

**Education 6390
Faculty of Education
Memorial University of Newfoundland,
St. John's,
Newfoundland and Labrador**

**Incorporating Inquiry-Based Learning into Secondary Social Studies Courses within a
Standardized System of Education**

Submitted to: Dr. B. Barrell

**In partial fulfillment of the requirements of Education 6390
for the degree of Master of Education**

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July, 2016**

Abstract

Inquiry-Based Learning (IBL) has been gaining ground as a viable approach to teaching in recent years. There is concern, however, that IBL does not fit well within the current model of standards driven education that is focused on statistics and standardized exam results to reflect teacher and student success. A review of the literature has shown that IBL is beneficial to students in terms of academic achievement, critical thinking and creativity, social learning, collaboration, and competency with new technology. This paper discusses factors that contribute to successful IBL implementation in secondary school social studies classrooms, in light of the current predominance of standardization, including the nature and goals of IBL, the changing roles of teacher and student within this educational model, and evidence pointing towards successful implementation by teachers and researchers in the field. This paper argues that IBL should be implemented into more standardized systems of education, but that this be done gradually as students and teachers gain greater comfort with and understanding of the inquiry process. Successful implementation strategies include greater use of formative assessments, reflective activities for teachers and students, modelling and scaffolding of the inquiry process, use of technology to aid student investigations, and teacher design and revision of IBL modules.

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Introduction

The Newfoundland and Labrador Department of Education and the Newfoundland and Labrador English School District, as administrators of a public education system, seek to create an educational community that values, safe, caring and inclusive learning experiences for all students in the province (Newfoundland and Labrador Department of Education, 2016a). The province, as of the 2014-2015 school year, has an enrolment of 66,800 students in 262 public schools (Newfoundland and Labrador Department of Education, 2016b), providing little doubt that administering such a system has its challenges. In order to facilitate the management of large numbers of students, schools, and teachers a strong degree of standardization is present, which serves to ensure that all students are taught the same standard curricula in similar ways, thereby making the experience of education more consistent from school to school (Davis, Sumara, & Luce-Kapler, 2015, 1.3). An important part of any effective education system involves continual improvement to both student achievement and teacher instruction, and the assumption that both of these phenomena can be measured with some degree of accuracy has led to the many hallmarks (e.g., rows of desks, lectures, pen and paper exams, course outcomes) we associate with standardized education today (Davis et al., 2015, 1.1).

In considerable contrast to established standards, Inquiry-Based Learning (IBL) has grown as an approach to teaching across curricula in recent decades. Its incorporation into the public school system has been a goal of the province's Department of Education, as seen through recent revisions made to curriculum guides for courses in the social studies (Newfoundland and Labrador Department of Education, 2011 & 2012). In light of these developments, it is important for teachers to have a deep understanding of IBL, the benefits that exist for students in the classroom, and its practical application.

Inquiry-Based Learning, at its most fundamental level, is about problem solving and exploration. According to Watt and Coyler (2014),

Learning through inquiry is both a teaching method and a skill for students that harnesses natural curiosity and wonder.... It is based on the notion that there are effective processes that can be used to solve problems, create new knowledge, resolve doubts, and find the truth. (p. 2)

IBL challenges students to discover content, understand context, develop research skills, and engage with higher levels of thinking. This is possible because, "...IBL is characterized by authentic learning experiences structured around powerful driving questions" (Dobson, 2012, p. 20). At the same time, the teacher becomes less a lecturer and more a facilitator, helping to guide students in their problem-solving tasks, conducted through formation of meaningful research questions, investigation of new information, interpretation and use of this information, and ultimately the making of value judgments arising from a deeper understanding of the topic being studied. The processes of IBL, by their nature, also encourage critical thinking and creativity among students.

Though IBL has seen growing support, there are concerns raised about its incorporation into already established models of education. A standardized system of education seeks to keep learning experiences consistent from student to student and school to school, which may be seen as contradictory to the goals of inquiry-based methods of learning. The traditional measures used to determine student achievement and teacher effectiveness are often different than those encouraged by IBL. With such concerns in mind, this paper seeks to answer the following research question: to what extent can Inquiry-Based Learning be incorporated effectively into secondary social studies classrooms within a predominantly standardized system of education? To provide context for this, the paper will outline the characteristics of both standardized and inquiry-based approaches to learning, while considering the roles of both teacher and student

within these models. There will be a discussion of the benefits of IBL and factors to be considered by teachers wishing to increase the amount of student inquiry in their classes. It is argued that IBL can be effectively implemented by teachers through gradual introduction of guided or blended inquiry methods and the use of teaching strategies that model and promote collaboration and reflection in students.

Operational Definitions

To provide clarity and remove ambiguity surrounding the topic of this paper, it is important to define recurring terms that are central to the argument being developed.

Standardized education

Oxford Dictionaries defines *standard* as “a level of quality or attainment” or “something used as a measure, norm, or model in comparative evaluations.” When applied to teaching and learning, standardized education is characterized by a traditional approach to teaching and learning. It is often associated with,

...standardized examinations, standardized (“common” or “core”) curricula, standardized lesson plans, and standardized classroom formats. More subtly, the idea shows up in standards of student behaviour, professional standards for teachers, and the many, many, documents bearing the word *Standards* put out by teachers’ organizations, ministries of education, and groups of concerned citizens. (Davis et al., 2015, 1.1)

An important aspect of standardized education is how learning is assumed to occur, which most often is linked with acquisition of knowledge through memorization and assessment of this memorization through summative evaluations (Harmon, Simms, Luttrell, & Sayler, 2006).

Standardized education, then, concerns itself with the transmission of information (usually by means of lecture) to large numbers of students and measuring the success of this transmission

and retention of information by means of traditional assessment tools (i.e., pen and paper tests and exams or worksheets). Due to teaching and learning methods being standard between groups, this kind of education will likely result in a narrowing of potential learning outcomes.

Inquiry-Based Learning

Inquiry-Based Learning was first implemented in the 1960s as a response to traditional forms of learning. It began in the sciences with "...an inquiry focus in the belief that inquiry-based learning would lead to better learning and a competitive edge for students" (Watt & Colyer, 2014, p. 4). Its roots can be seen in the works of John Dewey, Lev Vygotsky, Paulo Freire, and Howard Gardner and grew out of the progressive and constructivist movements in education; the former emphasizing that learning is the result of social interaction and should be "child-centred", while the latter believing that learning and one's world view become more complex as new experiences and discoveries are made in rich and active learning environments where students construct their own knowledge. IBL seeks "authentic learning experiences structured around powerful driving questions" (Harmon et al., 2006, p. 5) and is based on the assumption that students are engaged to learn about new things by mystery. If students are permitted to discover new knowledge for themselves and formulate their own driving questions in doing so, then it can be expected that two students or groups of students will likely make somewhat different discoveries during the inquiry process, resulting in an expanding of learning outcomes.

Characteristics of Standardized Education

In order to set a context for discussion of IBL implementation, it is first necessary to consider the characteristics of standardized education, which differs in many ways from IBL. To understand the focus of standardization in high school social studies, one need go no further than the curriculum present in Newfoundland and Labrador. The World Geography 3200/3202 curriculum guide (Newfoundland and Labrador Department of Education, 2004) illustrates a preference for knowledge and content based outcomes that include recall of definitions and information that, when assessed on province-wide public examinations, often test students' ability to memorize content rather than use higher level skills and competencies. This can be seen through the presence of outcomes that stress students being able to define key words and differentiate between geographic concepts. For example:

SCO 1.2: The student will be expected to demonstrate an understanding of how the process of weathering helps wear down the land, including the following delineations:

1.2.1 Distinguish between the terms physical weathering and chemical weathering. (k)

1.2.2 Describe the mechanical processes by which physical weathering occurs. (k)

1.2.3 Describe the main interactions that result in chemical weathering. (k)

1.2.4 Infer the relationship between environmental conditions and the rate of physical and chemical weathering. (a). (p. 137)

While there is some effort to address the increasing importance of analytical learning through inferring relationships, as here, and varying teaching strategies elsewhere, there is little room for sustained investigation and student discovery of content. In other words, the teacher attempts to help students learn predominantly factual information that is easily assessable through means of a standardized exam to come at the end of the school year, resulting in the teacher being the active agent and the students being passive: hallmarks of standardization.

Standardized education has a long history leading to its establishment as the dominant framework for schools, to the point where today it has become closely associated with formal

education (Davis et al., 2015, 1.1). The origins of standardization can be seen in the first medieval universities and later church schools. The terminology associated with medieval universities and teaching includes such metaphors as teaching as *lecturing* and *professing*, both words relating closely to the idea that the teacher is a subject expert who must tell what they know to students. In the context of church-based schools in the late and post medieval periods, this one way movement of information expanded to include *enlightening*, and moral *edifying*. At the same time, discipline became important in education in terms of promoting self-control, but this also manifested in the sense of punishment for poor behaviour. Davis et al. (2015) notes that “...these metaphors are very different from those borrowed from the medieval university, which were principally concerns with oral communication. These ones are more about directing behaviour and ordering thought” (1.3).

With the Enlightenment period, teaching would become seen as a set of skills associated with instructing, skills that could be taught to teachers to make the experience of education more consistent from school to school. There was a movement towards generating a greater level of conformity through control (Davis et al., 2015, 1.3). For centuries, the teacher had been seen as the source of knowledge, while the student has been viewed as an empty container to be filled with knowledge and skills through the teacher’s process of instruction. During the Enlightenment, this belief persisted with the added assumption that if teachers taught the same content in the same ways, then the result would be that all students would achieve a consistent level of learning.

In the 1800s, the first *normal schools* were developed. These were institutions that served as the first formal teacher training centres. “With the official expectation that every child’s educational experience should be uniform/level/even/planned, it fitted to the ideals of the era, such

as order, linear cause-and-effect, efficiency, predictability, uniformity, and precision” (Davis et al., 2015, 1.3). Borrowing from the Industrial Revolution’s focus on specialization, these schools trained teachers to specialize in the most effective contemporary methods of teaching and this would translate into standardizing teacher education and the work teachers would do in the classroom.

Today, many teacher education programs promote the standardized structures that exist in education and often focus on traditional measures of efficiency, such as test construction (D’Souza, 2012). New teachers entering the profession have likely been students in a school where highly standardized methods have been used, and as new or aspiring teachers they come with certain basic ideas of what they feel teaching and learning should look like, an issue that has arisen in recent attempts to implement IBL in social studies classrooms (Beshears, 2013). These preconceptions favour reproduction of standardized methods with little emphasis on student inquiry. According to Davis et al. (2015), there are a number of elements that characterize standardized education as we know it today:

Teacher discipline mastery

Traditionally, advanced study in a subject area was seen as a requirement for teaching and today may be equated with requisite post-secondary degrees or courses. Content mastery is important in teaching, but has come to be considered in terms of *knowledge of a discipline* and *knowledge of how a discipline is learned*. Both can inform teacher practice.

Lesson planning

Central aspects of lesson planning in standardized education include clearly stated learning objectives, direct instruction to deliver information, practice and drill exercises to

promote and enforce skill development, and evaluation to determine teaching and learning success as judged by stated learning objectives. Common standardized teaching methods still regularly used in history classes today include "...class discussions, lectures, and periodic tests and quizzes" (Harmon et al., 2006, p 4). The assumption made is that the outcomes of teaching and the effectiveness of the teacher in doing so are both measurable and can be optimized, which shows a continual modification of the specialization aspect of teacher training discussed earlier in this section.

Classroom management

Standardized classroom structures and procedures involve overseeing and surveillance of student activities and is often facilitated by a regular, rowed seating plan. Operant conditioning is commonly used to maintain behavioural expectations, which involves the rewarding of desired behaviour and the punishing of undesired behaviour. Classroom management reinforces the command and control role of the teacher, with the assumption that the more control the teacher exercises the more consistent student behaviour will be, in turn resulting in a greater possibility of predicting successful learning outcomes.

Evaluation

Evaluation is the connection between student achievement and teacher accountability and functions as a kind of quality control. Among evaluation methods, norms-based grading compares students to one another and assumes student ability is normally distributed (as it might be along a bell-curve). Standards-based grading uses rubrics to assess student performance against an acceptable standard, and not against other classmates. Both types of evaluations tend to focus on traditional assessment methods like pen and paper tests or quizzes.

The characteristics of standardized education are familiar to many, due to its prevalence in many jurisdictions. The focus on specific factual content and summative assessments are intended to make student learning in specific social studies areas (i.e.: geography, history, civics and economics) consistent from class to class and school to school, using teaching and assessment strategies that facilitate achievement of this goal. This leaves little room for student creativity and generation of information, resulting in a narrowing of learning outcomes (Davis et al., 2015). As will be seen in the following sections, education based on student investigation and inquiry often deviates from this standard, allowing greater levels of creativity and critical analysis on the part of students as they conduct their own learning discoveries with teacher guidance.

Characteristics of Inquiry-Based Learning

As has been seen, standardized education takes a focus on transmission of content from teacher to student and makes use of traditional methods of assessment to determine the relative successes of each party judged against a predetermined level or standard. In these traditional learning environments, the teacher primarily plays the role of scholar, while students are passive recipients of knowledge (Gonzalez, 2013). Inquiry-Based Learning is a very different approach to education as it is both a method of teaching and a series of skills intended for the use of students during the process of formal education. As Watt and Colyer (2014) suggest, it is based on the use of skills and processes that help solve problems and create new knowledge. These processes, like specific subject knowledge, do not come naturally to children, but can be explicated taught. Children are, however, naturally curious in the face of new situations and are motivated to learn and unshroud the mysteries they encounter, but this tendency often fades with

time, leaving many children passive in the process of experiencing their world. IBL proponents argue that this educational philosophy can help children rediscover a passion and motivation for learning (Watt & Colyer, 2014; Harmon et al., 2006), but it has also been viewed as "...an opportunity to reach teens whose engagements in the traditional classroom bottoms out at the ninth grade" (Dobson, 2012, p. 20). A lack of interest and motivation in school are challenges common to teachers of any subject area.

In the recently revised Newfoundland and Labrador Social Studies curriculum, inquiry has taken a central role in course delivery. According to the course curriculum guide for Canadian Geography 1202 (Newfoundland and Labrador Department of Education, 2012):

Educational research suggests that students learn best when they actively and critically inquire into the subject matter. Teachers can engage students in learning about social studies by involving them in shaping questions to guide their study, giving them ownership over the directions of these investigations and requiring that students critically analyze subject matter and not merely retrieve information. In these ways, classrooms shift from places where teachers cover curriculum to places where students uncover the curriculum.

The uncovering of curriculum occurs only when students investigate questions that present meaningful problems or challenges to address. 'Critical' inquiry signals that inquiry is not merely the retrieval of information but requires reaching conclusions, making decisions, and solving problems. Although some students may enjoy gathering information, students' depth of learning and engagement are enhanced when they are invited to think critically at each step of the investigation. (p. 12)

This presents a very different view of teaching and learning than is commonly expected in standardized education. The emphasis on questioning rather than accepting information at face value, and student investigation of subject area content is markedly unstandardized in that, depending on the task provided, students may discover very different information or pursue different aspects of an issue or problem. This is just the point, as Harmon et al. (2006) suggests in discussing IBL in history curricula: the inquiry model places importance on enduring generalizations, prioritizing meaning over memory, and that students must work together to give

meaning to their understanding of the subject. What's more, IBL is also based in the belief that "...memory is facilitated if a structure is learned.... Once the structure is learned, facts and details can be remembered more easily or reconstructed if necessary" (Harmon et al., 2006, p. 18). In this sense, the rote memorization of many facts need not be a primary focus of instruction as students often must make use of factual information during the process of successfully conducting various aspects of an inquiry.

Watt and Colyer (2014) outline the key characteristics of IBL that exist regardless of subject area being studied. All IBL makes use of a question or problem that is posed by either the teacher or students which is relevant to those involved in the class and to the discipline studied. The problem presented provokes the natural wonder and speculation of students, which fuels learning. The teacher models, scaffolds, and supports the stages of inquiry through ongoing assessment during student activities. As students gain more skill, knowledge, and competency, the teacher gradually releases responsibility for modeling and students gain greater independence. In order for inquiry to be meaningful and rich, knowledge of major concepts and ideas in the discipline of study is necessary, meaning that foundational knowledge is important for higher order tasks to take place. Attitudes and dispositions must allow all people involved to be curious, empathetic, skeptical, collaborative, and open to taking risks. In order for IBL to be effective as a learning tool, students must have critical thinking, collaborative, problem-solving, metacognitive, and communications skills, which can be learned and are practicable.

As can be seen, IBL involves much more than remembering information passed to students through direct instruction. Its success relies much more on students' use of information for a purpose that is engaging and relevant to them. Though the process of conducting an inquiry is vitally important, a final product or artifact is also a crucial element: "This should be seen as

something worth doing, a product that students and parents are proud of and, ideally, something the broader community views as an example of excellence or innovation” (Dobson, 2012, p.21). This product can be in a traditional form, such as an essay, or it can be in a much more diverse form, such as a poster, presentation, song, sculpture, or video.

Role of the Teacher

In an inquiry-based learning environment, the teacher becomes a “guide on the side” rather than a “sage on the stage” (Gonzalez, 2013, p. 34). The standardized assumption that content being presented to the student, either through lecture or readings, guarantees learning does not apply in IBL. The teacher’s primary role is that of a facilitator as the student conducts the inquiry, providing them with the tools they need to develop their own understandings. As mentioned earlier, there is the concern that content and course objectives may not be covered if students are left to construct their own knowledge (a preoccupation within standardized systems of education), but inquiries can be constructed that help students discover the required content and engage with it further.

The teacher, then, is not only in charge of guiding students through the inquiry process, but the design of the task and investigation itself. One of the most time-consuming and difficult tasks for teachers in the creation of IBL learning experiences is the development of effective driving questions, which “ensure that students encounter and struggle with complex concepts and principles based on content needs” (Beshears, 2013, p. 20). Dobson (2012) stresses that, “if students can ‘Google’ the answer, it is not a good question. A powerful driving question often addresses multiple curriculum outcomes across traditional subject boundaries” (p. 20). This process is illustrated in learning outcomes from Newfoundland and Labrador’s Canadian

Geography 1202 curriculum guide where, instead of merely asking students to sketch and label diagrams showing interactions between human systems such as economy, energy, and communication, a driving question is posed: “Is one human system more important than another? Why?” (Newfoundland and Labrador Department of Education, 2012, p. 42). Such a question can be used to stimulate student interest and wonder, while requiring students to find and use information, make comparisons, consider perspective, determine significance, and ultimately make a judgement based on their own values. McTighe and Brown (2005) highlight the importance of planning essential questions that seek to explore the big ideas of any discipline and should remain a constant preoccupation of the teacher to the same degree as the learning standards themselves. A well-chosen question can provide structure for using higher-order thinking skills and help students on their way to deep and meaningful learning. Harmon et al. (2006) state that “[i]nquiry-minded teachers design lessons that involve students in hands-on learning and cooperative response groups in which students have the responsibility for making decisions and reaching interpretations” (p. 4). There is an organizational role involved for the teacher as well, one in which information is organized around conceptual problems, enduring dilemmas, and discrepant situations with the goal of peaking students’ interest.

According to Watt and Colyer (2014), there are three primary types of inquiry that are characterized by varying levels of teacher guidance. Each of these can play a role in classroom implementation of IBL:

Open inquiry

In this type of inquiry, students design and conduct investigations independently after having already chosen their own driving questions. For this to be successful, a high level of

competency in inquiry skills is required, which teachers will have already helped students develop through modelling. Open inquiry involves the least amount of direct teacher instruction, but still requires teacher reflection, supervision, and assessment of student progress.

Guided inquiry

This is an inquiry where the teacher assists students throughout the process, "...by selecting the question, providing specific frameworks and resources in investigation, and modelling the critical analysis required of the accrued research" (p. 11). The teacher also selects beforehand the way students will demonstrate their learning, either through written work, oral presentations, multimedia products, etc. Due to the heavy teacher presence in guided inquiry, this is the best method for teachers and students who are new to IBL.

Blended inquiry

Blended inquiry is a middle ground between the open and guided methods, in which both co-exist. The teacher decides when and where to give students more autonomy and where explicit teaching of inquiry skills is required. "Blended inquiry is the form of inquiry most often attempted in classrooms since it allows for balance and flexibility in teacher and student direction" (p. 11). This is useful when students have varying levels of inquiry experience, or are still developing their understanding of the inquiry process.

Though traditional lecturing by the teacher is not a dominant part of IBL, it is important to realize that it can and should still occur at key points in the inquiry process, depending on the type of inquiry being conducted. Joseph Gonzalez, a teacher of undergraduate history at

Appalachian State University, underscores this point in his own experiences introducing students to investigation in the classroom:

I still lecture, but I do so at carefully chosen times: At the beginning of class, for example, I introduce the day's activities; in the middle I clarify points and reinforce connections the students have made; at the end of class, I bring closure, drawing relationship between what we have done and what we will do. (Gonzalez, 2013, p. 37)

It is interesting to note the importance placed on student development of historic content or “points” and how relationships should be drawn between these during different parts of an inquiry. In some cases, students may be able to make these connections, but when this is not possible, the teacher does so. This means that the teacher cannot be an individual who steps back and assumes students will draw desired conclusions on their own, rather the teacher must be ever observant, interacting as is necessary to ensure students get the most of investigative activities.

Gonzalez (2013) also points to scaffolding as a vital part of what the teacher does during IBL. This means the teacher will, “...divide the scholarly processes into a series of discrete, but interrelated steps” (p. 38), which include formulation of questions, gathering knowledge, constructing arguments based on evidence, and eventually presenting these to others. Scaffolding helps students gain a better appreciation for what they are doing with a learning task and builds upon similar inquiry processes they have already used. An example of this in a high school geography class could include research and exploration of Canada's immigration policy for the purpose of determining solutions to economic and social issues caused by Canada's contracting population. The problem is posed and students develop questions to facilitate research of relevant information. They then must then build on this learning by considering the perspectives of groups within Canada and how they are affected by economic and social changes as a result of population trends. Finally, they connect their understanding of multiple topics within social studies (i.e., economics, demography, civics) in order to propose preferred courses of action to

address identified problems. By means of scaffolding and the inquiry process, teachers can help move students toward greater levels of competence, cognitive sophistication, and independence.

Role of the Student

It may be gathered from the previous section that students play much more than a passive role in their learning in IBL, becoming in essence the members of the classroom who drive the process. Favier and Van der Schee (2012), in discussing inquiry in geography classrooms, summarizes the nature of knowledge and the student's role in discovering it:

Students should be active learners, and teachers should be coaches rather than instructors. Knowledge is not seen as a flexible commodity that can be delivered from teachers to students. Instead, the central idea is that learning processes are most effective when students actively make sense of the subject matter themselves. (p. 667)

This presents the student as an academic, one who does the work of research and investigation themselves. There is, then, a focus on the development of higher levels of thinking and the encouragement of discovery and open-endedness. "When children behave as scholars they will use, rather than simply acquire, information. Information learned will be applied in practical situations and be used to form new products or reach more mature decisions" (Harmon et al., 2006, p. 18). Information itself can then be transformed through social interaction and real-life application into deep understanding.

In traditional classrooms, the role of the teacher is closely connected with control of the classroom and creating conformity among students (Davis et al., 2015, 1.3), but Dobson (2012) highlights a challenge for those new to IBL: "The teacher must be willing to give up the spotlight in the classroom, to step back and let the students take responsibility for their own learning. This is as much a challenge for students as it is for teachers" (p. 20). The teacher must become comfortable with not taking centre stage, as one might as a lecturer in traditional classes, and be

able to give control of the classroom over to students as they work through their own inquiries. This may be the opposite classroom structure from what many students are used to, having been raised and educated in standardized systems, a factor that also contributes to social studies teachers' unfamiliarity with IBL (Beshears, 2013). However, teacher control does not have to be completely relinquished, especially if guided or blended inquiry is used, which may make the transition easier for the teacher and more comfortable for students as budding scholars.

These ideas of student independence interwoven with social interaction and development of higher level thinking skills are based on some of the foundational work of educational philosophers, in particular John Dewey and Paulo Freire. Watt and Colyer (2014) highlight the contribution of Dewey to the role of students in the IBL classroom:

The student is actively involved and the teacher is a skilled facilitator and guide.... Dewey imagined the classroom as an interdependent community. Involvement in this community allows students to critically question truths through dialogue grounded in intellectual rigour. (p. 5)

Freire, argued against the passive state that many students experience as they sit for hours at their desks listening to the lectures of their instructors. He said this kind of traditional learning should be replaced by "...a 'critical pedagogy' of education as a political act that would transform the person and the world" (Watt & Colyer, 2014, p. 5). IBL relies on the social interaction of children as they learn cooperatively. They become independently competent in making use of inquiry skills, but by working together increase the motivation and engagement levels they achieve, while expanding the potential learning outcomes that result from their collaborative investigations. Building on Freire, through social interactions that allow students to work together and see value in all members of a group, there is an element of Social Justice Education that takes place (Welton, La Londe & Moyer (2015): "[Y]outh learn tools for agency and transformation that will eventually benefit us all because they are the future adults who will have

the critical leadership skills and capacity to address society's gravest concerns" (p. 550). While this is not a primary goal of IBL, student cooperative engagement with each other and their similarities and differences during the inquiry process, can contribute to greater understanding between those involved when it comes to social responsibility.

Benefits of Inquiry-Based Learning

In order to determine whether Inquiry-Based Learning should be incorporated into standardized classrooms to a greater degree, it is first useful to consider the benefits of attempting to do so. Beshears (2013) notes that research supporting the statistical success of inquiry methods in the social studies is in short supply, as there has not been a significant amount of work done in this area compared to what has been done in mathematics and the sciences. However, Harmon et al. (2006), researching IBL used in American history classes in Texas schools and student achievement on standardized tests, has indicated that grade 8 students who had been taught an IBL unit outperformed a control group taught the same content with traditional methods. Grade 11 students in the same study, however, showed similar results to the control group. Clearly, more research to quantify achievement in social studies is necessary.

Watt and Colyer (2014) outline six benefits of increased use of IBL: (1) inquiry-based approaches to teaching and learning have positive learning outcomes; (2) students are encouraged to become self-directed learners, who are engaged in the learning process; (3) the skills associated with IBL improve critical thinking, undertaking of independent inquiry, and responsibility for students' own intellectual growth and maturity; (4) IBL makes use of the increased importance of social activity and authentic learning contexts; (5) through collaboration, sharing of ideas, and group problem-solving, dialogue supports both students' academic and

social learning; and, (6) when compared to traditional instruction, students using IBL methods achieve statistically similar or higher grades. This last point, as mentioned above may only be supported by limited data, encouraging further work in the area.

Student engagement is seen as a major benefit of IBL, both in terms of participation in classroom activities and school attendance (Gonzalez, 2013). In some cases, IBL has been linked to greater student attendance and a reduction in discipline problems as measured through office referrals (Dobson, 2012). The element at work here is that of motivation: though students may find IBL challenging when compared to memorization and drill activities, they report that learning modules created through IBL are fun and enjoyable. Just as students generally find inquiry activities to be positive experiences, teachers of inquiry classrooms often enjoy the challenge of designing rich lessons. As the teacher becomes more experienced in IBL design, the quality of their work improves and they tend to feel more pride and purpose in their work as they see their students engaged and motivated to learn.

Collaborative and group work skills are central to IBL. Working in groups must be learned and practiced, can have benefits such as recall and use of information, communication, shared accountability to other group members, as well as evaluation and revision of peer work (Gonzalez, 2013). Group work through IBL also provides the opportunity to tackle real world problems and learn from professionals during the process, as Dobson (2012) illustrates when grade 9 students of South Queens Junior High in Nova Scotia worked with a local architect firm on a project called *School for the Future*. The school had developed an IBL module into its daily schedule, offering it the afternoon sessions. The project challenged students and professionals in architecture to create, a "...green school that would meet the needs of 21st century learners. They used the same design parameters as the architects. They were given a list of educational spaces

that had to be included in the final design of the new school and a 50,000 square foot maximum area into which everything had to fit” (p. 20). Such an activity provides ample opportunity for the development of critical thinking, creativity, geographical spatial awareness, but also allows group collaboration with experts in building design, which would be lacking in a traditional classroom setting.

Though not a requirement for IBL, technology can play a significant part in student learning. Indeed, some companies provide support to schools in the form of educational technologies to aid in IBL modules. In such cases, the students receive new means to access information (e.g., iPad, Mac Mini server, iPod Touch) as they research answers to their inquiry questions, as well as training for students and teachers in the use of these devices (Dobson, 2012). One subject specific application of technology for IBL lessons is through Geographic Information System (GIS) or Internet Geographic Information Systems (IGIS), which contain a wealth of digital information students can access during an inquiry:

A user accesses an IGIS through a Web browser where geographic data are displayed as maps and graphs based on user-selected criteria. The typical IGIS interface includes common GIS tools such as pan, zoom, identify, and select. Many IGIS also provide navigation tools such as drop-down menus, check boxes, and buttons to aid the user in manipulating the map view. Often, an IGIS user has the ability to save, print, and e-mail the maps he or she creates. Given that IGIS is delivered using a Web browser, the tools and graphic interface of most IGIS are more familiar and forgiving than the typical desktop GIS. (Milson & Earle, p. 227)

Of great benefit here is students’ ability to input their own data, or create visuals that help them analyze data they have researched. As Favier and Van der Schee (2012), who studied the characteristics of inquiry design using GIS, suggest:

Modern geography should not be seen as a ready-made product that can be handed over from the teacher to the students, but more like an activity that students can engage in. The problems, tasks, and settings of geography education should be meaningful, realistic, and relevant for students. Students should learn how to do geography: they should develop the knowledge, skills, and motivation to engage in geographic inquiry. (p. 666)

Though the traditional subject areas of social studies have often been taught as segments of facts and data, there are crucial skills and competencies that students must learn in order to fully engage with and make sense of the information. Technology coupled with IBL can make learning more interesting for students, while providing a greater level of analysis and engagement with subject area concepts. It should also be understood that while students have easy access to a range of information today, they often need to hone their analytical skills through IBL modelling on the part of the teacher (Watt & Colyer, 2014). Therefore, while learning information is not the sole purpose of IBL, it is achieved while students develop their critical and creative thinking abilities.

The benefits of IBL, as presented above, are significant both for teachers and students. The social and cognitive development children can experience while taking part in IBL result in greater levels of mental stimulation, social and ethical maturity, and greater engagement with the school environment as a whole. Positive academic outcomes related to grades and achievement of course outcomes may be seen as a result of these other benefits when taken together in the inquiry classroom. It is interesting to note that, while collaborative and group-based strategies as well as use of subject specific technology have significant benefits for the learning of children, these modes of learning are not reflected in the way learning is assessed on high stakes standardized pen and paper tests. In Newfoundland and Labrador, the World Geography 3202 and World History 3201 courses have 50% of students' final grade allocated for performance on year end public examinations. These exams test student achievement of course outcomes on traditional selected response and constructed response items. McTighe and Brown (2005) emphasize that:

[a]ssessments should require students' demonstrations of understanding, not just recall of information or formulaic modeling. Understanding is best revealed through multiple

forms of understanding, including real-world applications, explanations involving the construction of claims and arguments supported with evidence; analysis of perspectives associated with significant debates and controversial issues; expressions of empathy, with students encouraged to walk in the shoes of others; and self-reflection, involving students' growing ability to reflect, revise, rethink, and refine. (p. 235)

The public examination model, while being able to assess some of the above forms of understanding, leaves little room for assessment to match learning that occurred through collaboration or use of technology, the use of which is often encouraged by administration and district officials. A greater degree of connection between non-traditional teaching methods and evaluative tools could increase the benefit of IBL to levels of student achievement.

Making It Work

In light of the differences between standardized and inquiry-based methods of teaching and learning, it may seem as though these philosophies cannot be reconciled, however, this is not the case. As the dominant teaching system that has existed for centuries, standardized methods create a comfort zone for both teacher and student, providing standard types of knowing, methods for learning, and methods of assessing this learning. IBL challenges both parties to ever so slightly step outside of this comfort zone.

D'Souza (2012) believes that assessments do not need to change radically for IBL to be effective, rather how we use them should be altered: "The process of analyzing pupil work samples facilitates the exploration of formative assessment as a tool for improving both learning and subsequent teaching" (p. 79). Formative assessment is primarily concerned with gauging student progress through assessment methods other than tests and assignments with the purpose of providing constructive feedback. "Creating a climate that maximizes student accomplishment in any discipline focuses on student learning instead of on assigning grades" (Fluckiger, Vigil,

Pasco, & Danielson, 2010, p. 136) and, in order for this to occur, students must be partners in the assessment if they are to improve upon what they do. When this becomes a priority in the classroom, the focus shifts from numerical achievement to quality of teaching and learning.

Fluckiger et al. (2010) suggest a group reflective activity, applicable to high school social studies, they have called the “three-colour quiz”, in which a short constructed response assessment is given about a topic studied. First, students individually write their responses to four or five questions in one colour of ink to show what they have learned. Second, in small groups students discuss the questions and their responses, adding or clarifying understandings in a second colour of ink, showing the benefits of collaborative learning and self-assessment. A third colour of ink is used to clarify concepts or factual knowledge gained from text books or class notes. Another similar activity included in the Canadian Geography 1202 Curriculum Guide (Newfoundland and Labrador Department of Education, 2012), is a RAN chart, which helps students reflect on what they know before, during, and after an activity, clarifying any misconceptions they may have. Teachers can make use of these activities to formatively assess student progress and areas where additional help may be required.

Since it is desirable that students improve in their learning and teachers improve in their teaching, formative assessment can be utilized regardless of whether the class is predominantly standardized or inquiry-based. For the inquiry-minded teacher, each step in the research or inquiry process provides opportunity to construct feedback for students, which must be, “...specific, simple, descriptive, and focused on the task” (Fluckiger et al., 2010, p. 137) if it is to be effective. Making use of rubrics is one way of achieving this: when provided to students at the beginning of an assignment or project, they can use this as a kind of self-assessment to aid in revision and assess their own work. This can be used formatively during the assignment process

to allow the teacher to assess student understanding of learning tasks, which in turn should influence teaching practice in the future (D'Souza, 2012). In order for teachers to respond effectively to student learning needs, there must be ongoing diagnosis of learning difficulties (McTighe & Brown, 2005). If summative assessments are the primary methods employed by teachers, then discovery of learning difficulties has only occurred after and not during the learning process, defeating efforts to improve student understanding.

IBL done well involves a reflective component, which can be incorporated into almost any student activity. This metacognition can take the form of a short reflective paper (D'Souza, 2012) or journaling activities (Gonzalez, 2013):

Usually, I will ask the students about what they have learned that seems significant to them, or how their opinions about research or the material have changed as a result of their work. I always ask them to tell me what is proving easy or difficult for them, along with any questions or suggestions they may have. During the research process—and there is always some kind of research in my classes—I ask students to consider how their views of knowledge are changing. (p. 44)

Making use of metacognition helps students make sense of the learning tasks they are conducting, while asking them to recall content and make judgements about both. If students are new to the challenges of IBL, this process helps them adjust to it, but also come to terms with the differences between how they think and learn through IBL as compared with learning experiences through schooling, family, and friends in their past.

Inquiry is best scaffolded and incorporated gradually into the learning experiences of students accustomed to standardization. Watt and Colyer (2014) recommend beginning with guided inquiry and processing towards blended inquiry before any attempt is made at open inquiry. There is no expectation that every class is composed entirely of inquiry-based projects and some traditional instructional methods can be combined to help students navigate course content. Some use of traditional assessment methods can be combined with IBL, as IBL may not

be fully successful when incorporated completely on its own (D'Souza, 2012). Many students in a standardized system have become accustomed to traditional methods and have expectations and frameworks for their own learning developed through years of experiences. IBL can be introduced gradually or to a degree (i.e., blended inquiry) in such cases to allow students to adjust to new ways of learning and new expectations. The use of IBL strategies like self-assessment, student group sessions, student question formation, and growing independence gained from becoming more comfortable with inquiry can be used to explore a limited number of course outcomes at first. D'Souza's (2012) findings show, "...benefits of an inquiry approach in supporting teachers' changes in beliefs and practices over time. They support the use of guided inquiry to facilitate teachers in developing a stronger inquiry-stance on learning and encouraging their pupils to do the same" (p. 85). IBL can be implemented to varying degrees, but doing so at all encourages a culture of curiosity that can change attitudes on learning for both teachers and students.

Demonstration of student understanding of learning outcomes is traditionally shown through performance on examinations or tests, which are linked closely with standardization. If a melding of standardized and IBL methods is to have positive results in systems of education where standardized exams reflect school and teacher accountability, then summative assessments must reflect this. McTighe and Brown (2005), in discussing the reconciliation of standardization and Differentiated Instruction, encourage teachers to make use of open-ended questions and tasks that allow students variety in the expression of their learning:

Both backward design and DI emphasize the power and significance of culminating performance assessment tasks and projects. Specifically, such "respectful tasks" allow students to engage in independent decision-making, problem solving, investigation, experimental inquiry, creative expression, and related forms of higher-order thinking processes. By engaging in real-world tasks and projects, students learn to become increasingly independent and self-expressive through a variety of media and modalities.

It is also within the context of work on such respectful tasks that students can be most actively involved in making decisions about product, process, and presentation of final results. (p. 238)

This approach aligns with IBL in that the importance of a product that demonstrates learning is vital, but so too are educational values that promote inquiry skills and higher order thinking.

These assessments may be incorporated into instruction and student work throughout the school year to help improve student learning as teachers become more comfortable with scheduling and implementing such tasks. This being said, the kinds of products that Differentiated Instruction and IBL encourage of students will be at odds with those students are expected to produce on standardized tests. At least in this respect, tension will seem to persist between these methodologies unless change occurs to standardized testing.

Student achievement as measured through scores on standardized examination methods, as discussed above, seem at first to be incongruous with an inquiry approach to learning. In traditional classrooms, students are assessed through the grading of written assignments, worksheets, and tests, while in inquiry-based classrooms, student learning is assessed while the teacher teaches to gain insight into student understanding (Harmon et al., 2006): “Although correct and incorrect answers are important, the greater importance is in insight into students’ current understanding and the opportunity for them to become self-aware of their ability to construct meaning” (p. 7). There is the concern that if students instructed in inquiry are not explicitly taught certain facts and information and told they have to memorize these for a test, they will perform poorly on a test that assesses this kind of learning. However, certain instructional strategies have been shown to positively affect student performance on standardized tests: these include identifying similarities and differences, summarizing and note taking, reinforcing effort and providing recognition, homework and practice, non-linguistic

representations, cooperative learning, setting objectives and providing feedback, generating and testing hypotheses, and questions, cues and advance organizers (Harmon et al., 2006, p. 31). A number of these strategies have already been linked to the inquiry process and occur regularly in IBL classrooms.

As referenced earlier, Harmon et al. (2006), studying the effects of inquiry-based history programs on middle school and high school student achievement, found that sustained IBL learning experiences can increase student achievement on standardized history tests. Though historical knowledge has traditionally been assessed through recall of facts and information, students who have some experience with IBL and solving open-ended tasks, can recall rote learning objectives to a greater extent than those who have no IBL background. The study also found that students of teachers who implemented IBL programs at a more routine and comprehensive level outperformed students who had no inquiry-based experience.

An important consideration in IBL implementation includes teachers' attitudes and comfort levels with new methodology. If teachers are unwilling or unprepared to attempt inquiry activities in their classrooms, the barrier to its use is significant. In order for successful implementation of IBL in secondary social studies classes to take place, it is necessary that teachers understand the methods involved. Beshears (2013) suggests that improving teacher exposure to IBL through modelling, co-teaching, and training can increase the likelihood that educators will pursue its use further in their classrooms:

Inquiry-based teaching often requires teachers to shift their pedagogical paradigms because the teaching methods and the way the content is approached is drastically different from how they learned social studies. Teachers' perceptions of this shift, their ability to make the changes and learn the strategies themselves, and their success at implementing inquiry-based models in the classroom, must be addressed. (p. 2)

As mentioned earlier, such unfamiliarity with IBL can result from teachers' own educational experiences, having been schooled in traditional methods. If the effects of this are to be counteracted, professional development and cooperative learning opportunities should be implemented by districts and documentation detailing inquiry methods should be made readily available to teachers of high school social studies. The Newfoundland and Labrador Department of Education, as discussed earlier in this paper, has taken steps to move towards IBL implementation in its social studies curriculum documents. It would be recommended, however, that The Newfoundland and Labrador English School District provide professional development sessions for social studies teachers of all experience levels upon implementation of new and upcoming social studies courses in order to address difficulties that arise for teachers and schools.

A final aspect to consider when implementing IBL is that it is a process that requires constant revision in order to be successful. Favier and Van der Schee (2012) proposed a design process for IBL programs in geography education that emphasizes evaluation of not just student learning, but the IBL design itself. The teacher plans an inquiry experience for students, which involves student learning and exploration of new information. At predetermined points in the inquiry, the knowledge and skills of students are tested through formative assessment methods, the results of which are then used to evaluate the current IBL lesson design. When it has been determined which parts of the inquiry have been successful and which have not, the design is altered to reflect these findings and then conducted again. In terms of how practical this process is for teachers, Favier and Van der Schee (2012) note that there are three primary benefits: (1) to design tasks that attempt to develop higher level thinking skills through deep learning; (2) to diagnose student issues and difficulties that arises as they work through these tasks; and (3) to

provide support to students to help in overcoming these problems. The study finds that, "...it is necessary to offer a considerable amount of guidance, otherwise students are likely to conduct an inquiry with a low domain-specific quality, and spend most of their time on superficial details, and do not engage in deep geographic learning" (p. 673), which supports the use of guided or blended inquiry where students are not fully comfortable with the process involved.

Conclusion

Standardization and Inquiry-Based Learning are two very different topics within the field of social studies education: the former seeks conformity and control of student and teacher behaviours with the expectation that success can be measured and predicted based on certain criteria and procedures; the latter seeks to encourage students to develop critical thinking and creativity through open-ended investigations that require students to make steps towards taking the reins of their own learning. The roles of teacher and student change considerably: the teacher takes on a very different role in IBL than has been the case traditionally, becoming a facilitator and guide rather than a lecturer delivering information; the student takes on a new role as scholar, one who poses questions, investigates, analyzes and questions findings, and ultimately seeks to find solutions to societal problems through collaborative effort. Social studies disciplines (i.e., geography, history, civics, and economics) emphasize the importance of active citizenship and problem solving, making IBL a suitable approach for teachers. IBL also has significant benefits, among them student achievement, development of higher order thinking, greater student independence, increases in engagement and motivation, use of new technology such as GIS, and increased teacher enjoyment and effectiveness.

For a standardized system of education that wishes to validate itself through predictable results and student performance scores, IBL poses challenges, but these are not insurmountable. IBL can be incorporated into predominantly standardized social studies classrooms to varying degrees, whether it be guided, blended, or open inquiry, and early signs of this in the Newfoundland and Labrador context can be seen in recent changes to the social studies curriculum. The key point to keep in mind is that IBL is primarily about students and their learning, so the teacher must be able to formatively assess their abilities, skills, and attitudes, and design quality learning experiences that challenge and engage students. When incorporating IBL, it is useful to make employ some traditional teaching methods, such as lecture and presentation of content, to clarify aspects of a learning task and provide some comfort for students who are new to the process; doing so draws a link between traditional and, sometimes expected, instruction methods in social studies disciplines (e.g., geography and history) and the emphasis on use of information and evidence common in IBL. A full understanding of the roles of each individual involved is necessary to make this work in the classroom. Finally, research has shown that if teachers make effective use of inquiry in the courses they teach, student achievement on traditional forms of evaluation can be increased.

The extent to which IBL can be incorporated into social studies classrooms at the secondary level will vary depending on student and teacher background, as well as restrictions (e.g., standardized assessment methods) that are in place within the school system. However, guided and blended inquiry methods implemented gradually as students and teachers become comfortable with inquiry processes can effectively contribute to teaching and learning.

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