while to realize that they could use different strategies to find answers to problems. They felt very insecure about sharing different ideas and trying new strategies and often wanted an adult to work with them for reassurance that they were completing their work correctly. However,
working on weekly goal setting sheets helped them to understand how they learned and what learning strategies and outcomes required extra help (see Figure 18, p. 82). By investigating and coding common themes from entries in the participants altered books it became clear which learning activities they did not enjoy.

Figure 18: Nature walk altered book entry: the student reflects about a nature walk where the class searched for herring spawn and sea lions. At the end of the entry, the student sets a learning goal they plan to achieve for their next outdoor lesson.

Transcription: This week we went for a walk around the boardwalk for science. We were going to look for sea lions and herrings. I didn’t see any sea lions or herring spawn or herring eggs. We went down to the beach to look for crabs. I found some crabs to look at. I also seen bullheads in the tidepools. It was small and it was cool! I also got to see hermit crabs and china hats. I learned that china hats a living things and are squishy. I liked learning outside in the fresh air and going for a walk. My goal for next time is to look for more things when I am outside.
Negative teaching strategies and learning experiences that came to light from examination and coding of the ten participants’ journal entries showed that all ten of the participants (unanimously) did not like completing the *Foundation Skills Assessment*. My students felt very uncomfortable writing this assessment because it required them to sit still and not talk for hours at a time, and it was stressful for them because many of my students did not have the skill level required to complete this test. These feelings were made clear in their altered book entry on writing the *Foundation Skills Assessment* where they made comments, such as “Writing the FSA makes me feel bad because it is hard for me”; the "FSA made me feel really bored because we had to sit down and be quiet"; “Writing the FSAs made me feel bored because it takes so long”; and “I think I did bad on it” (see Figure 19, p. 84). My students also made it clear in their altered book entry on *Reading Mastery* that they did not like being taught using a scripted program. Nine of the ten participants, when given three options about how much they liked *Reading Mastery* (a lot/ sort of/ not one bit) circled ‘not one bit’ and wrote comments, such as “I don't like one bit of *Reading Mastery*”; “I don't like *Reading Mastery* because it is boring”; and “I don't like answering questions in the workbook.” This negative sentiment was reinforced by the visual imagery included with their written reflection that consisted of unsmiling faces or comments, such as “Reading is boring” and “I hate Reading Mastery” (see Figure 20, p. 85).
Figure 19: FSA altered book entry: the student reflects about their negative feelings toward writing the FSA.

Transcription: I didn’t like writing the FSAs. Writing the FSAs makes me feel bored because it is long.

Instead of writing the FSAs we could be interviewed.
Figure 20: Reading Mastery altered book entry: the student reflects on their experiences and feelings about using Reading Mastery.

Transcription: How much did you like Reading Mastery? Not one bit. What don’t you like about Reading Mastery? I don’t like Reading Mastery because it is boring. What do you like about Reading Mastery? I don’t like anything. You have to learn how to read. What could we use instead of Reading Mastery? A book so I can get better at Reading. “Reading is boring!”

Some interesting, contradictory findings I discovered from my observations and by coding the participants’ altered books was about group work and worksheets. Working in groups or with partners is the constructivist teaching strategy that my students are most familiar with and have used in past grades. However, it was a teaching strategy that received a mixed response from my students. While on one hand, they wanted to socialize and work together on projects, on the other hand, they would start squabbling and arguing with each other, and often would leave one group to try and work with another one. I postulate that the students benefit greatly from group work, but at their age in Grade 4, still have difficulty separating their personal
feelings and events that occur outside of school from learning in the classroom. This makes it difficult for them to work in a group when the group is assigned by the teacher. Most of my students wrote in their altered book entries that they did not care for doing worksheets or answering textbook questions. Making comments, such as: “I liked [hands-on learning] better than doing regular classes because we didn't have to do worksheets” and “I liked the shapes game because we usually do lessons with a worksheet, but this time we didn't and we did actual fun things.”

Part of the difficulty with worksheets and writing down answers to questions is that some of the students are not comfortable with the physical act of writing, and they lack confidence in their ability to correctly answer questions (although this is often not the case). However, some of my students stated they enjoyed doing timed math drill sheets on multiplication and division. They wrote in their altered book entries that completing drills “makes me feel good and I’m getting better” and that “drills make me happy because it makes me better at math.” I feel that the students did not mind completing timed math drills because they are based on very specific skills that the students can master with practice, and it is easy to track their improvement when drills are based on a set number of questions that never change. Setting goals and teaching my students to monitor their growth over the year were critical aspects of developing their metacognitive skills.
**Metacognition skills.** In terms of metacognition, my students required a lot of teacher guidance and prompting both in the creation of entries in their altered books and when completing weekly goal setting sheets. My students had not engaged in much reflection previously, and being between the ages of eight and ten are still developing their brains, so metacognition did not always come easily to them. Some of the participants were able to work more independently by around their tenth entry. Others required varying levels of assistance throughout the year. The remainder of the participants needed direct adult guidance to help them think thoroughly about their reflections before committing them to paper. All of my participants’ altered book reflections were graded according to Thorpe’s (2004) critical reflection scale (see Figure 7, p. 54). Three of my students graded at the “non-reflector” stage; essentially they were at the beginning level of reflection and most of their writing was about the events that took place with minimal connection to the benefits of the constructivist teaching strategies that were used. They wrote comments in their altered books, such as: “My goal for next time is to look for more things when I am outside”; “Learning outside is different because I can’t walk around in the classroom”; and “I liked making the bath bombs because they smelled nice.” Six of my students graded at the “reflector” stage; at the reflector stage the student was able to make connections between learning outcomes and the advantages or disadvantages of different teaching strategies. They wrote comments in their altered books, such as: “The museum programs were a better way to learn about the past because I liked listening to the stories”; “My goal for next time is to touch more things and even try the taste of some things we find outside”; “I liked the shapes game better than Reading Mastery because in Reading Mastery you just sit there and answer questions”; “Meditation makes me feel good because it helps me to calm down”; and “My goal for next time is to bring my Ipad to take photos of things that I look at or
to write about them in my journal.” One student was graded at being between the “non-reflector” and “reflector” stage. None of my students reached the “critical reflector” stage; at this stage students show higher levels of thinking and analysis and critically review assumptions (see Appendix I, p. 125 for more information). None of my students reached the “critical reflector” stage, but this was not surprising because most adult students have difficulty reflecting at this level as well. However, I feel that encouraging students to write reflections on their learning throughout elementary and high school will provide them with the ability to easily reflect at the “critical reflector” level.

**Conclusion**

Overall, analysis of that data provided by the ten participants supported my supposition that my students do not enjoy scripted programs, and that they were more engaged when constructivist teaching strategies were used. In particular, they enjoyed constructivist teaching strategies, such as: learning outdoors, experiential learning, differentiated instruction, and kinesthetic learning. More practice and reinforcement of constructivist learning strategies, such as inquiry based learning, multiple solutions to problem solving, and student group work is needed for the students to fully embrace and benefit from these strategies. Metacognition is critical to encouraging student voice and their ability to become independent learners. Teaching students how to set goals and monitor their strengths and weakness is of vital importance. Altered books did provide a tool for my students to use to develop their metacognition skills, but they require more support in this area.
Chapter 5: Revelations from Altered Books

*Education is not a linear process of preparation for the future: it is about cultivating talents and sensibilities through which we can live our best lives in the present and create the best future for us all.*” (Sir Ken Robinson, 2011, p. 10)

**Discussion**

**My students’ preferences.** Based on my findings from conducting this research, I will continue to move towards embracing constructivist pedagogy in my classroom. Although it will take time (and I will no doubt hit roadblocks), I have found with this participant group that this approach to teaching is more effective. In addition, it has been clear to me for some time and has been made additionally clear by the negative feedback made in my students’ altered books, that commercially scripted programs, such as *Reading Mastery* and *Saxon Math* demotivate and disengage my students. Commercial education programs may be useful for providing assistance with some discreet reading and math training where remediation or other supports are required for the short term program; however, used in their entirety, the programs have not proved popular in my classroom.

As in most schools, the previous heavy focus on academics at Coast Tsimshian Academy was to ensure high scores on standardized tests. According to Kuhn & Dean (2004), “the growing reliance on standardized testing of basic skills, with higher and higher stakes, poses a grave danger to the quality of education”. They further state that, “we need a better definition of what it means to be educated” (p. 273). *Reading Mastery* and *Saxon Math* inhibits students by confining them to their seats, making them listen to lectures, and complete repetitive worksheets. My interpretation of my students’ altered book entries on writing the *Foundation Skills Assessment* and *Reading Mastery* shows that my students were unanimous in their dislike of
standardized testing and scripted programs, which makes them doubt their abilities and resist learning.

As a result of this type of student feedback, I prefer the development of metacognitive strategies and constructivist pedagogy because it helps to produce independent learners who develop a love of lifelong learning. In terms made famous by Dewey, “the goal is to bring children up, not as passive recipients of educational content, but as active makers of meaning, capable of exercising independent judgement and of democratic collaboration” (cited in Gregory, 2002, p. 399). My students are excited every time we do science because they know they will be completing hands-on experiments or making things. They cherish going outside to examine their surroundings and having the chance to learn more about nature. It is clear in their altered book entries that they love being able to move around and talk with each other to complete work and problem solve.

Research supports that using student-centered learning and interactive groups in the classroom allows students to help each other by engaging in conversations that deepens their understanding of new learning, and encourages experimentation with new concepts (Papaleontiou-louca, 2003; Mello 2012). Furthermore, using interactive groups encourages all members of the group to check and ensure that no member of the group is having difficulty or being left behind (Mello, 2012). These are valuable attributes that I want my students to master. By developing metacognition and using constructivist pedagogy with students at a young age and continuing the process through to Grade 12 we can create students that have the skills required for 21st century learning desired by BC education policy.
Some bumps in the road. It is clear from my students’ positive reflections in their altered books and their enthusiasm that they prefer when I teach using constructivist pedagogy opposed to scripted programs. Many of their entries describe how they enjoy moving around, making things with their hands, and being able to problem solve with their friends. I enjoy using constructivist teaching strategies in my classroom because I feel that my students learn better when using a student-centered approach. However, it was time consuming to incorporate new and unfamiliar teaching strategies into my regular classroom routine. My students do not always behave the way that they should; and, in some cases, they were not ready for the responsibility and work required when using certain constructivist teaching strategies.

Some of the reasons my students did not always respond well to constructivist teaching strategies could be due to their lower reading and math skills (most of my students were not at grade level for reading and numeracy) which makes it difficult to complete Grade Four level work. Therefore, they had some immature behaviour issues. As well, they were not familiar with student-centered learning, and they did not know how to manage their time nor did they really know how to minimize distractions. As Kain (2003) posits, “are our students really unwilling to engage in complex academic tasks, or are some simply unready to do so?” (p. 105). Perhaps a better approach for developing an inquiry-based mindset in the classroom is to provide a balance between student and teacher-centered approaches. By incorporating a mix of student-facilitated opportunities and mini-lessons (rote or otherwise) in areas where students are struggling it allows the teacher to improve weaker student skills. Once weaker skills have been bolstered, the teacher can resume a more holistic approach. I feel that it is best to embrace all types of methodologies to ensure that I can manage and work with the students that I have in a multi-faceted ways.
My research shows me that there are issues that I need to resolve before I can fully develop my students’ potential as independent learners. Through the lens of my own reflection during this year-long study in my classroom, I realize that my students were sometimes reluctant to embrace constructivist teaching strategies and that, after a while, it began to be a struggle to get them to actually think deeply about the entries they were creating in their altered books instead of just rushing to get their page done. Research by Fox (2001); Joseph (2003); Kain (2003); and Hyslop-Margison & Strobel (2007); indicates that students will often resist attempts to move away from traditional teaching practices because they are accustomed to a passive and mindless approach to learning. Kain (2003) points out that “society’s emphasis on success, instant gratification, the retail/consumer model of education, and, paradoxically, student-centered approaches to learning lead students to look for easy answers and to count on high grades, to avoid difficult work, and to develop inflated perceptions of their abilities” (p. 105). I noticed with my own students that although they complained that ‘normal’ lessons were boring or witnessing them tune out during lessons and seat work, I also observed that they were not always willing to put in the level of work required to take full advantage of student-centered teaching strategies. They appeared to be more interested in socializing with their friends than discussing strategies or new learning. Despite these minor setbacks my students were more engaged and motivated when I used constructivist teaching strategies. I feel that a balance between student-centered activities and direct teacher instruction will keep my students on task and help them be better learners.

Aboriginal cultural perceptions of education can also create a roadblock to learning. Previous government approaches to education, through the use of residential schools, has left negative feelings toward education. These feelings of negativity are valid. It is difficult to
convince the younger generation of the importance of completing their education when they perceive the curriculum and most teaching practices as dissatisfying and of limited relevance to the culture and community. Unfortunately, many community members are unaware of the benefits of using constructivist pedagogy compared to teacher-centered practices. Unfamiliar with constructivist pedagogy they worry that their children will not do well when they leave Lax Kw’alaams to finish Grade Eleven and Twelve in the public school system. Therefore, it is incumbent upon me as a classroom teacher to work with parents to engage them in the various approaches that I will continue to introduce to my students using constructivist methodology. Where my parents are educated and engaged, so too, may their children embrace some of these new conceptual frameworks.

**The value of metacognition and goal setting.** I posit that metacognition and goal-setting are vital to using constructivist teaching strategies in the classroom. Research by Gregory (2002); Joseph (2003); Papaleontiou-louca (2003); Schunk (2008); and Vos & de Graaff (2004); points to metacognition as being key to help students develop deeper levels of learning, and the self-regulation required to take full advantage of constructivist teaching strategies. Implementing metacognitive strategies in the classroom helps students find meaning and motivation in their learning by teaching them how to set goals and self-evaluate their progress (Papaleontiou-louca, 2003; Schunk, 2008; Vos & de Graaff, 2004). The participants in this study are quite young and as research (Kuhn & Dean, 2004; Papaleontiou-louca, 2003) points out, it takes time to develop young minds to the level needed for deep reflection. They had a difficult time setting goals for themselves and managing the behaviour required for learning in an independent environment. In addition, their small class size was a limiting factor; a larger class size may have produced a wider range of results. It was difficult at times to tell if the students
were expressing their own opinions or if they were listening to their peers and simply agreeing with them so they did not feel singled out.

In terms of my research study, I was focusing on altered book entries that were a reflection on constructivist teaching strategies; however, I did include other metacognitive strategies in my classroom for my own benefit. Additional, metacognitive tasks in my classroom include weekly goal tracking sheets, self-reflection sheets for checking unit and drill assessments, discussions, breathing exercises, and morning meditation. I fully endorse Ron Berger’s (2014) belief that the best way to teach students to be leaders of their own learning is to teach them how to assess and reflect on their learning. I feel that goal-setting is critical. Mello (2012), states that “the earlier the age that students learn to reflect about their learning the deeper the connections they will make about what they learn, the better they will know how to set goals and achieve them, and the more capable they will be to relate what they learn to future experiences” (p. 144). It will be a practice that I fully embrace in the future, and I will encourage and mentor the rest of my staff to embrace as well. Having conducted this research, it is apparent to me that students need to begin setting goals and self-reflecting as soon as they enter school in Kindergarten. This will foster and develop the skills necessary to become effective goal setters and instil confidence in students that they are capable of higher levels of thinking and analysis.

I love the idea of using journals, and think that they are an excellent tool. However, creating altered-books was time-consuming and with the current demands in my timetable, it only provides time to create altered book pages, or a similar mix of artwork and writing, on a less regular basis. Trying to meet curriculum demands and going to set classes, such as band and Sm’algyax (native language), take a lot of time out of the classrooms schedule. Unexpected
assemblies, holidays, and unplanned interruptions also make it difficult to devote an entire afternoon on a weekly basis to creating altered book entries. While I enjoy making altered books with my students because I like working on visually creative projects, not all my students wanted to spend two hours or more creating their altered book entries. If I have to keep pushing my students to complete their work the activity becomes less about their engagement and more about enforcing yet another learning activity. As Papaleontiou-louca (2003), states in her research “the trick is to teach metacognitive skills without creating an even greater burden on students’ ability to attend” (p. 17). Perhaps the implementation of the new BC curriculum will create greater flexibility in the timetable, which will allow me to return to creating altered books with weekly entries from my students.

At the beginning of the year, I provided a lot of direct instruction, but this lessened as the year progressed. Using direct instruction, demonstration, and step-by-step instructions can help students develop their skills using metacognition and constructivist teaching strategies (Joseph, 2003). Upon reflection, I should have continued to provide direct instruction and demonstration throughout the year. This particular group of students had ongoing disruptions in their learning in Grade Two and Grade Three due to frequent teacher turn-over. As a result, most of them need extra support with reading, writing, and numeracy. It is important for teachers to keep in mind context and students’ prior knowledge; if strategies and new learning are too unfamiliar or if they have no prior knowledge to build upon, students will quickly become overwhelmed. As Fox (2001), points out “this gives rise to one of the most difficult and persistent problems for teachers, namely that of devising lessons and activities which succeed in persuading pupils to try, whole-heartedly, to lean something which is not, immediately, or obviously, interesting to them” (p. 33). I greatly enjoy that constructivist teaching strategies allow me to develop deeper bonds
with my students. I know how much they appreciate and feel valued when they are taken on class trips, such as day-long hikes, day trips to Prince Rupert, and camping. Building relationships is crucial to developing motivation and engagement in our students. As my principal says, “you cannot teach to the child until you have a bond with that child”. Embracing constructivist pedagogy will allow teachers to develop this bond and provide them with the skills needed, and demanded, by BC’s new curriculum.

**Suggestions for Further Research**

After completing this study, I feel that it is vital to move away from commercially scripted programs, such as *Reading Mastery* and *Saxon Math*, and instead move towards incorporating constructivist teaching strategies, such as outdoor learning, group learning, experiential learning, and inquiry-based learning in the classroom. This move to constructivist pedagogy is desired in the new BC curriculum and will soon be a mandated way to teach in BC. However, there needs to be more research completed and professional development designed on how to implement these strategies in the classroom, especially when dealing with years of indoctrination in teacher-centered strategies.

I believe that both teachers and students will find the switch to constructivist pedagogy a challenge. According to Kain (2003) “pre-service teachers are, in many programs, exposed to textbooks and methods that follow a reform agenda that includes instruction that is experimental, learner-centered, activity-orientated, interconnected, and constructivist. However, observational studies of schools show that the practice of teaching in most schools remains much as it has always been: content-orientated, teacher-centered, authoritarian, mimetic, and recitative” (p. 105-106). Ongoing training and mentoring will help teachers master constructivist teaching
strategies and provide them with the means to maintain a balance between teacher guidance and student independence.

There also needs to be more research on the development of metacognition with younger students. While research points out that metacognition abilities increase with age, I believe that the younger students are when they begin this process, the better they will be at it. Research into developing metacognitive strategies in the classroom based on age level will help teachers provide the scaffolding that students require to become effective learners.

I would like to see more research into reflective journaling for elementary students. I believe that it is an effective tool, but I felt that I was approaching the teaching of reflective journaling to my class based on my own interpretation of the research I conducted. As most of the existing research is based on high school students or university students I felt that I had to make conjectures about how to manipulate instruction to be suitable for younger students. There was no research that I could find at the time of this study on the use of altered books as a form of journaling tool. I found that altered books were an amazing tool for reflection, even if they were time consuming, and I think that more research is needed to develop altered books into an effective teaching tool that would make them more accessible as a classroom activity that could be used on a regular basis.

**Conclusion**

There needs to be a shift in how we approach teaching and education. The traditional approach that viewed learning as the teacher holding all the knowledge, focused on fact memorization, and promoted hierarchical assessment, no longer meets the needs of today’s students. In light of recent research, the British Columbia Ministry of Education has been working on creating a new curriculum that promotes a shift from past-teaching practices to a
constructivist pedagogy that promotes discovery, the mastery of learning strategies, and the desire for lifelong learning in a new generation of students. This research study examined the impact that using constructivist teaching strategies, such as differentiated instruction, scaffolding, student group work, experiential learning, assessment for learning, and inquiry-based learning had on the motivation and engagement of ten Grade 4 students. The ten participants each created an altered book (a form of journaling that mixes writing and imagery) to write reflections about their learning experiences throughout the school year.

The participants’ altered books confirmed what I have come to believe about my past-practices in teaching. Using commercially scripted programs to provide instruction for reading fluency, comprehension, and numeracy to an entire classroom of students does little to improve the overall academic scores of said students. In the process, the daily use of commercially scripted programs bores the teacher and disengages the students. The participants in this study were more engaged, actively participated, and were eager to try new things when lessons were taught using constructivist teaching strategies. Furthermore, teaching students how to develop their metacognitive skills through regular reflection and involving them in goal setting are vital skills that should be taught from Kindergarten to Grade 12. The use of metacognition and goal setting allows students to have more of a voice in the classroom and teaches them skills that will turn them into lifelong learners. The findings from this research study have encouraged me to switch from a focus on facts and hierarchical assessment to create a classroom environment where the focus is on the learning journey; where all students feel welcomed and have a voice.
References


Appendix A

A Proposed Model for Future Curriculum

Building on the initial work from these teams of educators and academics, the various models were reviewed by curriculum consultants and Ministry staff. During this review, the key elements from the different prototypes were reviewed and synthesized into one overall model for curriculum documents in all subject areas. This new model provides a common set of elements, along with a common set of definitions for each of these elements.

The key elements in this new model are:

- **Enduring Understandings** are statements of big ideas that are transferable to different contexts. They are generalizations based on two or more important concepts stated in a relationship within a subject or area of learning. In this model, enduring understandings are suggestions that teachers can use to organize instruction, as a basis to develop their own big ideas, or to combine with big ideas from other subject areas to develop integrated units.

- **Learning Standards** are explicit statements of what students are expected to know, understand and be able to do in a particular grade. Learning standards consist of two categories: - Curricular Competencies are the processes and skills that students need to develop the understandings and content within subjects or areas of learning. These statements begin with verbs. - Content is the core knowledge (facts and concepts) essential to the development of enduring understandings in a subject or area of learning. At this point, content learning standards do not use verbs, giving teachers flexibility in how they will teach the content.
• Cross-Curricular Competencies – provides a description of the competency as it relates to an area of learning, the competency continua, and student samples. In the future, these links will provide definitions, developmental continua and student samples.

• Implementation Links – provide additional information (written, visual, audio-visual) to clarify and support the curriculum (e.g., curriculum goals and rationale, self-assessment for students, demonstrations of learning, inquiries, and learning resources). Discussion of what would be the most appropriate links will take place in consultation with educators. Feedback and comments are welcome on what to include in implementation links.

(retrieved from http://www.bced.gov.bc.ca/irp/docs/exp_curr_design.pdf)
Appendix B

Kolb Model of the ‘Spiral of Experiential Education’

According to the Kolb Model, experiential learning can be broken down into four main sections:

*Developing the capacity for experience.* Experience requires fully opening oneself to direct experience. Direct experience exists only in the here and now, a present moment of endless depth and extension that can never be fully comprehended.

*Developing the capacity for reflecting.* Reflection requires space and time for it to take place. Information skills of sense making, information gathering, and information analysis can aid in the development and expression of the reflecting mode of learning.

*Developing the capacity for thinking.* Thinking requires the ability to represent and manipulate ideas in your head.

*Developing capacity for action.* Acting requires commitment and involvement in the practical world of real consequences. In a sense it is the “bottom line” of the learning cycle, the place where internal experiencing, reflecting, and thinking are tested in reality. (Kolb & Kolb, 2009, p. 319).
Appendix C

List of Altered Book Entries for the Year

Entry 1: Outdoor Learning Activity: examining spawning salmon

Entry 2: What trait best describes you?

Entry 3: Reflection on volcanoes experiment

Entry 4: Reflection on morning meditation

Entry 5: What learning activity did you enjoy the most this week?

Entry 6: What learning activity did you enjoy the most this week?

Entry 7: Reflection on FSA

Entry 8: What subjects would you like to learn about in our new school?

Entry 9: Word collage about yourself

Entry 10: Reflection on band class

Entry 11: Outdoor Learning Activity: searching for sea lions and herring spawn

Entry 12: Earth Day

Entry 13: What learning activity did you enjoy the most this week?

Entry 14: Class trip to Prince Rupert

Entry 15: What learning activities did you enjoy the most this year?

Entry 16: Outdoor Learning Activity: overnight camping trip
Appendix D

RESEARCH CONSENT FORM

“ALTERED BOOKS AS A FORM OF STUDENT REFLECTION ABOUT EXPERIENTIAL LEARNING”

October, 2014

Natasha Toth
Student, Masters of Educational Leadership Program
Vancouver Island University

Paige Fisher, Ph.D.
Supervisor, Masters of Educational Leadership Program

Principal-Coast Tsimshian Academy,

You may be aware that I have been attending Vancouver Island University during the summer months to learn more about teaching, learning and leadership. As a part of the requirements for my Masters of Educational Leadership I would like to conduct research into how my students feel about their learning during this school year (2014-2015).

This year I will be focusing on more experiential learning practices in the hopes that I will increase student engagement and allow my students to make better connections to what they learn in the classroom. Experiential learning means that lessons will take place in different environments such as the kitchen, the recreation centre or outside. There will be a focus on learning by doing, group work, community, a deeper connection with nature, and inquiry based learning. My hope is that experiential learning will allow students to feel interested and excited about their learning.

As part of our regular class activities, all students in my class will also be creating altered books (a mix of artistic and written journaling). The students will use the altered books as a way to show how they feel about the learning that takes place in the classroom and during our experiential learning activities.

With your permission, I would like to collect the altered books that the students create at the end of the year so that I can look closely at their reflections and images and learn more about how they felt as they thought about their learning experiences during the year, then write about what I have learned in my final thesis paper. The altered books would be returned to the students no later than September 2015.

There are no known harms associated with student participation in this research. The experiential learning and the creation of the altered books will be a part of the students’ regular schoolwork. I will also be keeping a researcher’s journal where I will document general observations about student behaviours and responses that pertain to my research.
My student’s privacy is very important to me. In any writing that I do about their altered books, I will replace names with codes so that there will be no use of the student’s name or personal information. I will be looking for general themes and insights that come from closely examining student reflections; not analyzing any particular student’s learning behaviors. The altered books will be kept in the classroom, as they will be part of regular school lessons. No extra activities are required for your child to participate. I am only asking for your permission for me to use their altered books in my study. All the information that I collect will be stored in a locked filing cabinet and on a password-protected laptop, then the altered books will be returned and any data that I have collected will be destroyed (shredded for paper copies or deleted from laptop) by February 2016. A copy of my final thesis will be made available if you would like a copy for your own records.

My students will be required to create an altered book as part of their regular school activities; however, parental consent to use their finished altered book for my research is completely voluntary. If parents decide to withdraw permission to use their child’s altered book in my study, any information I have taken from the book will not be used in my study and the altered book will simply be returned to the student. Parents may withdraw permission to use their child’s altered book at any time for any reason without explanation or penalty up until I begin my data analysis in July, 2014, at which time it will no longer be possible to distinguish what information each student has provided.

My supervisor, Paige Fisher, can be contacted if you have any concerns or questions and do not feel comfortable talking to me directly.

If you have any concerns about my student’s treatment as a research participant in this study, please contact the VIU Research Ethics Officer, by telephone at 250-753-3245 (ext, 2665) or by email at reb@viu.ca

If you have any questions about this research project, or would like more information, please feel free to contact me at any time at the phone number or email address provided below.

Natasha Toth

RESEARCH CONSENT FORM:

The principal of Coast Tsimshian Academy has read the above form, understands the information read, and understands he can ask questions at any time. The principal consents to allow this research study to be conducted.

_____________________________ (Print name)

_____________________________ ______________________________

_____________________________
Appendix E

RESEARCH CONSENT FORM

“ALTERED BOOKS AS A FORM OF STUDENT REFLECTION ABOUT EXPERIENTIAL LEARNING”

October, 2014

Natasha Toth
Student, Masters of Educational Leadership Program
Vancouver Island University

Paige Fisher, Ph.D.
Supervisor, Masters of Educational Leadership Program

Lax Kw’alaams Board of Education,

You may be aware that I have been attending Vancouver Island University during the summer months to learn more about teaching, learning and leadership. As a part of the requirements for my Masters of Educational Leadership I would like to conduct research into how my students feel about their learning during this school year (2014-2015).

This year I will be focusing on more experiential learning practices in the hopes that I will increase student engagement and allow my students to make better connections to what they learn in the classroom. Experiential learning means that lessons will take place in different environments such as the kitchen, the recreation centre or outside. There will be a focus on learning by doing, group work, community, a deeper connection with nature, and inquiry based learning. My hope is that experiential learning will allow students to feel interested and excited about their learning.

As part of our regular class activities, all students in my class will also be creating altered books (a mix of artistic and written journaling). The students will use the altered books as a way to show how they feel about the learning that takes place in the classroom and during our experiential learning activities.

With your permission, I would like to collect the altered books that the students create at the end of the year so that I can look closely at their reflections and images and learn more about how they felt as they thought about their learning experiences during the year, then write about what I have learned in my final thesis paper. The altered books would be returned to the students no later than September 2015.

There are no known harms associated with student participation in this research. The experiential learning and the creation of the altered books will be a part of the students’ regular schoolwork. I will also be keeping a researcher’s journal where I will document general observations about student behaviours and responses that pertain to my research.
My student’s privacy is very important to me. In any writing that I do about their altered books, I will replace names with codes so that there will be no use of the student’s name or personal information. I will be looking for general themes and insights that come from closely examining student reflections; not analyzing any particular student’s learning behaviors. The altered books will be kept in the classroom, as they will be part of regular school lessons. No extra activities are required for your child to participate. I am only asking for your permission for me to use their altered books in my study. All the information that I collect will be stored in a locked filing cabinet and on a password-protected laptop, then the altered books will be returned and any data that I have collected will be destroyed (shredded for paper copies or deleted from laptop) by February 2016. A copy of my final thesis will be made available if you would like a copy for your own records.

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My supervisor, Paige Fisher, can be contacted if you have any concerns or questions and do not feel comfortable talking to me directly.

If you have any concerns about my student’s treatment as a research participant in this study, please contact the VIU Research Ethics Officer, by telephone at 250-753-3245 (ext, 2665) or by email at reb@viu.ca

If you have any questions about this research project, or would like more information, please feel free to contact me at any time at the phone number or email address provided below.

Natasha Toth

RESEARCH CONSENT FORM:

The Lax Kw’alaams Board of Education has read the above form, understands the information read, and understands they can ask questions at any time. The Board consents to allow this research study to be conducted.

Reg Sampson (Print name)
Appendix F

RESEARCH CONSENT FORM

“ALTERED BOOKS AS A FORM OF STUDENT REFLECTION ABOUT EXPERIENTIAL LEARNING”

December, 2014

Natasha Toth
Student, Masters of Educational Leadership Program
Vancouver Island University

Paige Fisher, Ph.D.
Supervisor, Masters of Educational Leadership Program

Dear Parents/ Guardians;

This year I will be focusing on more experiential learning practices in the hopes that I will increase student engagement and allow my students to make better connections to what they learn in the classroom. Experiential learning means that lessons will take place in different environments such as the kitchen, the recreation centre or outside. There will be a focus on learning by doing, group work, community, a deeper connection with nature, and inquiry based learning. My hope is that experiential learning will allow students to feel interested and excited about their learning.

As part of our regular class activities, all students in my class will also create an altered books (a mix of artistic and written journaling). The students will use the altered books as a way to show how they feel about the learning that takes place in the classroom and during our experiential learning activities.

You may be aware that I have been attending Vancouver Island University during the summer months to learn more about teaching, learning and leadership. As a part of the requirements for my Masters of Educational Leadership I would like to conduct research into how my students feel about their learning during this school year (2014-2015). With your permission, I would like to collect the altered books that the students create at the end of the year so that I can look closely at their reflections and images and learn more about how they felt about their learning experiences during the year, then write about what I have learned in my final thesis paper. The altered books would be returned to the students no later than September 2015.

There are no known harms associated with your child’s participation in this research. The experiential learning and the creation of the altered books will be a part of the students’ regular
schoolwork. I will also be keeping a researcher’s journal where I will document general observations about student behaviours and responses that pertain to my research.

Your child’s privacy is very important to me. In any writing that I do about their altered books, I will replace names with codes so that there will be no use of your child’s name or personal information. I will be looking for general themes and insights that come from closely examining student reflections; not analyzing any particular student’s learning behaviors. The altered books will be kept in the classroom, as they will be part of regular school lessons. No extra activities are required for your child to participate. I am only asking for your permission for me to use their altered books in my study. All the information that I collect will be stored in a locked filing cabinet and on a password-protected laptop, then the altered books will be returned and any data that I have collected will be destroyed (shredded for paper copies or deleted from laptop) by February 2016. A copy of my final thesis will be made available if you would like a copy for your own records.

Your child will be required to create an altered book as part of their regular school activities; however, your consent to use their finished altered book for my research is completely voluntary. If you decide to withdraw permission to use your child’s altered book in my study, any information I have taken from the book will not be used in my study and the altered book will simply be returned to your child. You may withdraw permission to use your child’s altered book at any time for any reason without explanation or penalty up until I begin my data analysis in July, 2014, at which time it will no longer be possible to distinguish what information your child has provided.

My supervisor, Paige Fisher, can be contacted if you have any concerns or questions and do not feel comfortable talking to me directly.

Paige.fisher@viu.ca

If you have any concerns about your child’s treatment as a research participant in this study, please contact the VIU Research Ethics Officer, by telephone at 250-753-3245 (ext, 2665) or by email at reb@viu.ca

If you have any questions about this research project, or would like more information, please feel free to contact me at any time at the phone number or email address provided below.

Natasha Toth
RESEARCH CONSENT FORM:

Please indicate in the form below whether you will allow your child’s information to be included in my study.

_________________________________________________________________________________

Please remove this page and return this form in the sealed envelope provided to the school office and keep the rest of the letter for your own information.

If you DO NOT want to provide consent do not return the form.

I have read the above form, understand the information read, and understand that I can ask questions or withdraw at any time. I consent to my child’s participation in this research study.

_____________________________ (Child’s name)

_________________________________  _______________________________________
(Parent/ Guardian signature)  (Date)
## Appendix G

### Strengths, Skills, and Mindsets (found on [http://characterlab.org](http://characterlab.org))

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Curiosity</strong></td>
<td>Curiosity is a strong desire to learn or know something—a search for information for its own sake.</td>
</tr>
<tr>
<td></td>
<td>- Eagerly exploring new things</td>
</tr>
<tr>
<td></td>
<td>- Asking questions that deepen understanding</td>
</tr>
<tr>
<td></td>
<td>- Taking an active interest in learning</td>
</tr>
<tr>
<td><strong>Gratitude</strong></td>
<td>Gratitude is the appreciation for the benefits we receive from others, and the desire to reciprocate.</td>
</tr>
<tr>
<td></td>
<td>- Recognizing what other people do for you</td>
</tr>
<tr>
<td></td>
<td>- Showing appreciation for opportunities</td>
</tr>
<tr>
<td></td>
<td>- Expressing appreciation by saying thank you or doing nice things for people</td>
</tr>
<tr>
<td><strong>Grit</strong></td>
<td>Grit is perseverance and passion for long-term goals.</td>
</tr>
<tr>
<td></td>
<td>- Finishing what you begin</td>
</tr>
<tr>
<td></td>
<td>- Staying committed to your goals</td>
</tr>
<tr>
<td></td>
<td>- Working hard even after experiencing failure or when you feel like quitting</td>
</tr>
<tr>
<td></td>
<td>- Sticking with a project or activity for more than a few weeks</td>
</tr>
<tr>
<td><strong>Growth Mindset</strong></td>
<td>Having a growth mindset means understanding that intelligence can be developed.</td>
</tr>
<tr>
<td></td>
<td>- Taking on new challenges with optimism</td>
</tr>
<tr>
<td></td>
<td>- Being able to talk about what you learned</td>
</tr>
<tr>
<td><strong>Optimism</strong></td>
<td>Optimism is being hopeful about future outcomes combined with the agency to shape that future.</td>
</tr>
<tr>
<td></td>
<td>- Believing that effort will improve your future</td>
</tr>
<tr>
<td></td>
<td>- When bad things happen, thinking about what you could do to avoid similar bad outcomes in the future</td>
</tr>
<tr>
<td></td>
<td>- Staying motivated, even when things don’t go well</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>Having a purpose means being driven by something larger than yourself.</td>
</tr>
<tr>
<td></td>
<td>- Being oriented toward a stated future goal</td>
</tr>
<tr>
<td></td>
<td>- Being able to articulate an interest and the “why” behind the interest</td>
</tr>
<tr>
<td><strong>Self-control</strong></td>
<td>Self-control is controlling one's own responses so they align with short- and long-term goals.</td>
</tr>
<tr>
<td></td>
<td>At work or school, demonstrating self-control could involve:</td>
</tr>
<tr>
<td></td>
<td>- Coming to the office or class with everything needed to get to work rather than being unprepared</td>
</tr>
<tr>
<td></td>
<td>- Remembering and following directions rather than needing to be reminded</td>
</tr>
<tr>
<td></td>
<td>- Getting to work right away rather than procrastinating</td>
</tr>
<tr>
<td></td>
<td>- Paying attention rather than getting distracted</td>
</tr>
</tbody>
</table>
Interpersonally, demonstrating self-control could involve:

- Remaining calm, even when criticized or otherwise provoked, rather than losing your temper
- Allowing others to speak rather than interrupting
- Being polite to all, even when stressed or angry

| Social/ Emotional intelligence | \begin{itemize}
  
  
  \item Finding solutions during conflicts with others
  \item Demonstrating respect for the feelings of others
  \item Adapting to different social situations
\end{itemize} |

<table>
<thead>
<tr>
<th>Zest</th>
<th>Zest—also referred to as vitality—is an approach to life that is filled with excitement and energy.</th>
</tr>
</thead>
</table>
|      | \begin{itemize}
  
  \item Actively participating by asking questions or listening closely
  \item Showing enthusiasm through smiles or excited comments
  \item Approaching new situations with excitement and energy
  \item Invigorating others around you
\end{itemize} |
### Appendix H

#### Coded Positive Themes from Participants’ Altered Book Entries

<table>
<thead>
<tr>
<th>Example Student Responses</th>
<th>Tally</th>
<th>Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I liked going outside to learn because it was real.”</td>
<td></td>
<td>Learning Outside</td>
</tr>
<tr>
<td>“Learning outside is better than inside because we didn’t do any worksheets all day.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I like learning outside because we got to touch new things and explore new things.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I like to learn outside because I don’t like reading from books.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I liked the magnetic fluid experiment because we made something instead of answering questions.”</td>
<td></td>
<td>Hands-on learning</td>
</tr>
<tr>
<td>“I like learning about hands on projects because I learn more.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“It was different because I was building something with my hands.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I like (swimming) better than regular classes because we get to play games.”</td>
<td></td>
<td>Movement</td>
</tr>
<tr>
<td>“This is better than doing worksheets because I didn’t have to sit still in my chair.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“These sorts of classes would be awesome because we could learn new things.”</td>
<td></td>
<td>New ideas</td>
</tr>
<tr>
<td>“We never made these before that made it different.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I like hanging around with others and learning through play.”</td>
<td></td>
<td>Teamwork</td>
</tr>
<tr>
<td>“I liked this science experiment because we were put in groups and each took turns doing things.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I like going to work with my dad. We go fishing for salmon, halibut, crabs, and shrimp. It’s fun.”</td>
<td></td>
<td>Family</td>
</tr>
<tr>
<td>“I like band because we will play during Seafest in the mall. My parents and grandparents will be there watching me.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I liked it better than regular lessons because we got to talk and move around.”</td>
<td></td>
<td>Socialization</td>
</tr>
<tr>
<td>“It was better because we got to be noisy and loud.”</td>
<td></td>
<td></td>
</tr>
<tr>
<td>“I liked the museum programs because we could drum and dance.”</td>
<td></td>
<td>Culture</td>
</tr>
<tr>
<td>“I like to learn about the environment and my culture.”</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Appendix I

### Level of Participant Metacognition Based on Thorpe’s (2012) Model of Reflection

<table>
<thead>
<tr>
<th>Participant</th>
<th>Metacognition Level of Reflection</th>
<th>Examples of Student Comments</th>
</tr>
</thead>
</table>
| Participant 1 | Non-reflector/ Beginning level reflection | “I wish we would not line up so we can do our own limbo.”  
“My goal for next time is to look for more things when I am outside”  
“I think that I learn better when I build things with my hands” |
| Participant 2 | Non-reflector/ Beginning level reflection | “My goal is to look just at what I am supposed to and not get distracted.”  
“What made this activity different is that we had never done it before.”  
“Learning outside is different because I can’t walk around in the classroom.” |
| Participant 3 | Non-reflector/ Beginning level reflection | “It’s fun to learn about science.”  
“My goal for next time is too listen to my teacher and look for different kinds of animals.”  
“I liked making the bath bombs because they smelled nice.” |
| Participant 4 | Between Non-reflector & Reflector/ Evidence of deeper connections | “Learning outside is better than in the class because we get to move around all the time.”  
“The museum programs were a better way to learn about the past because I liked listening to the stories.”  
“I liked making bath bombs because I got to have my hands in stuff and talk to my friends.” |
| Participant 5 | Reflector/ Evidence of deeper connections | “My goal for next time is to touch more things and even try the taste of some things we find outside.”  
“I think that going to the museum is a better way to learn about the past because I didn’t have to read a book.”  
“I liked the shapes game because we usually do lessons and worksheets but this time we didn’t and we did actual fun things for math.” |
| Participant 6 | Reflector/ Evidence of deeper connections | “My goal for next time is to look around more and to use my hands to pick up things and look at them more closely.”  
“I like playing Sumdog (math website) because it makes me better at math. We can play different games and I can verse people.”  
“I liked learning outside because it was real. I got to see trees and crabs and flowers.” |
| Participant 7 | Reflector/ Evidence of deeper connections | “I liked it better than normal lessons because I got to be myself”  
“These kinds of classes would make me feel really happy because we get to learn new stuff.”  
“I like to learn outside because I don’t like reading from books.” |
| Participant 8 | Reflector/ Evidence of deeper connections | “Meditation makes me feel happy because it helps me to breathe.”  
“I liked the shapes game better than Reading Mastery because in Reading Mastery you just sit there and answer questions.”  
“The learning activities I enjoyed the most were in science because I like hands-on activities.” |
| Participant 9 | Reflector/ Evidence of deeper connections | “My goal for next time is to bring my Ipad to take photos of things that I look at or to write about them in my journal.”  
“We could march around outside instead of sitting around to make band better.”  
“The museum programs were a better way to learn about the past because we got to build things with our hands.” |
| Participant 10 | Reflector/ Evidence of deeper connections | “My goal for next time is to listen to the teacher and my friends better so I don’t miss out on anything.”  
“I like those drill sheets because I like numbers better than words.”  
“Meditation makes me feel good because it helps me to calm down.” |
Extra Examples of Participants’ Altered Book Pages

Student altered book reflection about their favorite teaching event of the week when they made silly putty/flubber from scratch for a science unit on matter.

Transcription: I liked the silly putty because I got to put glue and food coloring in it. We put Borax. We put our hands on it. We got really dirty and got paint on the morning rug. I got to squeeze the bag all the time. We had the activity was so fun. We learned this in science. We are learning about matter. I like that we got to play with stuff that we made ourselves.
Student altered book reflection on what types of classes they would like to have available once the new school was finished and in use.

1. The learning activity I enjoyed doing the most this week was the shapes game.
2. We did the shapes game in math. We learned about quadrilaterals and that they have 4 sides.
3. I liked the shapes game because it was fun to work in teams.
4. I liked the shapes game compared to our other lessons because we got to run around and compete against other teams.
Student altered book reflection about a math game where they worked in groups and competed against another team to review geometric shapes.

Student altered book reflection about class overnight camping and hiking trip they went on at the beginning of June. The student reflects about the activities they liked best and what they learned from attending the field trip. The student included original text drawing in their reflection design because these animals are found where they live.

Transcription: We went camping for a school trip. We went for a hike up a mountain, we set up tents, we fixed the inside of our tents, we played poison tag, swimming in the lake, kayaking, and on a raft. I wish the next morning we could have been back in the lake. I liked learning outside because it was fun and had no homework. I learned how to wear a lifejacket, keep somewhere safe so bears won’t come and how to kayak.
Student altered book entry where they reflect about what they like best about band class and what activities they could have in band that would make band even more interesting.

Transcription: I don’t like band because I get head aches from the loud music. I play tenor saxophone and we learn about Micky Mouse March and we have to play it until the end. I don’t like starting from the 15 song. I don’t like band is the best because we play random songs. I would like to learn about the guitar in band.
Student altered book entry on making bath bombs for Mother’s Day gifts, which was this student’s favorite activity of the week.

Transcription: The learning activity I enjoyed the most this week was making bath bombs. We learned how to make bath bombs for Mother’s Day. I liked the bath bombs because they were fun to make. What made this activity different is that we had never made them before.
Student altered book entry on band class. This is another example where the student chose to incorporate part of the existing text (the Raggedy Ann drawing) into their design. This student chose this text for their altered book because they loved all the original drawings and wanted to use them in their page design.

Transcription: I feel happy about band. My instrument is a clarinet. We learn about band is playing the instruments. I dislike standing with our instruments. To make band better I would like to do more dances and the limbo.